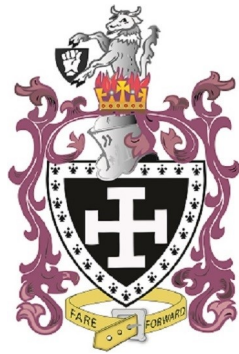# Year 10 Knowledge Organiser

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

John F Kennedy

Cycle 2

Buckler's Mead

Academy

Inspiring Education for All

Name:

Tutor:

Ready, Responsible, Respect

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 and retrieved from your long-term memory

The best way to use this resource is by self-quizzing through the **"look, cover, write and check"**

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 or mind map** the key definitions or facts that you need to know

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

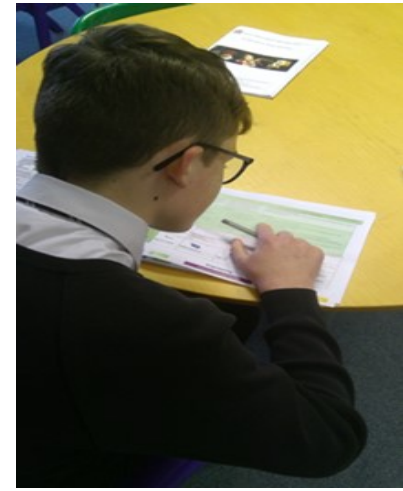**Finally** Correct anything that you wrote down that was incorrect

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Look	Cover	Write	Check

Community   Opportunity   *"Inspiring Education for All"*   Enjoyment   Success
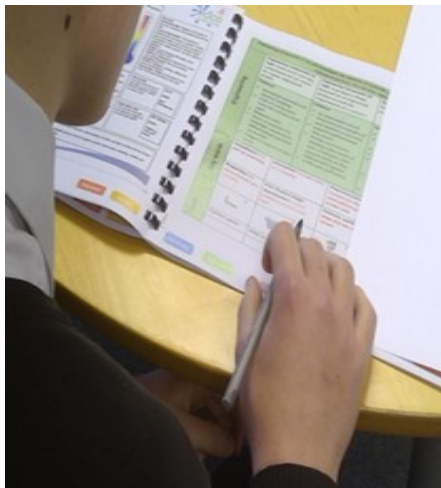
Key words to use

Shallow depth of field.

When this is used in the photograph only one area is in focus (clear and sharp), sections behind and/or in front are out of focus (blurry)

The camera used a small aperture (f1.8)

Large depth of field.

When this is used in the photograph the whole depth of the photo is in focus (clear and sharp) from the front to the back of the image.

The camera used a wide aperture (f22)

Key rules to use

Rule of Thirds
Imagine that your image is divided into 9 equal segments by 2 vertical and 2 horizontal lines. The rule of thirds says that you should position the most important elements in your scene along these lines.

Balancing Elements
Placing your main subject off-centre, as with the rule of thirds, creates a more interesting photo, but it can leave a void in the scene which can make it feel empty.

Leading Lines
When we look at a photo our eye is naturally drawn along lines. By thinking about how you place lines in your composition, you can affect the way we view the image.

Symmetry and Patterns
We are surrounded by symmetry and patterns, both natural and man-made., They can make for very eye-catching compositions, particularly in situations where they are not expected.

Cropping
Often a photo will lack impact because the main subject is so small it becomes lost among the clutter of its surroundings. By cropping tight around the subject you eliminate the background.

Background
A Photograph, Still life, landscape or portrait, using a plain and unobtrusive background that doesn't distract or detract from the subject.

Knowledge Organiser Y10 Photography NO: 1

Name...

Analysis of a Photograph

Does it contain any photographic rules?
Does it use the rule of thirds, golden section, leading lines and how does this effect the image?

What is the section you look at first and why?
Does it have any defocused areas, is this a distraction or does it help?
Where are the shadows and highlights, (the dark and the light sections) in this image?
Shadow and highlight control, does it look real or faked or photoshopped?

What is the section you look at first and why?
Is it a sharp image and what section or subject is this sharpness applied to? Why has this been done?

Where and how has the image been taken?
What is the subject of the photo, can you read the photo to tell me what's in it?

Art & Photography

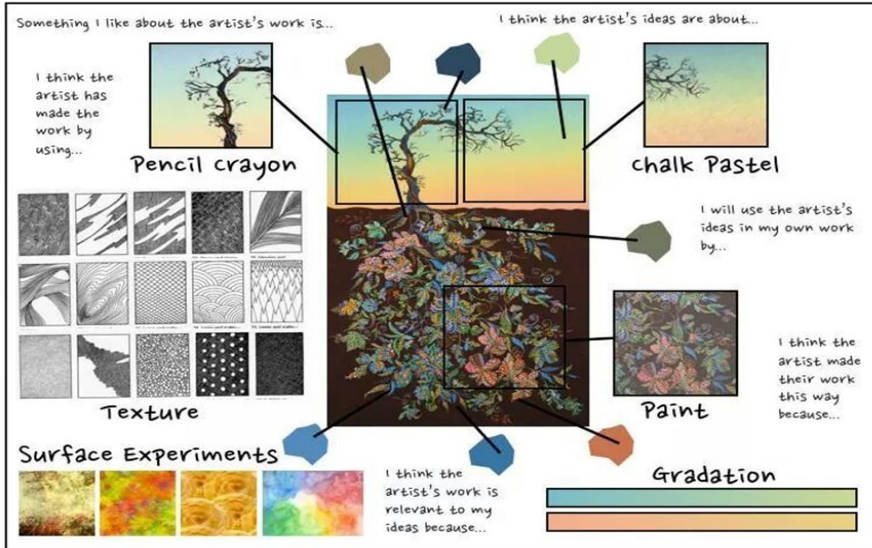*"Inspiring Education for All"*

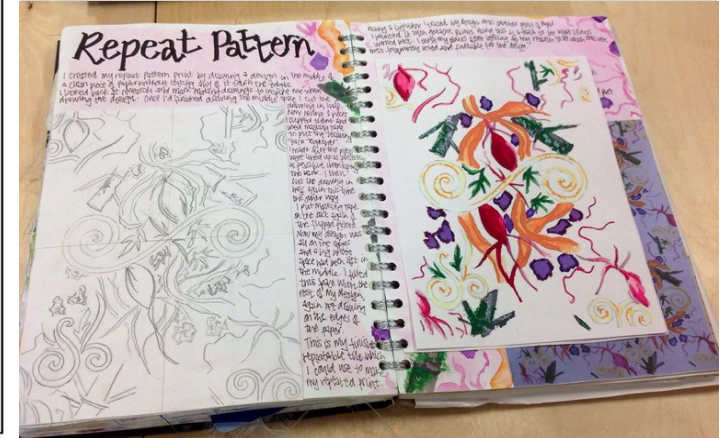Community   Opportunity   Enjoyment   Success

KEY WORDS
Large Scale
Colourful
Patterns

Transcription = Copy of artists work using the same media. Learn through trying to recreate the mood, process, content.

Analyse = In depth investigation using the formal elements to inform your writing.

AO1 EXPLORE
DEVELOP
DEVELOP IDEAS
INVESTIGATE & RESEARCH OTHER ARTISTS WORK
ANALYSE
ANNOTATE

AO1: Artist Research & Analysis

Something I like about the artist's work is...

I think the artist has made the work by using...

Pencil crayon

I think the artist's ideas are about...

chalk Pastel

I will use the artist's ideas in my own work by...

Texture

Surface Experiments

I think the artist's work is relevant to my ideas because...

I think the artist made their work this way because...

Paint

Gradation

Figures and **Pattern**

Repeat Pattern

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Artist research. What is a pattern? Examples of different	In depth research into one type of Pattern. E.g African, Henna, Contemporary.	In depth research into a second type of Pattern. E.g African, Henna, Contemporary.	Artist research page. What is a Zentangle	Artist Research FULL DROP/BLOCK PATTERN REPEAT HALF DROP PATTERN REPEAT BRICK PATTERN REPEAT DIAMOND PATTERN REPEAT OGEE PATTERN REPEAT TOSSED/ RANDOM PATTERN REPEAT STRIPE PATTERN REPEAT https://patternanddesign.com/7-most-common-surface-pattern-repeats/	

Art & Photography

Key terms

The European Union - An economic and political union between a number of European countries, who work closely together.

European parliament - The European Parliament is the directly elected parliamentary institution of the European Union

Member of European Parliament – Politicians elected to represent different countries and different parties at the European Parliament.

Non – democratic government – In summary, a country that does not hold free and fair elections, or recognise human rights.

Absolute monarchy – Power is held by one family based upon a hereditary principle of power being transferred down a royal line i.e. Saudi Arabia

Dictatorship – System of government where there is rule by one person or group i.e. North Korea.

Authoritarian rule – Where power is in the hands of a leader or a small group that is not accountable to the people.

Military – Where the government is run by the military i.e. Thailand.

One – party state – A system that only allows one political party to hold power i.e. China.

Oligarchy – A system where the control of the state and economy is by a small group of well placed, extremely wealthy individuals i.e. Russia (alongside elected government members).

Aristocracy – Government by the few, usually based upon inherited wealth and status in society i.e. what the UK was for many centuries.

Theocracy – There the government of the state is held by religious figures whose beliefs dominate the government system i.e. Iran.

Technocracy – A government system based upon people who are not elected by are technical experts i.e. Greece 2011 economic crisis.

The European Parliament

The European Parliament is the EU's **law-making body**. It is **directly elected by EU voters** every 5 years. The last elections were in May 2019.

The Parliament has three main roles:

Legislative
Passing EU laws, together with the Council of the EU, based on European Commission proposals
Deciding on international agreements
Deciding on enlargements

Supervisory
Democratic scrutiny of all EU institutions
Granting discharge, i.e. approving the way EU budgets have been spent
Examining citizens' petitions and setting up inquiries
Discussing monetary policy with the European Central Bank
Questioning Commission and Council

Budgetary
Establishing the EU budget, together with the Council
Approving the EU's long-term budget, the "Multiannual Financial Framework"

Composition
The number of MEPs for each country is roughly **proportionate to its population**, but this is by degressive proportionality: no country can have fewer than 6 or more than 96 MEPs and the total number cannot exceed 705 (704 plus the President). MEPs are grouped by political affiliation, not by nationality.
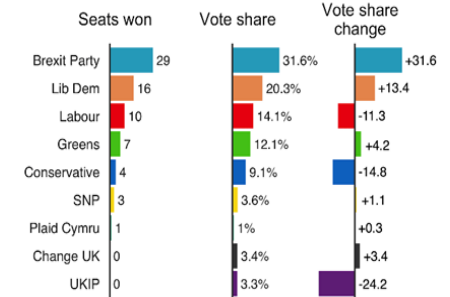
The President **represents Parliament** to other EU institutions and the outside world and gives the final go-ahead to the EU budget.

MEPs are elected by a closed party list. As the UK was still in the EU at the last election, UK voters were able to vote. The UK is split into 12 regions (i.e. the South East) and each voter gets one vote. They vote for the party they want (i.e. Labour) and then number of votes achieved by a party is then converted into seats.

https://www.europarl.europa.eu/unitedkingdom/en/european-elections/european_elections/the_voting_system.html - The video on this website explains the process very well.

The European Parliament Elections 2019

How did the parties do in Great Britain?

	Seats won	Vote share	Vote share change
Brexit Party	29	31.6%	+31.6
Lib Dem	16	20.3%	+13.4
Labour	10	14.1%	-11.3
Greens	7	12.1%	+4.2
Conservative	4	9.1%	-14.8
SNP	3	3.6%	+1.1
Plaid Cymru	1	1%	+0.3
Change UK	0	3.4%	+3.4
UKIP	0	3.3%	-24.2

Source: Press Association   BBC

The graph above shows how people voted. The voter turnout was 36.9%, which was expected due to historic low turnouts in these elections, as well as many people avoiding them in protest over Brexit not happening yet.

When Brexit does happen, all of these MEPs will no longer have a job. As shown in the video clip on the link, the Brexit Party had the largest share of the vote, so they got the most seats for UK MEPs.

What does an MEP do?

Similar to our MPs in the UK, MEPs work in the EU Parliament to bring about change for the better across the whole EU. One of their main jobs is to vote on laws that will cover the whole of the EU, i.e. air pollution or food safety laws, and as well as this work with other MEPs from different countries to share thoughts and ideas on a range of important topics such as climate change and human rights.

More information can be found here https://www.europarl.europa.eu/unitedkingdom/en/european-elections/what_do_they_do.html

GCSE Citizenship

"Inspiring Education for All"

Community   Opportunity   Enjoyment   Success

Year 10 Religion, Peace and Conflict

Key Terms
Peace- the absence of conflict
Justice- doing what is fair and right
Reconciliation- repairing damaged relationships
War- fighting between countries or groups of people.
Protest- to express your disapproval, usually in public.
Riots- the use of violence in public by large groups.
Terrorism- acts of violence targeted against the state usually for political reasons.
Holy War- a war that is fought in the name of God and the faith.
Lesser Jihad- a struggle in defence of the faith that can involve violence in some instances.
Extremism- a group of people who have views and beliefs that are seen as unreasonable and not appropriate.
WMD- weapons of mass destruction
Just War- a set of criteria that say war is ok under certain conditions.
Pacifism- the belief that violence is wrong.

Religious Teachings
Christianity "Blessed are the peacemakers"
"Those who live by the sword, die by the sword"
"You shall not kill"
Sanctity of life
"Do not repay evil with evil."

Islam "Do not with your own hands, contribute to your destruction"
"Those who have been attacked are permitted to take up arms"
" But if hey incline towards peace, you must incline towards it and put your faith in Allah"
"If you have saved the life of one man, it is like saving the whole of mankind."

Red Cross/Crescent
Victims of war= anyone who has been injured or affected by the fighting.
These organisations follow he principle of neutrality and do not take sides.
They provide refugee camps, medical supplies and equipment as well as treat the victims.
Organise ceasefires to allow both sides to recover bodies and treat the wounded.
Make sure that all sides respect the Geneva Conventions (rules of war)

Reasons for War
1. Defence- stop invasion
2. Revenge- to get own back after previous conflict.
3. Wealth and resources- to gain land and territory to improve the economy of the country.
4. Religious or Political Beliefs- when two sets of beliefs or ideas clash.
5. Overthrow an unfair ruler

Reasons for Terrorism
a) Religious extremism
b) Nationalism- to get rid of a foreign ruler
c) Persecution- when a group is being targeted and feel they have no other option
d) Ethnic Minorities when a group feel that they don't have a say and use violence to get the authorities to listen to them.

The Just War Theory- CLIPPS
Cause- there must be a good reason to fight
Last Resort- all other options have been tried.
Intention- there must be a good aim behind the fighting.
Proportion- you should only use enough violence to win and not go too far.
Proper authority- must be declared by a prime minister or king etc.
Success- You should only fight if there is a good chance you can win.

Holy War
A war that is fought in the name of God or the faith.
Crusades- were a series of Holy Wars fought to reclaim the Holy Land or Israel from the Saracens in the 10th Century.
Criticism- Holy means something that is special and given by God. Can we call a war holy if it involves death and destruction?

Lesser Jihad
A struggle in defence of the faith that can involve using violence.
Abu Bakr said that was acceptable if:
a) Did not harm innocent people, crops of holy men
b) Dead bodies and prisoners must be treated with respect.
c) Wars should be proportional .
d) Soldiers should be mentally and physically well enough to fight.

Pacifism-
Absolute Pacifism- someone who says violence is always wrong
Conditional Pacifism- there are some circumstances when violence may be a necessary evil.
Quakers- Are a Christian denomination that support this view.
Malala Yousef- A Muslim girl who fought for a girl's right to education who was shot by the Taliban. She has written books, blogs and newspaper articles campaigning for women's rights. She has given speeches to world leaders and is now a UN ambassador for human rights issues.

Examples of Recent Wars
Afghanistan- a war fought by the US and it's allies to remove the Taliban who were supporting and protecting terrorist groups.
Syria- a civil war fought between lots of different groups of people over who should rule the country. It is now also a war to remove the terrorist group ISIS from the country and Iraq.
Iraq- A war fought by the US and it's allies to remove Sadam Hussein from power and to remove terrorist Al-Qaeda groups who emerged after the invasion.

GCSE Religious Studies

PERFORMANCE THEME : underlying message, or 'big idea.

ACTING STYLES:

<u>Verbatim:</u> word for word; every single word from an audio file in text.

<u>Symbolism:</u> used to represent something different than what you will see at face value.

<u>Melodrama:</u> a sensational dramatic piece with exaggerated characters and exciting events intended to appeal to the emotions.

<u>Epic:</u> theatre which avoids illusion and often interrupts the story line to address the audience directly with analysis, argument, or documentation (i.e., placards)

<u>Comedy:</u> a literary genre and a type of dramatic work that is amusing and satirical in its tone, mostly having a cheerful ending.

<u>Absurdism:</u> theatre in which standard or naturalistic conventions of plot, characterization, and thematic structure are ignored or distorted to convey the irrational or fictive (created by the imagination) nature of reality and the essential isolation of humanity in a meaningless world.

<u>Classical:</u> an umbrella term for different **acting** techniques used together. It encompasses the use of the whole body, the full range and quality of the voice, the **actor's** imagination, the **actor's** ability to personalize, improvise, use external stimuli, and analyse scripts.

<u>Forum Theatre:</u> Audience stopping the performance and improving the action through feedback or by taking on the role of one character.

<u>Naturalism:</u> attempts to create an illusion of reality in terms of the setting and performances, should be realistic and not flamboyant or theatrical.

<u>Theatre of Cruelty:</u> developed by Antonin Artaud, aimed to shock audiences through gesture, image, sound and lighting. Artaud believed gesture and movement to be more powerful than text. Sound and lighting could also be used as tools of sensory disruption.

<u>Commedia dell' Arte:</u> a form of popular theatre that emphasized ensemble acting (small group). Its improvisations were set in a firm framework of masks and stock situations.

ACTING FOR THE SCREEN VERSES ACTING ON STAGE: http://en-acting-what-are-the-differences/#:~:text=When%20acting%20for%20screen%2C%20actors,can%20look%20unrealistic%20on%20screen.

CLASSICAL ACTING: an umbrella term for different **acting** techniques used together. It encompasses the use of the whole body, the full range and quality of the voice, the **actor's** imagination, the **actor's** ability to personalize, improvise, use external stimuli, and analyse scripts.

https://en.wikipedia.org/wiki/Classical_acting

METHOD ACTING: a **technique** or type of **acting** in which an **actor** aspires to encourage sincere and emotionally expressive performances by fully inhabiting the role of the character. It is an emotion-oriented **technique** instead of classical **acting** that is primarily action-based.

https://strasberg.edu/about/what-is-method-acting/#:~:text=The%20Method%20trains%20actors%20to,can%20fire%20the%20actors%20imagination.&text=As%20Lee%20Strasberg%20said%2C%20Method,done%20whenever%20they%20acted%20well.

CREATIVE INTENTIONS (reference performance style, theme, and target audience): refers to the decisions, made by theatre makers to communicate deeper **meaning** through their work. Without an artistic **intention** a piece of drama lacks a purpose or a message for its intended audience.

ROLES, RESPONSIBILITIES AND SKILLS IN THE PERFROMING ARTS:

Drama

Engineering Component 2 You will investigate the selection of materials, proprietary components, making processes and disassembly of a given engineered product. You will plan, reproduce, inspect and test a single component		

	Engineering Component 2A Task; Understand materials, components and processes for a given engineered project	**Engineering Component 2B** Task; to produce a design proposal for an engineered product to meet the requirements of a customer	**Engineering Component 2C** Task; to plan the manufacture and safely reproduce/inspect/test a given engineered product
Engineering	**Evidence** ✓ Annotated assembly and detailed drawings ✓ A list of components, materials and processes used ✓ Research notes ✓ Notes to evaluate the materials, components and processes you have researched ✓ Images in support of your work	**Evidence** ✓ An observation record ✓ Annotated photographs of your labelled components ✓ Inspection/dimensional data sheets ✓ Written commentary showing a description of each component, their purpose and how they link/work/fit together ✓ A PDS with justification	**Evidence** ✓ Your original production plan ✓ A copy of your production plan showing your further notes after discussion with your assessor ✓ Observation records ✓ Annotated photographs of you making your component ✓ Inspection/dimensional data-a record of the measurements and other observations on quality, plus comments about any errors and how to resolve them ✓ Written commentary showing your evaluation of the success of your production plan and production of the component and any improvements ✓ Your finished component

Key words	Components = *A part of something*	Annotation= *to make notes on a drawing*	Proprietary/product specific components= *Components that you can find anywhere they are universal/components that are specific to the product only*		Disassembly= *taking a product a part for analysis*
	Properties= *the characteristics of a material*	PDS- Product Design Specification= *a list of criteria to product must have*	Accuracy, quality control = *checking at every stage that the measurements and quality are correct*		Making processes such as *marking out, cutting out/wasting, filing, finishing*

	1	2	3	4	5	6
Tools	Engineers square	Metal working vice	Pillar drill	Centre punch	scriber	Vernier caliper

Design & Technology — Engineering

Food science

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.

To find out more go to: https://bit.ly/2SPqWEG

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;
- 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.

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

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).

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.

Key terms
Conduction: the exchange of heat by direct contact with foods on a surface.
Convection: currents of hot air or hot liquid transfer the 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.

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.

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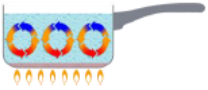
Tasks
- Choose a recipe that you enjoy or have made recently and explain in detail the functions of the ingredients.
- Explain the function of raising agents, giving examples of recipes.

Design & Technology — Food & Nutrition

Cooking

- A broad range of ingredients, equipment, food skills and techniques, and cooking methods are used to achieve successful results.
- Recipes and cooking methods can be modified to help meet current healthy eating messages.

Why is food cooked?
Some foods can be eaten raw and form an important part of the diet. However, many foods need to be prepared and cooked before they are eaten to:
- make the food safe to eat by destroying pathogenic micro-organisms and toxins;
- destroy microorganisms and enzymes that cause food to deteriorate and therefore increase the keeping quality of the food;
- make the food more digestible and easier to absorb.

Food skills
There are a number of food skills which enable a variety of increasingly complex dishes to be prepared and made.
These can include:
- beating, combining, creaming, mixing, stirring and whisking;
- blitzing, pureeing and blending.
- kneading, folding, forming and shaping;
- knife skills;
- rubbing-in and rolling-out;
- use of the cooker: boiling/simmering/poaching, frying, grilling, roasting and baking;

Safety
- Sharp knives: never walk around with a knife. Use the *bridge hold* and *claw grip* to cut safely.
- Grater: hold grater firmly on a chopping board. Grate food in one direction and leave a small amount at the end to prevent injury to knuckles.
- Hot liquid: drain hot liquid carefully over the sink using a colander.
- Saucepans: turn panhandles in from the edge, so they are not knocked.
- Hot equipment: always use oven gloves when placing food in and out of the oven.
- Spills: wipe up immediately.
- Electrical equipment: always follow instructions.

To find out more, go to:
https://bit.ly/322eSpr

Food skills are acquired, developed and secured over time.

Bridge hold

Claw grip

Food skill		Food skill		Food skill	
Bake		Mash		Peel	
Beat		Measure		Portion / divide	
Blitz, puree and blend		Melt, simmer and boil		Prove	
Casserole		Cut out		Roast	
Chill		Cut, chop, slice, dice and trim		Roll-out	
Core		Decorate and garnish		Rub-in	
Cream		Drain		Sift	
Crush		Fold		Snip	
Grate		Form and shape		Spread	
Grill		Fry and sauté		Stir-fry	
Juice		Glaze and coat		Weigh	
Knead		Microwave		Whisk	
Grate		Form and shape		Spread	
Layer		Mix, stir and		Zest	

Heat exchange/transfer
Cooking requires heat energy to be transferred from the heat source, e.g. the cooker hob, to the food. This is called heat transfer or heat exchange. There are three ways that heat is transferred to the food. They are:
- conduction – direct contact with food on a surface, e.g. stir-frying;
- convection - currents of hot air or hot liquid transfer the heat energy to the food, e.g. baking;
- radiation - energy in the form of rays, e.g. grilling.

Many methods of cooking use a combination of these. The amount of heat and cooking time will vary according to the type of food being cooked and the method being used.

Cooking methods
These are based on the cooking medium used:
- moist/water based methods of cooking, e.g. boiling, steaming, stewing, braising;
- dry methods of cooking, e.g. grilling, baking roasting, toasting, BBQ;
- fat-based methods of cooking – stir, shallow and deep fat frying.

Vegetable cuts

batons – 5-6.5cm long x 1 cm square

dice – 1cm square

julienne/match stick – 5-6.5cm long x 3 mm square

fine julienne – 5-6.5cm long x 1.5mm square

Task
Complete the *Food route Cooking journal*:
https://bit.ly/3dYUibH

Key terms
Conduction: The exchange of heat by direct contact with foods on a surface e.g. stir-frying or plate freezing.
Convection: The exchange of heat by the application of a gas or liquid current e.g. boiling potatoes or blast chilling.
Heat transfer: Transference of heat energy between objects.
Radiation: Radiation is energy in the form of rays e.g. grilling.

Cooking for health
Take into account healthy eating recommendations to ensure that dishes/meals are part of a varied, balanced diet.
- Planning - does the meal meet the nutritional needs and preferences of those it is being cooked for? Base your meals on starchy food.
- Choosing - choose low fat/sugar/salt versions, where possible.
- Preparing - limit the amount of fat added (try a spray oil) and replace salt with other flavourings, such as herbs and spices.
- Cooking - use cooking practices which reduce the amount of fat needed and minimise vitamin losses from fruit and vegetables.
- Serving - serve the meal in proportions which reflect current healthy eating advice. Do not forget to include a drink.

Healthier cooking methods
- Grill or BBQ foods rather than fry to allow fat to drain away.
- Drain or skim fat from liquids, e.g. sauces, stews and casseroles.
- Dry fry using non-stick pans, so no need for oil.
- Oven bake rather than fry.
- Steam or microwave vegetables.

Design & Technology — Food & Nutrition

Key Textile Techniques to try

- Applique
- Batik
- Beading
- CAD
- Couching
- Embroidery
- Felting
- Knitting
- Macramé
- Mola
- Patchwork
- Pleating
- Printing
- Quilting
- Ruffles
- Smocking
- Suffolk Puffs
- Tie Dye
- Weaving
- 3D Shibori

Keywords to use in your analysis

- Aesthetics
- Style
- Process
- Trend
- Connotation
- Textile Technique
- Movement
- Colour
- Line
- Form
- Tone
- Texture
- Shape
- Pattern
- Decoration
- Repetition
- Scale
- Structure

What is a source?

A source can be absolutely ANYTHING you are inspired by! Below is an example of different sources you might include in your sketchbook:

- **A Theme Mind Map** – Mind map all the things you can think of relating to your topic! Include images if you want to.
- **Mood Board** – Collect images linked to your theme into a moodboard – annotate keywords about the images / theme.
- **Artist / Designer Analysis** – Look at an existing artist or designer and complete an analysis of their work
- **Take your own photographs** – You can use your own photos as a source of inspiration. Annotate them explaining how they link to your theme.

How to Analyse a Designer / Artist:

- Introduce the work of your designer or artist (**key facts only**), **how** does their work fit into trends at the time it was produced or current trends?
- Are there any social, environmental, moral, issues surrounding your designers work?
- Consider **what** key features appear regularly in your designers work, **why** might that be?
- **What** colours do they use a lot of? **What** effect does this give?
- **Who** do you think their designs are aimed at? **Why**?
- Explain what you like / dislike about the designs and **why** that is.
- **What** techniques has the designer used? **Why**? Could different techniques be used to create different effects?
- **How** will this designer inspire your work? **How** does the designer fit into the theme? **What** techniques will you sample? **Why**?

Key Points to Remember

There is a difference between **Analysing** and *Stating*. Analysing will always get you more marks that stating.

Denotation: Literally stating what something is
Connotation: Explaining the meaning of something, what it **connotes.**

See the below example:

This is a pink heart.
It connotes, love and friendship

Using a source

Once you have analysed a source – what do you do next? Here are some ideas:

- Complete a textile sample, using your source as inspiration
- Do some initial idea sketches, using your source as inspiration
- Compare 2 different sources in your sketchbook using a VEN diagram

CAD: Computer-aided design (CAD) is the use of computers (or workstations) to aid in the creation, modification, analysis, or optimization of a design

Embroidery -
Embroidery is the craft of decorating fabric or other materials using a needle to apply thread or yarn

3D Shibori:

A technique for adding texture to textiles by exploiting the thermoplastic qualities of some synthetic fabrics.

Design & Technology — Textiles

Community   Opportunity   *"Inspiring Education for All"*   Enjoyment   Success

What is Urbanisation?

This is an increase in the amount of people living in urban areas such as towns or cities. In 2007, the UN announced that for the first time, more than 50 % of the world's population live in urban areas.

Where is Urbanisation happening?

Urbanisation is happening all over the word but in LICs and NEEs rates are much faster than HICs. This is mostly because of the rapid economic growth they are experiencing.

Causes of Urbanisation

Rural - urban migration (1)	The movement of people from rural to urban areas.

Push	Pull
• Natural disasters • War and Conflict • Mechanisation • Drought • Lack of employment	• More Jobs • Better education & healthcare • Increased quality of life. • Following family members.

Natural Increase (2)	When the birth rate exceeds the death rate.

Increase in birth rate (BR)	Lower death rate (DR)
• High percentage of population are child-bearing age which leads to high fertility rate. • Lack of contraception or education about family planning.	• Higher life expectancy due to better living conditions and diet. • Improved medical facilities helps lower infant mortality rate.

Types of Cities

Megacity	An urban area with over **10 million people** living there.

More than two thirds of current megacities are located in either NEEs (Brazil) and LICs (Nigeria). The amount of megacities are predicted to increase from 28 to 41 by 2030.

Sustainable Urban Living

Sustainable urban living means being able to live in cities in ways that do not pollute the environment and using resources in ways that ensure future generations also can use then.

Water Conservation

This is about reducing the amount of water used.
• Collecting rainwater for gardens and flushing toilets.
• Installing water meters and toilets that flush less water.
• Educating people on using less water.

Energy Conservation

Using less fossil fuels can reduce the rate of climate change.
• Promoting renewable energy sources.
• Making homes more energy efficient.
• Encouraging people to use energy.

Creating Green Space

Creating green spaces in urban areas can improve places for people who want to live there.
• Provide natural cooler areas for people to relax in.
• Encourages people to exercise.
• Reduces the risk of flooding from surface runoff.

Waste Recycling

More recycling means fewer resources are used. Less waste reduces the amount that eventually goes to landfill.
• Collection of household waste.
• More local recycling facilities.
• Greater awareness of the benefits in recycling.

Unit 2a

Urban Issues & Challenges

Sustainable Urban Living Example: Freiburg

Background & Location	Sustainable Strategies
Freiburg is in west Germany. The city has a population of about 220,000. In 1970 it set the goal of focusing on social, economic and environmental sustainability.	• The city's waste water allows for rainwater to be retained. • The use of sustainable energy such as solar and wind is becoming more important. • 40% of the city is forested with many open spaces for recreation, clean air and reducing flood risk.

Integrated Transport System

This is the linking of different forms of public and private transport within a city and the surrounding area.

Brownfield Site

Brownfield sites is an area of land or premises that has been previously used, but has subsequently become vacant, derelict or contaminated.

Traffic Management

Urban areas are busy places with many people travelling by different modes of transport. This has caused urban areas to experience different traffic congestion that can lead to various problems.

Environmental problems

• Traffic increases air pollution which releases greenhouse gases that is leading to climate change.

Economic problems

• Congestion can make people late for work and business deliveries take longer. This can cause companies to loose money.

Social Problems

• There is a greater risk of accidents and congestion is a cause of frustration. Traffic can also lead to health issues for pedestrians.

Congestion Solutions

• Widen roads to allow more traffic to flow easily.
• Build ring roads and bypasses to keep through traffic out of city centres.
• Introduce park and ride schemes to reduce car use.
• Encourage car-sharing schemes in work places.
• Have public transport, cycle lanes & cycle hire schemes.
• Having congestion charges discourages drivers from entering the busy city centres.

Traffic Management Example: Bristol

In 2012 Bristol was the most congested city in the UK. Now the city aims to develop it's integrated transport system to encourage more people to use the public transport. The city has also invested in cycle routes and hiring schemes.

Greenbelt Area

This is a zone of land surrounding a city where new building is strictly controlled to try to prevent cities growing too much and too fast.

Urban Regeneration

The investment in the revival of old, urban areas by either improving what is there or clearing it away and rebuilding.

Geography

"Inspiring Education for All"

Community

Opportunity

Enjoyment

Success

Urban Change in a Major UK City: Bristol Case Study

Location and Background

Bristol is a city in Somerset in the **SW of England**. The population of the city is 750,000, making it the fifth largest in the UK. It has an airport, **large trading port** and junction of M5/M4.

City's Importance

- The city enjoys a large sporting heritage with famous athletes and football clubs.
- Bristol is famous for being described as the greenest city in Europe & **was EU green Capital 2015**
- Bristol has a thriving community of international students.
- Bristol has two major UK universities popular with young students.

Migration to Bristol

With the attraction of working in the large docks migrants from places like the Caribbean came to work in Bristol from 1900-1960.
Also Bristol has attracted thousands of students from the UK & abroad.
These migrants bring a **hardworking force**, enrich the **culture** and **lower the ageing population**. However, there is **pressure on housing, services** and integration into the wider community eg **racism**

City Challenges

Social: House prices have increased along with greater house shortages leading to **inequality**.
A third of households live in the 10% of the most deprived wards in the UK eg **Filwood & Temple Quarter. Life expectancy** is 78years, lower than national average. Most homes are **rented and poorly insulated.** 33% are unemployed.
Stokes Croft; inner city area with warehouses and housing for dockworkers. **High levels of dereliction.** Stoke Bishop is affluent area; 94% have good education. Life expectancy is 83. Only 3% unemployed.
Economic: Closure of the docks and factories caused **large scale unemployment** due to cargo ships not being able to sail up river as they were too large.
Environmental: Urban sprawl has led to increased pressure and decline of **greenfield sites** around the city eg 500 homes at **Harry Stoke.**
0.5 million tonnes of waste produced a year which mainly went to **landfill.**
Air pollution from **traffic congestion** causes 200 premature deaths

Opportunities continued

Urban greening is process of increasing the amount of open spaces in a city. Plan is for everyone to be within 300m of a green space.
Bristol has an ITS (**Integrated Transport System**) which encourages people to use public transport
- Rapid Transit Network (three bus routes linking to train stations)
- Electrification of the rail line to London
- Increase in cycle lanes

City's Opportunities

Social Opportunities: Bristol has various cultural attractions such as the SS Great Britain & museums. Also Cabot Circus & Cribbs Causeway are very popular with shoppers.
Economic: Opportunities: The **tertiary** & **quaternary** sectors contribute to thousands of jobs. The Universities and **advanced manufacturing** adds contribute to the city's economy. Hi-tech industries have been attracted to Bristol due to:
- £100m government grant to become the Silicon Valley of the UK
- Skilled workforce
- Advanced research in IT & aerospace industries
- Clean and non-polluting environment

Environmental Opportunities: Bristol is described as being the greenest city in Europe. It has various open spaces (i.e. Queen Sq) and has developed its urban greening project
Quaternary Industries include:
Aardman Animations – makers of Wallace & Gromit using still clay motion techniques
BAE, Rolls Royce and Airbus – designers and manufacturers of aircraft. Supply chains have grown up to provide equipment for these companies

Regenerating Temple Quarter

Aims: Bristol wanted to attract investment in more businesses and job opportunities. Also the projects aim to improve public spaces with more green urban environments.
Main features: **Brownfield sites** and derelict buildings pulled down, £120 million on social & economic improvements with the construction of the Temple Quarter and Stokes Croft.
Engine Shed: £1.7m conversion for hi-tech industries with the aim of creating over 5000 jobs
Temple Quarter Enterprise Campus: £300m campus of over 3500 students to study business, engineering and ICT subjects
Temple Meads Regeneration: £2B upgrade of station and rail to speed travel up between Bristol & rest of UK, especially London
Temple Greenway: creation of walkways, cycle paths & riverboat journeys to reduce vehicle use and improve people's health

Urban Change in a Major NEE City: RIO DE JANEIRO Case Study

Location and Background

Rio is a coastal city situated in the South East region of Brazil within the continent of South America. It is the second most populated city in the country (6.5 million) after Sao Paulo.

City's Importance

- Has the second largest GDP in Brazil It is headquarters to many of Brazil's main companies, particularly with Oil and Gas.
- Sugar Loaf mountain is one of the seven wonders of the world.
- One of the most visited places in the Southern Hemisphere.
- Hosted the 2014 World Cup and 2016 Summer Olympics.

Migration to Rio De Janeiro

The city began when Portuguese settlers with slaves arrived in 1502. Since then, Rio has become home to various ethnic groups. However, more recently, millions of people have migrated from rural areas that have suffered from drought, lack of services and unemployment to Rio. People do this to search for a better quality of life.
This expanding population has resulted in the rapid urbanisation of Rio de Janeiro.

City's Opportunities

Social: Standards of living are gradually improving. The Rio Carnival is an important cultural event for traditional dancing and music.

Economic: Rio has one of the highest incomes per person in the country. The city has various types of employment including oil, retail and manufacturing.

Environmental: The hosting of the major sporting events encouraged more investment in sewage works and public transport systems.

City Challenges

Social: There is a severe shortage of housing, schools and healthcare centres available. Large scale social inequality, is creating tensions between the rich and poor.

Economic: The rise of informal jobs with low pay and no tax contributions. There is high employment in shanty towns called Favelas

Environmental: Shanty towns called Favelas are established around the city, typically on unfavourable land, such as hills.

Self-help schemes - Rocinha, Bairro Project

- The authorities have provided basic materials to improve peoples homes with safe electricity and sewage pipes.
- Government has demolished houses and created new estates.
- Community policing has been established, along with a tougher stance on gangs with military backed police.
- Greater investment in new road and rail network to reduce pollution and increase connections between rich and poor areas.

Geography

"Inspiring Education for All"

Community   Opportunity   Enjoyment   Success

History: Post-war America

Key people

Presidents during the Civil Rights movement

John F Kennedy
The president behind the 'New Frontier'. Assassinated in 1963. Was a supporter of Civil Rights

Lyndon B Johnson
The President who replace JFK. Also introduced the 'Great Society'. Also passed Civil Rights legislation.

Political figures

Martin Luther King
One of the most famous peaceful civil rights leaders

Malcolm X
Follower of the Nation of Islam. Believed in using violence as form of protest

Betty Friedan
Author of *The Feminine Mystique* – turning point in attitudes to women

Celebrities

Elvis Presley
Rock and Roll singing heart throb

The American Dream
During the 1950s, the phrase 'American Dream' became popular across the world. The 'dream' was one of wealth, freedom and happiness. White Americans aimed for the dream, and those sections of society that felt excluded from the economic benefits of post-war America aimed to achieve the same status as the wealthy. Immigrants from other countries moved to the USA following the 'dream', in the belief that anything was possible in liberal America for those who worked hard and dreamed big. This image was strengthened by a boom in advertising on TV. These adverts would show Americans what success looked like, and it always involved buying more products.

Key words

Black Power Movement	African-American movement emphasising racial pride and equality
Civil Rights	The right of citizens to political and social freedom and equality
Feminism	The advocacy of women's rights on the ground of the equality of the sexes.
Great Society	Johnson introduced many social reforms to help tackle the problems of unemployment, bad housing and medical
McCarthyism	Campaign against alleged communists in the US government and other institutions.
Popular Culture	Culture based on the tastes of ordinary people rather than an educated elite.. Music, art, film, literature etc.
Suburbs	Residential areas built outside towns and cities
Consumerism	Encouraging people to buy goods in increasing amounts
Rock and Roll	New style of music made famous by Elvis. Very popular with teenagers. Often had sexualised lyrics.
Red Scare	Communist spies found in the USA, fear of communism spread like wildfire
HUAC	The House of Representatives Un-American Activities Committee. Connected to McCarthyism.
Little Rock	Court case involving African American students who were due to attend a previously white school.
Montgomery Bus Boycott	African American refusal to use the busses in America after the actions of Rosa Parks.
Sit-in	African Americans using 'white only' sections of restaurants etc and refusing to leave
Black Panther Party	Formed 1966 and had 5000 members. Seen as violent but also provided help such as education and soup kitchens.
The Nation of Islam	Argued that there should be racial separation as white culture was corrupt.
NOW	National Organisation for Women. Had up to 40,000 members. Mainly middle class and middle aged. Campaigned for rights.
Women's Liberation Movement	Younger women who used a more direct approach and became knows as women's lib.

Key events

Society and economy
- The economy was now far stronger having produced weapons for the war
- Women were still struggling with equality. It was seen by a lot of men that a woman's place was in the home
- The American Dream dominated society. The idea that all Americans were able to live their best life
- Rock and Roll dominated the charts and teenagers made this music their own. They had money of their own, $10 - $15 a week compared to $1 - $2 a week in the 1940s.
- Communism created huge levels of fear in society. The USSR was deeply feared by the American Government and the American people.
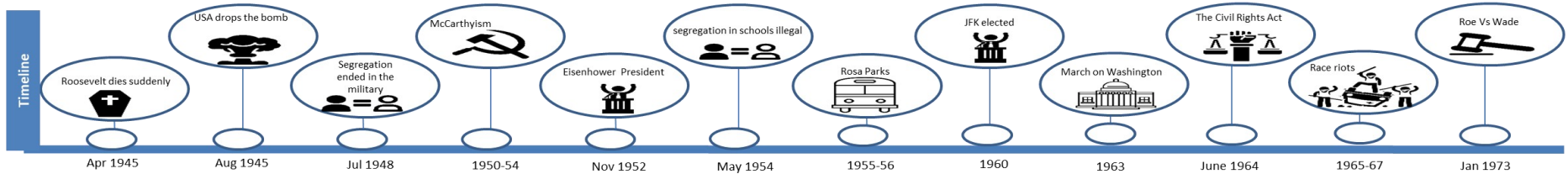
Racial tension
- America was still segregated. African Americans and White Americans were educated and entertained separately. This was the time period in which segregation would be challenged.
- Men like Martin Luther King, Malcom X, President Kennedy and President Johnson would all make contributions to this.
- The courts were used to force de-segregation. Many opposed this. The most famous cases being in Little Rock and Montgomery.
- Progress was slow. Martin Luther King's passive resistance methods were soon challenged by the direct action of men like Malcom X.

America and the 'Great Society'
- President Kennedy started to move towards the idea that the Government would become more involved in the lives of every day Americans. He did work around Civil Rights, Education, Health Care and the economy. Kennedy was assassinated before he could complete his work.
- President Johnson had been Kennedy's Vice President. He continued the work of Kennedy and called it the Great Society. He raised the minimum wage from $1.25-$1.40, cleared up slums, provided medical care for the elderly and low income families. His work was overshadowed by his Government's involvement in the Vietnam War.

Women
- Women were also pushing for changes. Equal pay was wanted, equal job opportunities and rights over their own bodies.
- Two movements were set up NOW and Women's Lib. These had very different types of women in them and they wanted very different things. This made them less effective as they were divided.
- Roe Vs Wade was a stand out court case that saw women gain more rights over their own bodies and changed American abortion laws.

Timeline

Date	Event
Apr 1945	Roosevelt dies suddenly
Aug 1945	USA drops the bomb
Jul 1948	Segregation ended in the military
1950-54	McCarthyism
Nov 1952	Eisenhower President
May 1954	segregation in schools illegal
1955-56	Rosa Parks
1960	JFK elected
1963	March on Washington
June 1964	The Civil Rights Act
1965-67	Race riots
Jan 1973	Roe Vs Wade

History

Knowledge Organiser for Mathematics — VOCABULARY

Fraction

Ratio

Proportion

Percentage

Numerator

Denominator

Division

Equivalent

Integer

Decimal

Recurring

Polygon

Reciprocal

Scale factor

Inverse

Operator

Terminating

Unitary

Simplest form

Simple Interest

Compound Interest
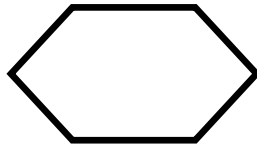
Greater than

Product

Less than

Knowledge Organiser for Mathematics — SHAPES

Students often confuse these two shapes:

PENTAGON (5 sided polygon)   **HEX**AGON (6 sided polygon)

Make sure **YOU** know the difference!

Knowledge Organiser for Mathematics — FACTS & FORMULAE

To find 10% of an amount divide the amount by 10.

10% of 45 is 4.5 because 45 ÷ 10 = 4.5

To convert from a fraction to a decimal divide the numerator by the denominator.

$\frac{3}{8}$ = 3 ÷ 8 = 0.375

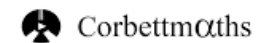To convert from a decimal to a percentage multiply the decimal by 100.

0.375 x 100 = 37.5%

A number and its reciprocal will have a product of –1.

Knowledge Organiser for Mathematics — USEFUL LINKS

* https://vle.mathswatch.co.uk/

* PASSWORD: bucklers123

* https://corbettmaths.com/

* https://www.drfrostmaths.com/

* PASSWORD:

* https://www.bbc.co.uk/bitesize

* https://www.khanacademy.org/

Maths

- What does the word DENOMINATOR mean in mathematics?
- Convert each of the numbers in the table from a fraction to a decimal or vice versa.

Fraction to decimal	Decimal to fraction
$\frac{1}{10}$	0.6
$\frac{3}{8}$	0.45
$\frac{3}{5}$	0.2
$\frac{2}{3}$	0.25
$\frac{3}{4}$	0.125

- What is 10% of 500?
- What is the reciprocal of 2?
- If 10% is 50, what will 5% be?
- What does the word PRODUCT mean in mathematics?
- If PENT is five and HEX is six what is OCT?
- What does the word INTEGER mean in mathematics?
- Clare says the reciprocal of 0.5 is 5. Is she correct? Explain your answer.
- If 10% is 56 what will 7.5% be?
- Write 12/20 in its simplest form.
- Find three fractions equivalent to 7/10.
- Convert 0.67 into a percentage.
- This is Dave's working to the question: Find 23% of 450. He has made a mistake. Correct Dave's working.

$$450$$

$$10\% = 45$$
$$1\% = 5$$
$$1\% = 5$$
$$+\ \underline{1\% = 5}$$
$$23\% = 60$$
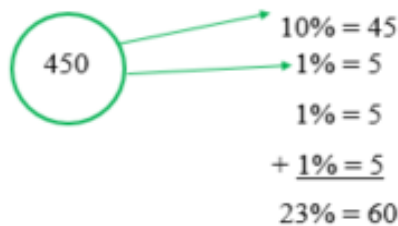
I want to add another section the knowledge organiser called "Maths in Action".
Research how angles, shapes and factors, multiples and primes are used in everyday life. Add your findings to the section below.

Knowledge Organiser for Mathematics - MATHS IN ACTION

Maths

Community Opportunity *"Inspiring Education for All"* Enjoyment Success

Global Sustainability: Environment

Useful verbs 🎵

augmenter	to increase
combattre	to fight
détruire	to destroy
disparaître	to disappear
Eempêcher	to prevent
endommager	to endanger
épuiser	to exhaust/use up
éteindre	to switch off
gaspiller	to waste
jeter	to throw
manquer	to lack
menacer	to threaten
protéger	to protect
provoquer	to cause/provoke
ramasser	to collect/gather
recycler	to recycle
résoudre	to solve/resolve
réutiliser	to reuse
salir	to make dirty
sauver	to save
tuer	to kill
utiliser	to use

Recycling Vocabulary ↻

Le bois	wood
La boite	tin/can/box
Le carton	cardboard
L'emballage	packaging
Les ordures	the rubbish
Le panneau solaire	solar panel
Le papier	paper
La pile	battery
Rechargeable	rechargeable
Le recyclage	recycling
Le sac en plastique	plastic bag
Le verre	glass

Key points ⬇

Problems
Solutions

Who is to blame?
What do you do/
could do to help?

Imperatives ↔

In French use the "vous" form of the present tense.

Economisez	Save/economise !
Fermez	Close !
Mettez	Put !
Luttez	Fight !
Protégez	Save !
Recyclez	Recycle !

Environment Vocabulary

Le changement climatique	climate change
La circulation	traffic
La couche d'ozone	ozone layer
Le déboisement	deforestation
L'effet de serre	the greenhouse effect
Les embouteillages	traffic jams
L'essence sans plomb	unleaded petrol
L'environnement	the environment
Le gaspillage	waste
Le gaz d'échappement	exhaust fumes
L'inondation	flood
La marée noire	oil slick
Le monde	the world
Le pétrolier	oil tanker
La pluie acide	acid rain
La pollution de l'air/de la mer/des rivières/de l'atmosphère	air/sea/river/atmospheric pollution
Les produits bios	green/bio products
Le réchauffement de la Terre	Global warming
Les ressources naturelles	natural resources
La sécheresse	drought
La terre	earth
Le trou dans la couche d'ozone	the hole in the ozone layer
L'usine	factory

Irregular conditional tense verbs 💬

* The endings are always the same and never change.
* Some stems are irregular; these are the most common ones.

Être-	Ser-
Avoir-	Aur-
Faire-	Fer-
Aller-	Ir-
Devoir-	Devr-
Pouvoir-	Pourr-
Savoir-	Saur-

Conditional Tense: 💬

"Would/could/should"

Use the stem of the future tense and add imperfect tense endings

Je recycler**ais**
Tu recycler**ais**
Il/elle/on recycler**ait**
Nous recycler**ions**
Vous recycler**iez**
Ils/elles recycler**aient**

Question Practice: 👍

BASIC : Qu'est-ce que tu recycles ? *Je recycle le papier, le plastique et les bouteilles.*

BETTER : Quel est le problème environnemental le plus grave ? *À mon avis le problème le plus grave est la pollution de l'air à cause de la circulation et des embouteillages.*

BEST : Comment faire pour résoudre les problèmes environnementaux ? *Premièrement il faut recycler plus par exemple on peut recycler les bouteilles, les cannettes et les journaux. Deuxièmement on pourrait acheter les produits recyclés ou biodégradables. En plus on peut prendre le bus, le train ou le vélo au lieu de la voiture pour aller en ville.*

MFL—French
"Inspiring Education for All"

Community   Opportunity   Enjoyment   Success

Travel and Tourism GCSE Foundation Tier French Knowledge Organiser

Key Ideas

- Pourquoi on aime partir en vacances
- Les destinations de vacances – normalement / l'année prochaine / dernière
- Les types de vacances qu'on aime
- Rester en Angleterre ou partir à l'étranger
- Les avantages et inconvénients de différents types d'hébergement / transport
- Les activités qu'on fait en vacances (opinions)
- Comment sont tes vacances de rêve ?

Key Phrases

J'aime / je n'aime pas aller en vacances parce que...	I like/dislike going on holiday because...
Je trouves les vacances relaxants / stressantes	I find holidays relaxing/stressful.
Je n'aime pas aller en vacances en famille	I don't like going on holiday with my family.
Personnellement je préfère les vacances culturelles	Personally I prefer cultural holidays.
D'habitude on reste dans un gîte	Usually we stay in a holiday home.
Dans un gîte on a plus de liberté	Staying in a holiday home gives you more freedom.

Pendant les grandes vacances...	During the summer holidays...
Il faisait chaud chaque jour	It was hot every day.
L'avantage de prendre l'avion est que c'est rapide	The advantage of taking the plane is that it's fast.
J'ai visité plusieurs sites touristiques et j'ai pris beaucoup de photos	I visited lots of tourist spots and I took lots of photos.
J'ai goûté la cuisine locale	I sampled the local cuisine.
Pour mes vacances de rêve je voudrais aller au Maroc	For my dream holiday I would like to go to Morocco.

Key Verbs

Infinitif	Présent	Passé	Futur
faire – to do	je fais/ il fait/ elle fait nous faisons/ ils font / elles font	j'ai fait/ il a fait/ elle a fait/nous avons fait/ ils ont fait/ elles ont fait	je ferai/ il fera/ elle fera nous ferons/ ils feront/ elles feront
être – to be	je suis/ il est/ elle est nous sommes/ils sont/ elles sont	j'ai été/ il a été/ elle a été nous avons été/ ils ont été/ elles ont été	je serai/ il sera/ elle sera nous serons/ ils seront / elles seront
avoir – to have	j'ai/ il a/ elle a nous avons/ ils ont/elles ont	j'ai eu/ il a eu/ elle a eu nous avons eu/ils ont eu/ elles ont eu	j'aurai/ il aura/ elle aura nous aurons/ ils auront / elles auront
aller – to go	je vais/ il va/ elle va nous allons/ ils vont / elles vont	je suis allé(e)/ il est allé/ elle est allée nous sommes allé(e)s/ ils sont allés/elles sont allées	j'irai/ il ira/ elle ira nous irons/ils iront /elles iront
prendre – to take	je prends; il/elle prend; nous prenons	j'ai pris; il/elle a pris; nous avons pris	je prendrai; il/elle prendra; nous prendrons

Key Vocabulary

Les noms

à l'étranger	abroad
l'aéroport	airport
l'avion	aeroplane
le camping	campsite
la crème solaire	suncream
un coup de soleil	sunburn
la cuisine locale	the local cusine
le gîte	holiday home
l'hôtel	hotel
le maillot de bain	swimwear
la plage	beach
le séjour	stay
le temps	the weather
les vacances (f)	holidays
la voiture	car
le voyage	journey

Les adjectifs

beau / belle	beautiful
ennuyeux / ennuyeuse	boring
fatigant(e)	tiring
intéressant(e)	interesting
lent(e)	slow
passionnant(e)	exciting
stressant(e)	stressful

Les verbes

nager	to swim
bronzer	to sunbathe
faire chaud / froid	to be hot/cold (weather)
perdre	to lose
rester	to stay
voyager	to travel

MFL—French

Key Questions

1.	**Aimes- tu aller en vacances ?**	Do you like going on holiday ?
2.	**Quels sont les avantages et inconvénients**	What are the advantages and disadvantages of:
	a) des différents types d'hébergement ? **(les hôtels / les gîtes etc.)**	different types of accommodation (hotels/ holiday homes)
	b) des différents moyens de transport ? (l'avion / la voiture)	different means of transport (plane/car)
	c) des différentes destinations ? (la ville / la campagne etc.)	different destinations (town/countryside)
3.	**Où vas-tu en vacances normalement ?**	Where do you normally go on holiday?
4.	**Préfères- tu rester en Grande-Bretagne ou aller à l'étranger ?**	Do you prefer staying in Great Britain or going abroad?
5.	**Décris-moi une journée typique.**	Describe a typical day.
6.	**Qu'est-ce que tu as fait pendant les grandes vacances l'année dernière ?**	What did you do last year during the summer holidays?
7.	**Parle-moi de tes vacances de rêve.**	Talk to me about your dream holiday.

False Friends

l'Amérique	the continents of North and South America (not just the USA)
une journée	a day
la location	the rental
rester	to stay

Useful Grammatical Structures

- Use **modifiers** to modify an adjective.
- Use **intensifiers** to intensify an adjective. Examples include: vraiment **(really)**; très **(very)**; particulièrement **(particularly)**; totalement **(totally)**; complètement **(completely)**; si **(so)**.
- Use **comparatives** to compare two or more items. Examples include: plus/moins/aussi sain que… **(more/less/as healthy as…)**
- Use **connectives and conjunctions** to make longer sentences. Examples include: parce que **(because)**; car **(as/because)**; mais **(but)**; cependant **(however)**; quand **(when)**.

- Use the **perfect tense with avoir or être** to describe past events. Examples include: je suis allé(e) **(I went)**; j'ai visité **(I visited)**; j'ai fait **(I did)**; j'ai dormi **(I slept)**; j'ai bu **(I drank)**.

Tricky Pronunciation

ennuyeux / ennuyeuse	boring
je préfère	I prefer
le gîte	holiday home
le temps	weather
le maillot de bain	swimwear
un coup de soleil	sunburn

Tricky Spellings

les vacances	holidays	Make sure that this is feminine. It is always plural.
ennuyeux / ennuyeuse	boring	Make sure that this is feminine. It is always plural.
passionnant(e)	exciting	Check the double 's', double 'n' and ending.
préféré(e)	favourite	Check the accents.

MFL—French

Communi- Opportunity *"Inspiring Education for All"* Enjoyment Success

Umwelt – Kapitel 7

1. die Umwelt – the environment
2. die Luftverschmutzung
3. der Klimawandel – climate change
4. die Erde – the earth
5. das Ozonloch – ozone hole
6. die Heizung – the heating
7. die Mülltonne – dustbin
8. der Wasserhahn – tap
9. die Ökotasche – eco bag
10. die öffentlichen Nahverkehrsmittel – public transport
11. der Fahrradweg – cycle path

umweltfreundlich – environmentally friendly
umweltfeindlich / umweltschädlich – environmentally unfriendly; umständlich - inconvenient/laborious
täglich – daily; einfach - simple

in – dative or accusative?
Accusative –movement INTO
ich werfe in die Mülltonne – I throw *into* the bin
Dative – no movement - IN
in der Mülltonne gibt es… - in the bin there is

1. Es geht uns alle an. – It concerns us all
2. Es ist mir (gar nicht) wichtig. – It is (not at all) important for me
3. Ich höre auf, Wasser/Strom zu verschwenden. – I 've stopped wasting water/ electricity
4. Ich dusche mich, anstatt ein Bad zu nehmen – I shower instead of taking a bath
5. Es ist mir (gar nicht) wichtig. – It is (not at all) important for me
6. Ich gehe oft zu Fuß, anstatt mit dem Auto zu fahren - walk instead of going on foot
7. Ich schalte den Computer aus, wenn ich fertig damit bin. – I switch the computer off when I'm finished with it
8. Ich spare Wasser, wenn ich mich dusche. – I save water when I shower
9. Ich habe mich geduscht – I showered
10. Ich habe den Müll getrennt – I separated the rubbish
11. Ich bin zu Fuß zur Schule gegangen, und ich bin nicht mit dem Auto gefahren. – I went on foot to school and I didn't go by car

infinitive	English	present	perfect	imperfect	future	conditional
verschmutzen	to pollute	ich verschmutze	ich habe…… verschmutzt	ich verschmutze	ich werde… verschmutzen	ich würde……verschmutzen
sparen	to save (water etc)	ich spare	ich habe….gespart	ich sparte	ich werde…sparen	ich würde…sparen
schaden	to damage	ich schade	ich habe….geschadet	ich schadete	ich werde…schaden	ich würde……schaden
aus/sterben	to die out	es stirbt..aus	es ist..ausgestorben	es starb…aus	es wird…aussterben	es würde……..aussterben
heizen	to heat	ich heize	ich habe … geheizt	ich heizte	ich werde….heizen	ich würde……heizen
entsorgen	to dispose of	ich entsorge	ich habe…entsorgt	ich entsorgtelltonne -	ich werde….entsorgen	ich würde………entsorgen
schützen	to protect	ich schütze	ich habe…geschützt	ich schützte	ich werde…..schützen	ich würde……schützen
weg/werfen	to throw away	ich werde…weg er wirft…weg	ich habe….weggeworfen	ich warf…weg	ich werde…….wegwerfen	ich würde……wegwerfen
wieder/verwerten	to recycle	ich verwerte…wieder	ich habe ….wiederverwertet	ich verwertete…..wieder	ich werde …wiederverwerten	ich würde ..wiederverwerten
trennen	to separate / sort	ich trenne	ich habe…getrennt	ich trennte	ich werde……trennen	ich würde…….trennen
zerstören	to destroy	ich zerstöre	ich habe……zerstört	ich zerstörte	ich werde……zerstören	ich würde……zerstören
schonen	to protect / spare	ich schone	ich habe…..geschont	ich schonte	ich werde…..schonen	ich würde……schonen

MFL—German
"Inspiring Education for All"

Commu- Opportunity Enjoyment Success

Was meine Familie und ich für die Umwelt machen

Ich denke, meine Familie ist (nicht) sehr umweltfreundlich. – I think my family is (not) very environmentally friendly

Wir versuchen, umweltfreundlich zu sein, aber es ist nicht immer einfach. – We try to be environmentally friendly but it is not always simple

Wir machen sehr viel für die Umwelt - we do a lot for the environment / *Weil das wichtig für die Zukunft ist – because it's important for the future*

Wir recyceln ganz viel – Altglas, Papier und Pappe. – we recycle quite a lot – glas, paper and cardboard.

Wir nehmen oft Öko-Taschen mit, wenn wir einkaufen. – We often take eco-friendly bags with us when we go shopping

Wir benutzen nie Plastiktüten – we never use plastic bags

Wir schalten die Lichter aus, wenn wir ein Zimmer verlassen. – we switch the lights out if we leave a room / Wir drehen die Heizung herunter. – We turn the heating down

Obwohl man öffentliche Nahverkehrsmittel benutzen sollte, fahren wir meistens mit dem Auto, weil es schneller ist. - Although you should use public transport, we mostly go by car because it's faster

Was meine Stadt für die Umwelt macht

Meine Stadt ist (ziemlich / sehr / gar nicht) umweltfreundlich - My town is (quite/very/not at all) environmentally friendly

Wir haben hier Windturbinen, die Strom schaffen – we have windturbines here, which create electricity

Es gibt eine Fußgängerzone in der Stadtmitte – there is a pedestrian zone in the town centre

Sie haben hier viele Bäume gepflanzt, was….ist – They have planted lots of trees, which is…..

Leider gibt es viel Müll auf den Straßen – unfortunately there's lots of rubbish on the streets

Wir haben viele Büsse, die alle 10 Minuten fahren. – We have buses that go every 10 minutes

Meiner Meinung nach brauchen wir mehr.. – in my opinion we need more..

Fahrradwege – cycling paths / Solarzellen auf Häuser – solar panels on houses

Wie ist die Zukunft für die Umwelt?

Wenn wir nichts für die Umwelt machen, … - if we do nothing for the environment

…wird das Klima sich drastisch ändern – the climate will drastically change

..wird es viel mehr Stürme / Dürren geben – there will be more storms / droughts

…wird das Eis am Nordpol verschwinden – the ice at the north pole will disappear   ..wird es mehr Überschwemmungen geben. – there will be more floods

..wird die Temperatur steigen – the temperature will rise   ...werden viele Tierarten aussterben – lots of species will die out

wegen der Luftverschmutzung – because of air poll   wegen Kohlendioxid von fossilen Brennstoffen – because of CO2 from fossil fuels

wegen Klimawandel – because of climate change

MFL—German

Travel and Tourism GCSE Foundation Tier German Knowledge Organiser

Key Ideas
- Die Wichtigkeit eines Urlaubs
- Die Vorteile des Urlaubs
- Ein Urlaub im Inland oder im Ausland verbringen?
- Welcher Urlaubstyp bist du?
- Was man im Urlaub macht
- Dein Traumurlaub

Key Vocabulary

Key Phrases

Man braucht die Ferien, um zu + infinitive	You need a holiday in order to...
Ich mache gern / Ich mache nicht gern Urlaub, weil...	I like/I don't like to go on holiday because...
Ich mache lieber Urlaub im Ausland/im Inland	I prefer to have a holiday abroad/at home
Ich mache nicht gern Urlaub mit meiner Familie, da...	I don't like to go on holiday with my family as...
Ein Urlaub im Ausland/im Inland bietet viele Vorteile	A foreign holiday/holiday at home has lots of advantages
Man kann neue Kulturen erfahren	You can experience new cultures
Man kann die Sprachkenntnisse verbessern	You can improve your languages
Man kann neue Leute kennenlernen	You can get to know new people
Man kann Spaß haben	You can have fun
Das Wetter im Urlaub/Die Geschichte des Landes ist mir wichtig	The weather/history of the country is important to me on holiday
Ich mache gern einen Familienurlaub/Partyurlaub/Strandurlaub/Sporturlaub/Stadturlaub	I like to go on a family/party/beach/sports/city holiday
Im Urlaub besuche ich gern die Sehenswürdigkeiten	On holiday I like to visit the sights
Im Urlaub gehe ich gern zum Strand	On holiday I like to go to the beach
Im Urlaub geniesse ich die einheimische Küche	On holiday I enjoy the local cuisine
Mein Traumurlaub wäre nach ... zu fahren	My dream holiday would be to travel to...
Letztes Jahr bin ich nach ... gefahren	Last year I went to...
Das Wetter/Die Unterkunft war...	The weather/The accommodation was...
Ich habe vor, nächstes Jahr nach ... zu fahren	I intend to go to ... next year

Die Substantive

der Ausflug	trip, excursion
der Campingplatz	campsite
das Schloß	castle
der Blick	view, glance
das Einzelzimmer	single room
die Ermäßigung	reduction
die Fahrt	journey
der Bahnsteig	platform
die Fahrradvermietung	bicycle hire
das Gepäck	luggage
die Jugendherberge	youth hostel
die Öffnungszeiten	opening hours
die Reise	journey
die Halbpension	half board
das Meer	sea
der Flug	flight
der Koffer	suitcase
der Notausgang	emergency exit
der Stadtbummel	stroll through town; window shopping

Die Adjektive

beliebt	popular
örtlich	local
sehenswert	worth seeing
seekrank	sea sick
weg	away
frei	available, free
inbegriffen	included, inclusive of
besetzt	occupied
flach	flat

Infinitiv	Präsens	Perfekt	Futur
gehen = to go	ich gehe; du gehst; er geht; sie geht; wir gehen	ich bin gegangen; du bist gegangen; er ist gegangen; sie ist gegangen; wir sind gegangen	ich werde gehen; du wirst gehen; er wird gehen; sie wird gehen; wir werden gehen
machen = to do	ich mache; du machst; er macht; sie macht; wir machen	ich habe gemacht; du hast gemacht; er hat gemacht; sie hat gemacht; wir haben gemacht	ich werde machen; du wirst machen; er wird machen; sie wird machen; wir werden machen
fahren = to travel	ich fahre; du fährst; er fährt; sie fährt; wir fahren	ich bin gefahren; du bist gefahren; er ist gefahren; sie ist gefahren; wir sind gefahren	ich werde fahre; du wirst fahren: er wird fahren; sie wird fahren; wir werden fahren
besuchen = to visit	ich besuche; du besuchst; er besucht; sie besucht; wir besuchen	ich habe besucht; du hast besucht; er hat besucht; sie hat besucht; wir haben besuchen	ich werde besuchen; du wirst besuchen; er wird besuchen; sie wird besuchen; wir werden besuchen

MFL—German

Key Questions

1.	Ist es wichtig, einen Urlaub zu machen?	Is it important to go on holiday?
2.	Was sind die Vor- und Nachteile eines Urlaubs im Ausland?	What are the pros and cons of foreign holidays?
3.	Wo verbringst du normalerweise deine Ferien?	Where do you normally spend your holidays?
4.	Welcher Urlaubstyp bist du?	What kind of holiday appeals to you?
5.	Was hast du letztes Jahr in den Sommerferien gemacht?	What did you do last year in the summer holidays?
6.	Wie bist du dorthin gefahren?	How did you travel /get there?
7.	Wohin wirst du nächstes Jahr fahren?	Where will you go next year?
8.	Beschreib dein Traumreiseziel.	Describe your dream holiday destination.

False Friends

die Pension	(small) hotel
der See	lake (die See = the sea)

Useful Grammatical Structures

In order to list activities that you can do on holiday, use **simple phrases**, e.g. **Man kann** (you can) with an infinitive at the end; **um … zu** with an infinitive at the end.

Examples include **Man kann schwimmen gehen** (You can go swimming); **Ich fahre nach Frankreich, um die Kultur zu erleben** (I go to France to experience the culture).

Vary your **future tense holiday ideas** with **Nächstes Jahr hoffe ich/habe ich vor nach … zu fahren** (Next year I hope to/intend to go to…).

Don't forget to use the **zu** + infinitive construction.

Use different subordinating conjunctions to extend your opinions on why you go on holiday. In addition to **weil** (because) you can use **da** (as), **ich denke dass** (I think that).

Use prepositional **set phrases** to describe things like weather/conditions on a past holiday. Examples include **trotz des Wetters** + verb (despite the weather) or **wegen des Wetters** + verb (on account of the weather); **während des Sommers** + verb (during the summer); **anstatt eines Hotels** (instead of a hotel); **trotz der Jahreszeit** (despite the time of year).

Tricky Pronunciation

Practise these with your teacher!	
Ich mache lieber	Don't stress the r.
die Sehenswürdigkeiten	Pay attention to the ü.
wichtig / Wetter	Pay attention to the pronunciation of w in German.

Tricky Spellings

wäre (would be)	Don't forget the ä.
letztes (last)	Not letzes!

MFL—German

Commu- | **Opportunity** | *"Inspiring Education for All"* | **Enjoyment** | **Success**

Year 10 Knowledge Organiser

JOB ROLES
Musician
Composer
Songwriter
Record producer
Conductor
Live Sound Technician
Roadie
Instrument Technician
Artistic Manager
Venue Manager
Studio Manager
Promoter
Marketer
A&R
Sound Engineer
Session Musician
Mastering Engineer
Manufacturer
Music Journalist
Blogger
Broadcaster
Software Programmer
DJ
Retailer
Distributer

EMPLOYMENT TYPES
Full Time
Part Time
Freelance
Self-Employed
Permanent
Casual

VENUES

The O2

HEALTH & SAFETY

SECURITY

ORGANISATIONS
Record Companies/
Record Label

- **Major Label**

- **Independent Labels**

Music Publishing
Self Publishing
Promotion
Companies
PR and Marketing
Hire and Transport

AGENCIES

UNIONS

TRADE BODIES

Music

| Commu- | Opportunity | *"Inspiring Education for All"* | Enjoyment | Success |

Knowledge Organiser UNIT 1 EXAM

COMPONENTS OF FITNESS

Skill Components

- **Agility**
  To change direction quickly with control
- **Balance**
  Maintain centre of gravity over base of support
- **Coordination**
  Flow of movement to perform motor task efficiently
- **Power**
  Product of Strength and Speed
- **Reaction Time**
  Respond to stimulus and initiation of response

Physical Components

- **Aerobic Endurance**
  Cardiorespiratory system working for long periods of time supplying oxygen and nutrients to working muscles.
- **Muscular Endurance**
  Muscle is able to contract over period time against a light to moderate resistance.
- **Flexibility**
  Range of motion in all joints of body, moving fluidly allowing complete range of movement.
- **Speed**
  Distance divided by the time taken
- **Muscular Strength**
  Maximum force that can be generated by a muscle or muscle group
- **Body Composition**
  Ratio of fat mass to fat free mass. Percentage of fat, bone and muscle in body.

EXERCISE INTENSITY

Heart Rate Max

- Measure heart rate by measuring beats per min.
- Max HR is calculated by 220 - Age
- Then work out 60% and 80% threshold and apply to recommended training zone for athlete.
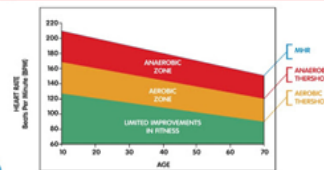
Borg Scale

- Rate of Perceived Exertion ranges from 6 - 20.
- Athletes choose a stage in which they feel they are working at, to work out HR you multiply by 10.

6	No exertion
7	
8	
9	
10	
11	Light
12	
13	Somewhat hard
14	
15	Hard (heavy)
16	
17	Very hard
18	
19	
20	Maximal exertion

PRINCIPLES OF TRAINING

- **Progressive Overload**
  Training to be demanding so improvements can be made.
- **Specificity**
  Specific to individuals sport or activity
- **Individual Needs**
  Designed to meet personal fitness and needs
- **Adaptation**
  Adapting body to training loads, increasing ability to cope
- **Reversibility**
  If training stops or intensity is not enough, training is reversed.
- **Variation**
  Vary training regime to avoid boredom and maintain enjoyment
- **Rest and Recovery**
  Allow body to recover from training and allow adaptation to occur.

- **Frequency** - How often you train
- **Intensity** - How hard you train
- **Time** - How long you train
- **Type** - Type of training method used.

PE

Knowledge Organiser — UNIT 1 EXAM

FITNESS TRAINING METHODS

FITNESS TESTING — FITNESS TESTS

Flexibility Training
- **Static** - Active and passive stretching of muscles both individually and with guidance of team mates.
- **Ballistic** - Fast movements, stretching specific to movement pattern, eg. open gates, close gates.
- **Proprioceptive Neuromuscular Facilitation (PNF)** - can be performed with a partner or resistance bands can be used. This is to gradually enhance flexibility.

- Sit and reach test

Strength, Muscular Endurance and Power Training
- **Circuit Training** - a series of different stations aimed at developing strength, endurance and power, focusing on different muscle groups.
- **Free Weights** - Barbells and dumbells to perform different types of dynamic exercises.
- **Plyometrics** - explosive power exercises such as lunging, box jumps and barrier hopping.

- Strength - Grip Dynamometer
- Power - Vertical Jump
- Muscular Endurance - 1 min press up and sit up test

Aerobic Endurance Training
- **Continuous Training** - Training at a steady pace of moderate intensity for a minimum of 30 minutes
- **Fartlek Training** - Intensity is varied by different speeds or different terrain, continuous no rest
- **Interval Training -** Individual performs work followed by rest and recovery
- **Circuit Training** - Stations are used to develop aerobic endurance.

- Multistage Fitness Test
- Forestry Step Test
- VO2 Max Test

Speed Training
- **Hollow Sprints** - Sprints separated by a hollow period of jogging or walking.
- **Acceleration Sprints** - Pace is gradually increased and different resistance drills are used with rest intervals.
- **Interval Training** - Work followed by rest or recovery.

- 35m Sprint Test
- Speed and Agility - Illinois Test
- Anaerobic Power - Vertical Jump
- Muscular Endurance - 1 min press up and sit up test

- Body Composition
- BMI
- Bioelectrical Impedance Analysis
- Skin fold test.

PE

Electricity – Foundation and Higher

Required Practical

Investigating Resistance in a Wire

Independent variable: length of the wire.

Dependent variable: resistance.

Control variables: type of metal, diameter of the wire.

Conclusion: As the length of the wire increases, the resistance of the wire also increases.

Investigating Series and Parallel Circuits with Resistors

Independent variable: circuit type (series, parallel).

Dependent variable: resistance.

Control variables: number of resistors, type of power source.

Conclusion: Adding resistors in series increases the total resistance of the circuit. In a parallel circuit, the more resistors you add, the smaller the resistance.

Investigating I-V Relationships in Circuits (Using a filament bulb, ohmic conductor, diode.)

Independent variable: potential difference/volts (V).

Dependent variable: current (A).

Control variable: number of components (e.g. 1 filament bulb, 1 resistor), type of power source.

Set up the circuits as shown below and measure the current and the potential difference.
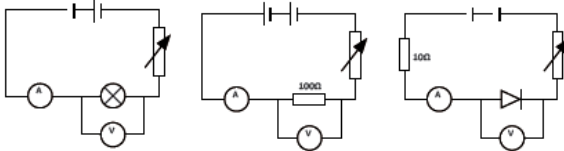
Draw graphs of the results once collected.

Equations and Maths

Equations

|	
Charge:	$Q = It$
Potential difference:	$V = IR$
Energy transferred:	$E = Pt$
Energy transferred:	$E = QV$
Power:	$P = VI$
Power:	$P = I^2R$

Maths

$1kW = 1000W$

$0.5kW = 500W$

Charge

Electric current is the flow of electric charge. It only flows when the circuit is complete.
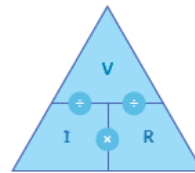
The **charge** is the current flowing past a point in a given time. Charge is measured in **coulombs (C)**.

Calculating Charge

charge flow (C) = current (A) × time (s)

$Q = It$
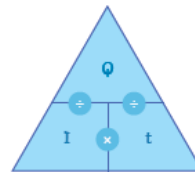
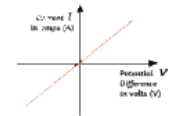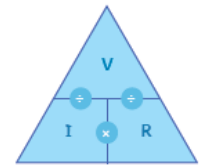potential difference = current x resistance

$V (V) = I (A) × R (\Omega)$

Resistance

voltage (V) = current (A) × resistance (Ω)

$V = IR$

Graphs of I-V Characteristics for Components in a Circuit

1. **Ohmic conductor**: the current is directly proportional to the potential difference - it is a straight line (at a constant temperature).

2. **Filament lamp**: as the current increases, so does the temperature. This makes it harder for the current to flow. The graph becomes less steep.

3. **Diode**: current only flows in one direction. The resistance is very high in the other direction which means no current can flow.

Current and Circuit Symbols

Current: the flow of electrical charge.
Potential difference (voltage): the push of electrical charge.
Resistance: slows down the flow of electricity.

cell		closed switch		fuse	
resistor		ammeter		LDR	
battery		voltmeter		LED	
variable resistor		bulb		thermistor	
open switch		diode			

Combined Science
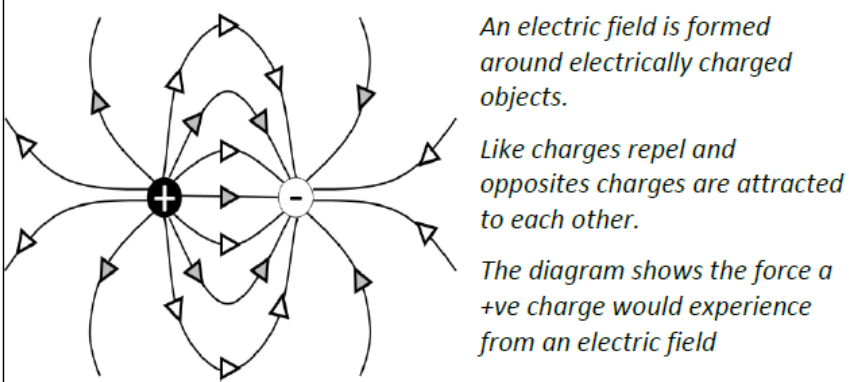
Electricity:

Static Electricity		Voltage and Potential Difference	
Static Electricity	Static Electricity is caused when by electrons are transferred from one insulator to another by friction	Voltage	Voltage is the difference in electrical potential and is measured in V.
Static Charges	If an object **gains** electrons it becomes **negatively** charged. If an object **losses** electrons it becomes **positively** charged.	Work	Voltage is the work done per unit of charge. $$E = VQ$$
Electric Fields		Measuring Voltage	The voltmeter must be connected in parallel.
Electric Charge	Things with an electric charge experience a force when placed in an electric field.	**Resistance**	
		Resistance	Measures how hard it is for electrical current to pass through a component
Electric Fields	An electric field is formed around electrically charged objects. Like charges repel and opposites charges are attracted to each other. The diagram shows the force a +ve charge would experience from an electric field	Factors Effecting Resistance	• As the cross-sectional area increases, resistance decreases. • As the length increases the resistance increases. • As the temperature increases the resistance increases. • The material of the component effects the resistance.
		Ohm's Law	$V = IR$
		Electrical Power and Energy	
		Electrical Power	$P = IV$ $P = I^2R$
Flow of Charge	In a closed circuit electric charge moves from high potential difference to low potential difference.	Electrical Energy	$E = Pt$ $E = QV$
Conventional Current'	'Conventional current' moves from high voltage to low voltage, but electrons which are –ve move from low to high voltage.	**Symbols and Units**	
Electrical Current		Q is the charge flow in coulombs, C I is the current in amps, A t is the time in seconds, s E is the energy in joules, J V is the voltage in volts, V R is the resistance in Ohms, Ω P is the power in Watts, W	
Electric Current	Electric current is the flow of electric charge $$Q = It$$		
Current in a Loop	In a single closed loop the current is the same at all points.		
Measuring Current	The ammeter must be connected in series.		

Triple Science

Circuit Symbols						Series Circuits	
Cell		Open Switch		Diode		Series Circuits	Components are connected along a single path
Battery		Closed Switch		LED		Current in Series Circuits	The current is the same at all points
						Voltage is Series Circuits	The total potential difference of the power supply is shared across all components.
Resistor		Ammeter		Lamp		Resistance in Series Circuits	$R_{total} = R_1 + R_2$

Parallel Circuits

Variable Resistor		Voltmeter		Fuse	

Parallel Circuits	Components are connected along multiple paths
Current in Parallel Circuits	The total current is the sum of the current across each component.
Voltage in Parallel Circuits	The voltage is the same at all points
Resistance in Parallel	The total resistance of two resistors is less than the resistance of the smallest resistor.

LDR		Thermistor	

As the light level increases the resistance decreases.

As the temperature increases the resistance decreases.

National Grid

Function	The National Grid supplies electricity from power stations to customers at high voltages to reduce energy loss.
DC	Electricity flows in a single direction i.e. from batteries.
AC	The current alternates and regularly changes direction i.e. Mains electricity.
Mains	Mains electricity is the electricity supplied by the National Grid. It is an AC supply with a frequency of 50Hz and is 230V.

Current Voltage Graphs

Ohmic Conductor	Lamp	Diode

Transformers – *Higher Only*

Construction	Transformers consist of a primary coil and a secondary coil wound on an iron core.
Step Up Transformers	These have more coils on the secondary coil and increase the voltage of a AC supply
Step Down Transformers	These have more coils on the primary coil and decrease the voltage of a AC supply

Triple Science

Communi-   Opportunity   *"Inspiring Education for All"*   Enjoyment   Success

Waves Knowledge Organiser – GCSE PHYSICS
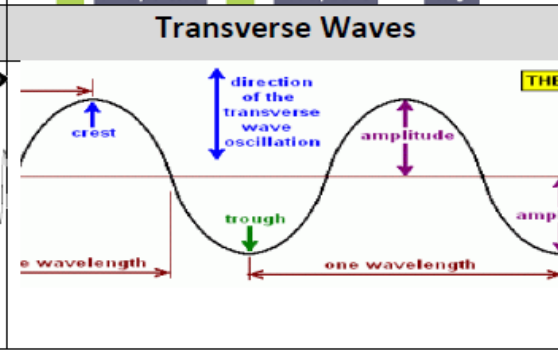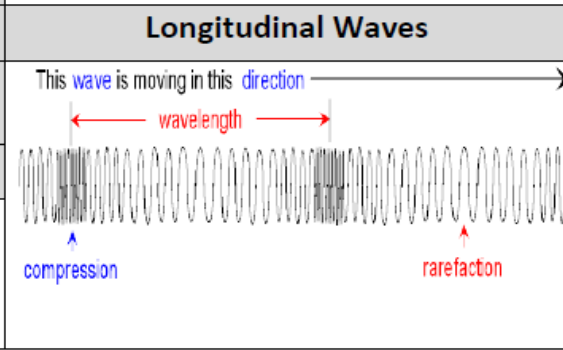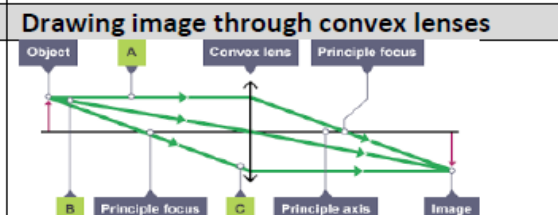
Wave	Any disturbance that transmits energy through matter or space.
Medium	A solid, liquid or gas that is vibrated
Transverse Wave	The **oscillations** are perpendicular to the direction of energy transfer.
Longitudinal Wave	The **oscillations** are parallel to the direction of energy transfer.
Wavelength	The distance between any adjacent crests or **compressions** in a series of waves.
Frequency	The number of waves produced in a given amount of time.
Wave Speed	wave speed (metre per second) = frequency (hertz) × wavelength (metre)
Diffraction	The bending of waves around a barrier or through an opening.
reflection	obeys the law of reflection: the angle of incidence equals the angle of reflection. The normal is a line drawn at right angles
Refraction	Waves pass through a different medium and change direction
Decibel (dB)	The most common unit used to express loudness.
Vacuum	space entirely devoid of matter.
Frequency	Number of oscillations per second (Hz)
Time Period	one complete cycle of vibration to pass a given point
Oscillation	A motion that repeats itself – IE vibrations
Ultrasound	Frequencies above about 20kHz (20,000Hz).
Sonar	Ultrasound pulse is emitted and timed how long it takes to be returned.
Seismic Waves	Produced by earthquakes. P waves are longitudinal and S waves are transverse (can not travel through a liquid)

The Electromagnetic Spectrum

Concave and Convex Mirrors

Reflection, Refraction and Diffraction
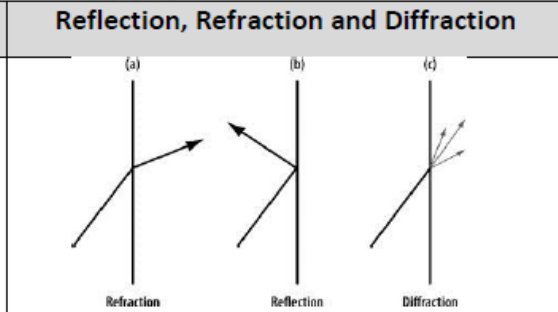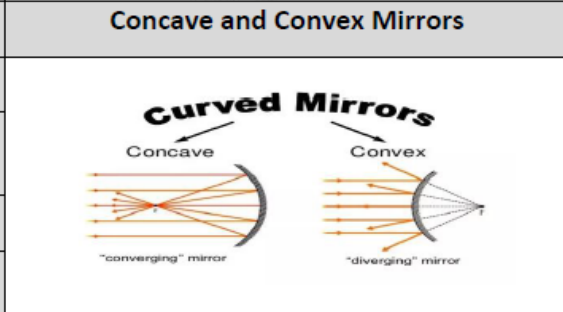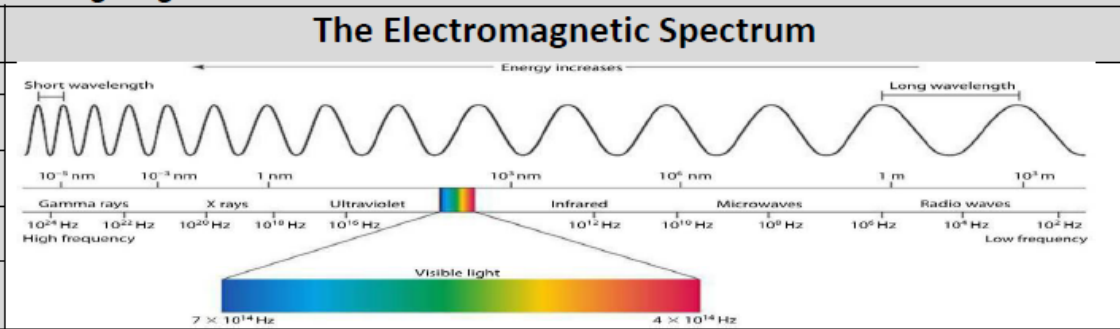
Equations

$$\text{Frequency} = \frac{1}{\text{Periodic time}} \quad \text{or} \quad f = \frac{1}{T} \ \text{Hz}$$

$$\text{Periodic time} = \frac{1}{\text{Frequency}} \quad \text{or} \quad T = \frac{1}{f} \ \text{sec}$$

Drawing image through convex lenses

Longitudinal Waves

Transverse Waves

The Wave Equation

$$V \ = \ f \ \times \ \lambda$$

WAVE SPEED = FREQUENCY X WAVELENGTH
(m/s)   (Hz)   (m)

Triple Science