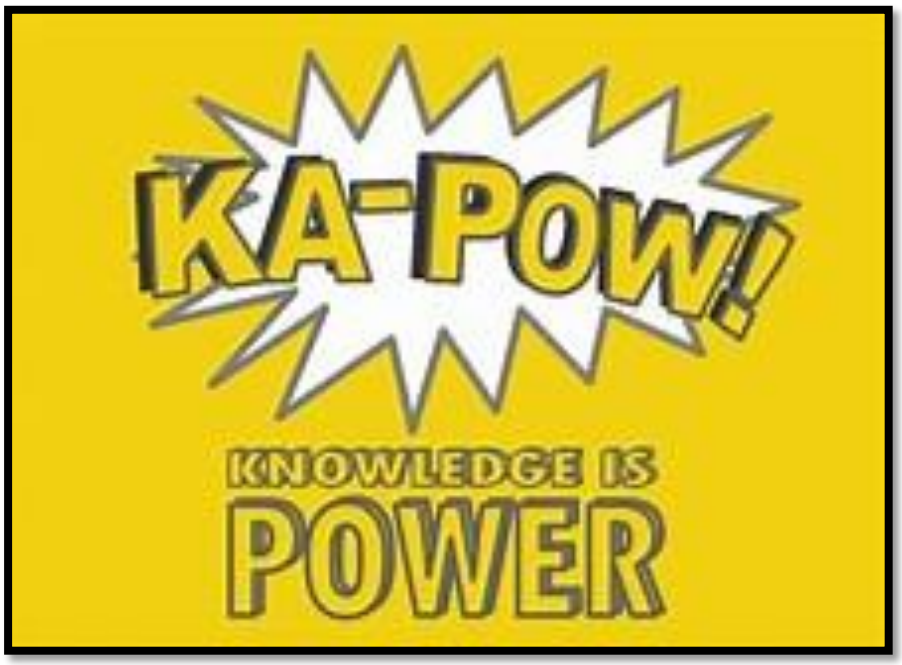
Year 8

Knowledge Organiser Booklet

Half Term 6



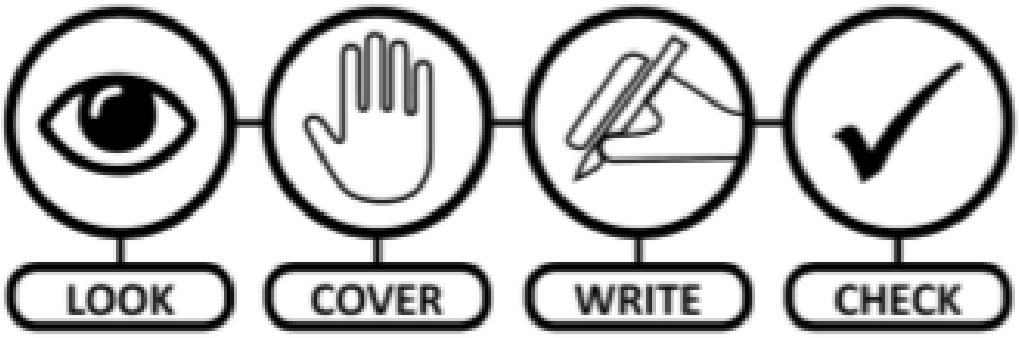
Name

Self-Quizzing Book

Knowledge organisers contain **critical** knowledge you must know. They will help **you remember more** and learn complex information and concepts. Using knowledge organisers will make you more successful in your subjects.

You need to bring your knowledge organiser booklet and self-quizzing book with you **every day**.

For homework you will be asked to self-quiz using your knowledge organisers. You will do this in this book using look, cover, write, check.



Look: Spend a small amount of time reading a section of the knowledge organiser and trying to memorise the content.

Cover: Cover up that section of your knowledge organiser.

Write: In your self-quizzing book, write out the information you have tried to memorise from the knowledge organiser.

Check: Uncover the section of your knowledge organiser and check every word, including spellings. Make any corrections using a **green pen**. If it is all correct, tick what has been written.

Repeat this process until **one whole page** of your self-quizzing book is full, with **no whole lines left empty**.

Respect **Resilience** **Responsibility**

Expectations

You should be proud of the work you produce and how hard you have worked.

There should be no wasted space on each page.

No whole lines should be left empty.

Corrections should be made in a **green pen**.

Example

Subject, underlined

Date in full, underlined

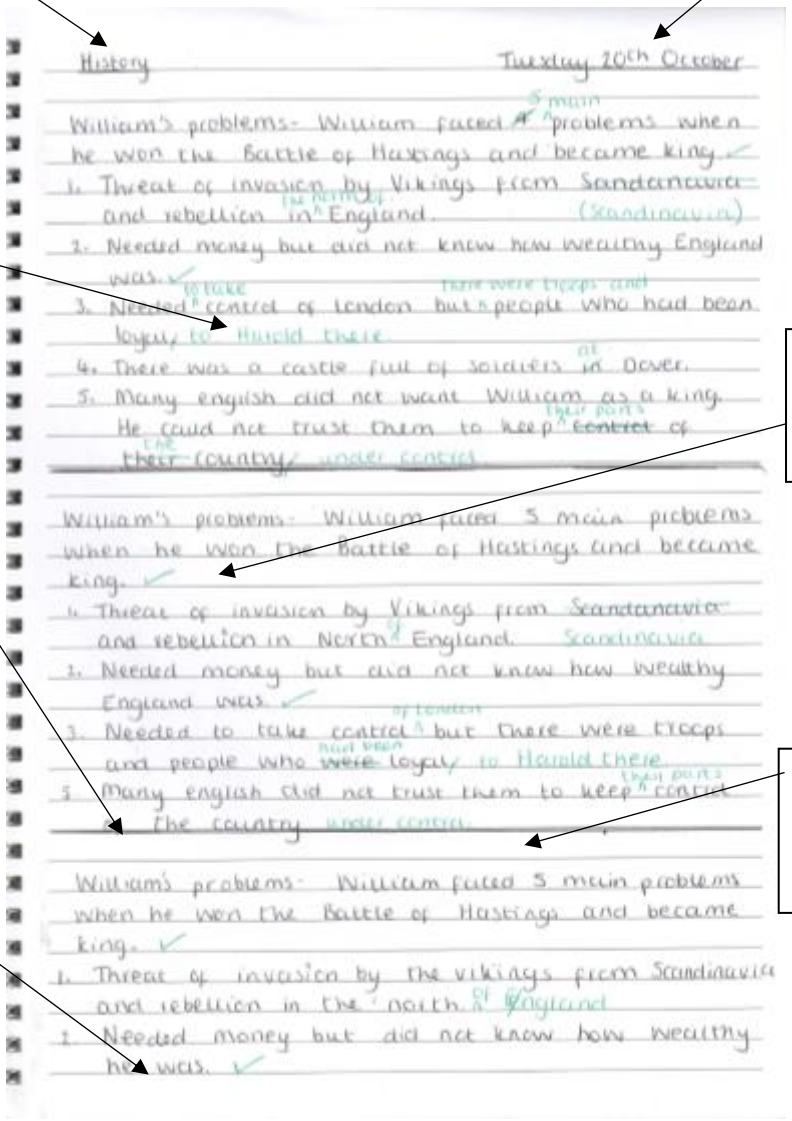
Corrections made in green pen.

Each line checked and ticked if correct.

Solid black line after each attempt

No whole lines left empty except between repeats.

Repeat until the whole page is full



History — Tuesday 20th October

William's problems- William faced 5 main problems when he won the Battle of Hastings and became king.
1. Threat of invasion by Vikings from Scandinavia and rebellion in the North of England.
2. Needed money but did not know how wealthy England was.
3. Needed to take control of London but there were troops and people who had been loyal to Harold there.
4. There was a castle full of soldiers at Dover.
5. Many english did not want William as a king. He could not trust them to keep their ~~control~~ of the county under control.

William's problems- William faced 5 main problems when he won the Battle of Hastings and became king.
1. Threat of invasion by Vikings from Scandinavia and rebellion in North of England.
2. Needed money but did not know how wealthy England was.
3. Needed to take control of London but there were troops and people who ~~were~~ had been loyal to Harold there.
5. Many english did not trust them to keep their control of the county under control.

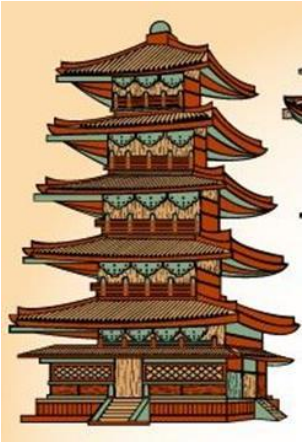
William's problems- William faced 5 main problems when he won the Battle of Hastings and became king.
1. Threat of invasion by the vikings from Scandinavia and rebellion in the north of England.
2. Needed money but did not know how wealthy he was.

Respect **Resilience** **Responsibility**

Year 8
Knowledge Organiser

The Japanese flag features a red disc, that represents the sun, a traditional symbol of **Japan**. The disc is called Hinomaru, **meaning** the “circle of the sun.” The colour **white** is for purity and honesty.

Japanese writing contains symbols and these characters are written in columns going from top to bottom, with columns ordered from right to left. Japanese books are reversed and read from back to front.



The pagoda was a multi story building made from wood. These were often used for religious purposes.

Oni (demon)masks were worn in traditional Japanese festivals

Men-yoroi were the armoured masks worn by warriors and samurai. They were decorative and customizable according to the wearer’s preference and fit.

Anime is a form of cartoon/comic style art that became popular in the 1960’s. It has a distinctive style, often shown through outlines and block colour.

ART OF JAPAN

Ryujin (aka Ryu-o) is the dragon king, sea god, and master of serpents in Japanese mythology.

Yayoi Kusama is a modern artist from Japan. She focuses on who fashion, sculpture and installation pieces. She was very important in raising the profile of female artists against the male dominated pop art scene in New York. Her work often features bright patterns colours and dots.

Japan is an island surrounded by sea, one its most famous dishes is Sushi – raw fish.

Japanese priests brought tea back from China in the 8th Century.
In **Japan**, **tea** is more than just a hot drink. It is a very important ritual that has a lot of meaning within the culture. The **tea** ceremony represents purity, tranquillity, respect and harmony and a lot of preparation goes into this important event.

Japanese art mastered the feeling of distance by creating different layers of saturation in their work. They also used mark making and perspective.

The Kimono is a type of unisex clothing. It was made from a large piece of patterned silk material. Colours were based on seasons/ house. These were passed down from generation to generation.

The Great Wave off Kanagawa is one the most famous pieces of art in the world. It symbolises the power of the sea, including hurricanes and tsunamis. It was created by carving a block of wood into a wave pattern and printing it on paper. (Wood block print). Artist = Hokusai

Don’t leave home without your fan! Highly decorated fans showed how important you were. If you forgot it, it caused offence to others! This was a way of showing how rich/important you were in society. They often featured patterned animals/scenes

PAPER & CARD

Functions of Packaging

Protect- Make sure product is safe, undamaged and unopened

Inform- Information about the product: Calorie Content, Barcode, Ingredients, Recycling Info, Allergy Advice, Contact

Contain- To keep product in, prevent leakages, be shaped to fit **Transport-** Should be easy to transport (in bulk), must remain intact

Preserve- Make sure temperature and freshness is maintained over time

Display- Advertise product to make it look good. Window to see product (made of acetate)

Types of Paper and Card

- **Cardboard**- is thicker than paper as it is made up of a number of layers, glue or laminated together. The diagram opposite shows a net / development of a package. It can be folded to produce a carton.
- **Tracing paper-** Is used pupils, students and designers. It allows the designer to copy an existing drawing / shape. Tracing paper can be useful when there is a need to produce several drawings that are based on the same outline. Also, tracing paper makes it possible to place one design on top of another to produce a second layer. The original design can be seen under the second drawing.
- **Cartridge paper-** is used for general drawing. It is often good quality and generally 100 to 135g in thickness. This paper is used for design and technology projects and will take colour from pencils and felt pens without too much leaking to the opposite side of the paper.

- **Solid white board-** This is normally top quality cardboard made from quality bleached wood pulp. It is the best card for printing on to and consequently it is used for hard backed book and more expensive items.
- **Foil lined board-** is good quality cardboard with a aluminium foil lining. This type of container is ideal for ready made meals or take away meals. The foil retains the heat and helps keep the food warm.
- **Corrugated card-** This type of board is often used for packaging large electrical items. These large boxes (often brown in colour) protect the contents from damage. Corrugated board is strong because it is composed of a top and bottom layer and in between there is a triangulated section. A triangular section is very strong compared to its weight.
- **Duplex board-** This is used for containers and can contain liquids as it may have a water-proof liner on the inside. It can have a wax feel. This type of card is used by the food industry and

How To Make Paper:

1. A tree is cut down and the trunk is fed into a chipping machine where it is cut into very small pieces.
2. The wood chips are boiled in water to form a thick wood pulp
3. Chemicals / ingredients such as starch and bonding agents are added.
4. The pulp is poured over a fine mesh and the water escapes leaving the cellulose fibres behind. This forms the paper.

Key Material Properties and Definitions

Natural: Textile producedvia plants and or animals

Synthetic: Textile that is manufactured (man-made)

Regenerated: Textile created by breaking down and re-forming old textile materials/materials

Sources and origins

The **raw materials** needed to create textiles come from all over the world. They can be natural, grown from plants or taken from animals, or synthetic, **refined** from oil.

Natural fibres

Plant based

•**cotton** - harvested from cotton plants from China, USA and Pakistan, the fibres are cleaned, **carded** between wire brushes to lie in the same direction and spun into yarn

•**bamboo** - grown in China and Japan and is **pulped** and crushed, softened and carded before being spun into yarn

•**linen** - made from the flax plant grown in Canada, France and Russia, and processed in the same way as bamboo

Animal based

•**wool** - fleeces are sheared from animals such as sheep, alpaca and goats in UK, Australia and New Zealand; the short, **staple fibres** are cleaned, carded and spun into a yarn

•**silk** - silk moth cocoons are harvested in China and India, heated to undo the filament bonds and then spun into a filament fibre

Silk moth on cocoon

Synthetic fibres

Oil based

•**polyester** - polymer chains are extracted from oil and are then forced through a small hole into a filament fibre

•**acrylic** - polymer chains of **acrylonitrile** (a **thermoforming** polymer) are extracted from oil into a filament fibre

Regenerated

•**viscose** - wood pulp from Canada or European forests is dissolved by chemicals to extract the cellulose, which is then **extruded** through a spinneret to make a fine filament fibre

•**acetate** - wood pulp from Canada or European forests is dissolved by acetic acid and then extruded through a spinneret to make a filament fibre

Natural fibres

Natural fibres are all derived from vegetation, cellulose-based materials, as well as products that are made from animals.

Natural fibre	Properties	Use
Cotton	Cool, cheap, strong, renewable	Denim jeans, shirts, lightweight clothing
Bamboo	Cheap, renewable, soft, absorbent, comfortable	Knitwear, socks
Linen	Renewable, strong, creases easily	Lightweight clothing
Wool	Soft, hardwearing, renewable	Knitwear, carpets
Silk	Expensive, renewable, drapes (hangs) well, good insulation properties (cool in summer, warm in winter)	Wedding dresses, ball gowns

Synthetic fibres

Synthetic fibres are not plant or animal based; they are made from polymers that are derived from **petrochemicals**.

Synthetic fibre	Properties	Use
Polyester	Cheap, durable, non-renewable	Shirts, school uniform
Acrylic	Warm and soft, non-renewable	Bedding, clothing
Viscose	Cheap, lightweight, versatile, non-renewable	Clothing, underwear
Acetate	Resistant to degradation, cheap, no elasticity, non-renewable	Shiny, reflective clothing and curtains

Blended fabrics

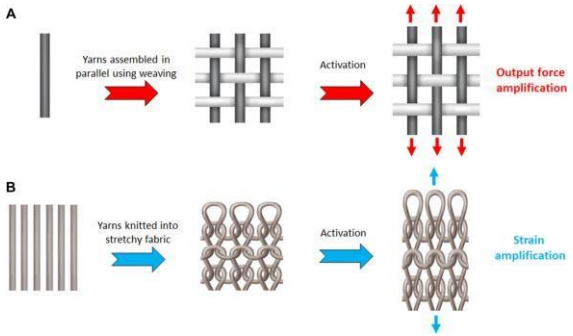
Fabrics can be blended to improve their properties.

Blended fabric	Properties	Use
Polycotton	Cheap blend of polyester and cotton, crease resistant	Shirts, bedding
Elastane	Stretchy, retains shape well, cheap	Sportswear, leggings
Kevlar	Five times stronger than steel, uses chemical bonds and weave patterns for strength	Bullet-proof vests, car tyres
Nomex	Heat resistant and lightweight	Firefighters' outfits
Sympatex	Breathable and waterproof	Sportswear and outdoor equipment

Stock forms

Textiles are sold as different **stock forms**, depending on the standard sizes and thicknesses:

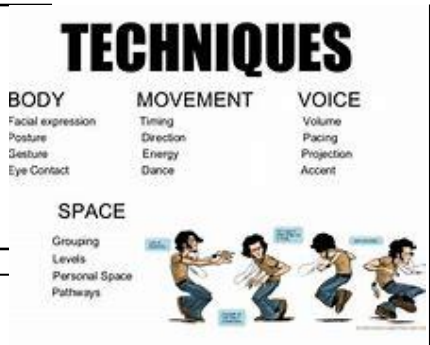
- **rolls and bolts** - fabric is sold by the metre in the roll (circular) or bolt (flat roll) and standard sizes are 90 cm, 137 cm and 154 cm
- **denier** - the unit of weight that measures fineness, used to describe the thickness of tights, where 30 denier is thin and 100 is thick, increasing commonly in increments of 10
- **ply** - yarn (wool) is sold in coils, reels or balls, and ply is the number of threads spun together to create a yarn



Drama

Survivors

Year 8 – Term 3



Thought-Tracking

- A thought-track is when a character steps out of a scene to address the audience about how they're feeling.
- Sharing thoughts in this way provides deeper insight into the character for an audience.
- In rehearsal it's an effective way of exploring characters and scenes in greater depth. Stopping the action and sharing thoughts enables the actor to fully understand how their character thinks or feels at any given moment.
- Sometimes the character might feel something different to the words they're speaking. This is called **subtext** and thought-tracking is a useful way of exploring it to realise the many layers within a scene.

Cross Cutting

- Cross-cutting is a device to move between two or more scenes staged in the space at the same time.
- It's important that the audience know which part of the action they should follow so one part of the action remains in still image while another scene is played out, directing the audience's focus.
- Using this technique you can move backwards and forwards between separate locations and time frames.
- Cross-cutting is an excellent way to explore the contrast between situations by making differences clear for the audience. It can also be used to give them additional information.

Mannerisms

- We all have habits that are particular to us. We might fiddle with our hair or shift our weight from one foot to the other.
- It's important that you're able to remove any habits of your own that might interfere with characterisation.
- Create a state of physical neutrality from which to build and develop your character.

Marking the moment

This is a way of highlighting the most important moment in a scene in order to draw the audience's attention to its significance. There are various ways of marking the moment:

- A **still image** might be used. Freezing the action at a particular moment fixes it in the minds of the audience and ensures its significance is not lost.
- The **key moment** may be repeated or played 'on a loop'.
- **Slow motion** could be used to highlight a key moment, so that it is not lost on an audience.
- **Narration** or a **thought-track** could be added as a commentary on what has just occurred.
- **Lighting** and **sound**. A spotlight can be used to direct the audience's focus towards the key moment and a sound effect can also draw attention to it.
- Marking the moment is useful in rehearsal as it helps actors consider the most important moments.

Non-verbal communication

This is what you say without using words or speech. We can learn a lot about a person from the way they stand, move and use facial expressions. A famous study by Professor Mehrabian the 1960's examined how we communicate. He concluded that a staggering 55% of communication is through body language, 38% is by our tone of voice, and only 7% of what we communicate is through the actual words spoken.

Still image

- This is a frozen picture which communicates meaning. It's sometimes called a **freeze frame** or tableau. It can be used to mark a key moment in the performance.
- It can provide insight into character relationships with a clear focus upon use of space, levels, body language and facial expression.
- Still images can be naturalistic, a photograph of an important moment or abstract, more representational of feelings or an event.
- You could use still images to create a photo album as an insight into a character's past life and relationships. It is also a useful way to storyboard early devised work.

Year 8 English – Knowledge Organiser – Much Ado About Nothing

Dramatic Devices in Much Ado About Nothing	
Dramatic Irony	The audience is aware of Don John's numerous deceptions, but the characters are not initially aware.
Soliloquy	They say the lady is fair – tis a truth. Benedick considers his love for Beatrice in Act II, Scene III.
Aside	Adding to the themes of confusion and deception, there are asides throughout, as characters speak to a selected audience.
Rhyming Couplets	The god of love, That sits above. Benedick sings of his love for Beatrice

Features of a Comedy

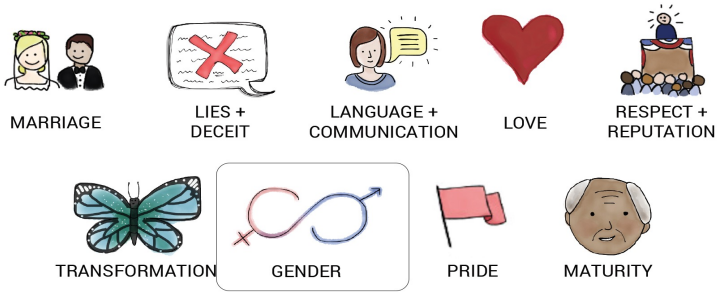
Playful language – puns, quips and vibrant figurative language are written into the text to demonstrate wit.

Misunderstanding/ Confusion/ Deception – Humour is derived from characters' shrouded perceptions of reality.

Underlying Critique – Shakespeare ridicules some of the issues in society, e.g. systems of class, love and honour.

Happy Ending – Normally involving a marriage

Themes in Much Ado



Character	Background
Beatrice	**Leonato's niece and Hero's cousin. Beatrice is "a pleasant-spirited lady" with a very sharp tongue. She is generous and loving, but, like Benedick, continually mocks other people with elaborately tooled jokes and puns. She wages a war of wits against Benedick and often wins the battles. At the outset of the play, she appears content never to marry.**
Benedick	**An aristocratic soldier who has recently been fighting under Don Pedro, and a friend of Don Pedro and Claudio. Benedick is very witty, always making jokes and puns. He carries on a "merry war" of wits with Beatrice, but at the beginning of the play he swears he will never fall in love or marry.**
Claudio	**A young soldier who has won great acclaim fighting under Don Pedro during the recent wars. Claudio falls in love with Hero upon his return to Messina. His unfortunately suspicious nature makes him quick to believe evil rumours and hasty to despair and take revenge.**
Hero	**The beautiful young daughter of Leonato and the cousin of Beatrice. Hero is lovely, gentle, and kind. She falls in love with Claudio when he falls for her, but when Don John slanders her and Claudio rashly takes revenge, she suffers terribly.**
Don Pedro	**An important nobleman from Aragon, sometimes referred to as "Prince." Don Pedro is a long-time friend of Leonato, Hero's father, and is also close to the soldiers who have been fighting under him—the younger Benedick and the very young Claudio. Don Pedro is generous, courteous, intelligent, and loving to his friends, but he is also quick to believe evil of others and hasty to take revenge. He is the most politically and socially powerful character in the play.**
Leonato	**A respected, well-to-do, elderly noble at whose home, in Messina, Italy, the action is set. Leonato is the father of Hero and the uncle of Beatrice. As governor of Messina, he is second in social power only to Don Pedro.**
Don John	**The illegitimate brother of Don Pedro; sometimes called "the Bastard." Don John is melancholy and sullen by nature, and he creates a dark scheme to ruin the happiness of Hero and Claudio. He is the villain of the play; his evil actions are motivated by his envy of his brother's social authority.**

Year 8 English – Knowledge Organiser – Much Ado About Nothing

Takeaway Menu	Chili Rating	Research appetisers	Peri-peri presentations	Fino sides	Specials	Assessment Platters to share	Desserts
	**Extra hot**	Explain why Shakespeare wrote 'Much Ado About Nothing.' The word 'Nothing' would have been pronounced Noting in Shakespeare's time. What clues does this give to the question above?	Imagine you are an Elizabethan male or female. Create a speech/video blog explaining your views on honour and shame.	Write a suitable epitaph for Hero, which tells her story in verse.	Create a screenplay version of a scene from the play.	Re-write the wedding scene so that Hero can argue her case that her 'honour' is intact.	Design a board game based upon the play, its themes , events and ideas.
	Hot	Research the themes of Honour, Shame and Court politics. How do these themes compare/contrast between Elizabethan and contemporary ideas?	Produce a storybook that re-tells the story of the play in a different setting e.g. the modern day. Use quotations from the play & translate to your own words.	Create a masque for a chosen character showing the different aspects of the character. Decorate the mask as you wish, but include as many words or lines from anywhere in the play as possible which tell others about the character.	Create a film set for your own production of Much Ado about Nothing. Select your cast, soundtrack and costume design.	Write an article as a reporter covering the wedding of Hero and Claudio – or the trial of Don John and Borachio. Write as a broadsheet, or tabloid journalist, making the events as factual or sensational as you wish.	Create a set of 'Top Trump' cards for each of the characters in the play.
	Medium	Research Shakespeare's Comedies. What are the characteristics and style of these plays. Can you identify any of these in 'Much Ado About Nothing?'	Summarise the play in the form of a comic strip using words, ideas and themes from the play.	Write a review of the play and then compare your experience to a review of a performance (This can be a film or stage version) You may choose to watch a film version before you write your review.	Shakespeare highlights the issues of Honour and Shame. Choose a social issue which concerns you. How would you change the play to highlight this problem or issue?	Write a monologue as either Benedick or Beatrice to explain to the audience why you always argue and have a battle of wits with each other.	Create a Hero rap or song based upon the events, themes and ideas from the play.
	Mild	Research 16th Century Italy. You should include the art, literature and information about Messina where the play is set.	Create a model that represents one of the characters from the play. Write notes or an explanation of why your created you model this way.	Explore how the play challenges gender stereotypes. You can choose how you present this.	Do you think the play is effective for a modern audience? Explain your reasons linked to the play.	Write a confession as the character Don John. Explain why you wanted to make trouble for the others in the group.	Create a wedding invitation for either Hero or Beatrice's wedding.
Each week you must choose one take away item for homework. The chili rating suggests the difficulty of the task, or the challenge it might offer. You cannot choose all the same strength of task every week. Try at least one **'Extra Hot'** task during the half term!	**Extra Mild**	Research 3 of the main characters in the play. What sort of people are they? What is the relationship between them? What do you think each is thinking and feeling?	Research the laws relating to women and societies attitudes to them. What was life like for women compared to today? See http://www.elizabethi.org/contents/women	Write a speech as your favourite character, trying to persuade another character of something.	Create a new character to be included in the story. Explain why they are important and what is their influence on the play.	Write Hero's diary across two days. Day One – the day before the wedding. Day Two – the day after the wedding . Explain how Hero is feeling on both occasions.	Create a 5 to 10 question quiz based upon the events, themes and ideas from the play.

Spanish Knowledge Organiser
Year 8 - Summer 2

Week 1&2

Connectives

- **pero** - but
- **y** - and
- **sin embargo** - however
- **sobre todo** - especially
- **tambien** - also

Qualifiers

- **muy** - very
- **un poco** - a little
- **bastante** - quite
- **demasiado** - too

This year you have been learning sentences which use the 10 keys. For this last half term we would like to remind you of some of those key words that we want to see you continuing to use next year.

Week 3&4

Opinions

- **Me gusta** - I like
- **Me gusta mucho** - I really like
- **Me encanta** - I love
- **No me gusta** - I don't like
- **Odio** - I hate

Comparatives

- **más + adjective + que** - more + adjective + than
- **menos + adjective + que** - less + adjective + than

Week 5&6

Time phrases

- **El fin de semana pasado** - last weekend
- **El fin de semana próximo** - Next weekend
- **Todos los fines de semana** - every weekend
- **A veces** - sometimes

Tenses

- **Voy a + infinitive** - I am going to
- **Vamos a + infinitive** - We are going to
- **Fui** - I went
- **Comí** - I ate
- **Jugué** - I played
- **Fue** - it was

French Knowledge Organiser
Year 8 -Summer 2

Week 1&2

Connectives

- **mais** - but
- **car** - becuase
- **cependent** - however
- **surtout** - especially
- **aussi** - also

Qualifiers

- **très** - very
- **un peu** - a little
- **assez** - quite
- **vraiment** - very
- **trop** - too

This year you have been learning sentences which use the 10 keys. For this last half term we would like to remind you of some of those key words that we want to see you continuing to use next year.

Week 3&4

Opinions

- **J'aime** - I like
- **J'aime beaucoup** - I really like
- **J'adore** - I love
- **Je n'aime pas** - I don't like
- **Je déteste** - I hate

Comparatives

- **plus + adjective + que** - more +adjective + than
- **moins + adjective + que** - less + adjective + than

Week 5&6

Time phrases

- **Le week-end dernier** - last weekend
- **le week-end prochain** - next weekend
- **tous les week-ends** - every weekend
- **parfois** - sometimes

Tenses

- **Je suis allé** - I went
- **J'ai mangé** - I ate
- **Je vais + infinitive** - I am going to

Modal verbs

- **je veux** - I want
- **je dois** - I must
- **je peux** - I can

Year 8 Food Knowledge Organiser: Principals of Nutrition

Watch the video to learn more
https://www.bbc.com/bitesize/clips/zxqjg82

Fat

Function:
Energy
Warmth
Protection of organs

Sources

Saturated Fat	Unsaturated Fat
(Bad Fats)	*(Good Fats)*
Meat	Avocado
Processed Foods	Nuts
Lard	Olive oil

Saturated Fats - solid at room temperature and are from animal sources. Unsaturated fats are liquid at room temperature and are vegetable sources..

Too much	Too little
• Obesity • Type 2 diabetes • Heart Disease	• Fat soluble vitamin deficiencies

Macronutrients

Needed in **large amounts** to help the body to function properly

Protein

Function:
owth and Rep
Energy

Sources:

Plant	Animal
Nuts	Eggs
Quorn	Fish
Beans	Meat
Lentils	

Too much	Too little
• Turns to fat if not turned into energy	• Anaemia • Slow growth in children

Carbohydrates

Function:
Energy

Starches:
Bread
Pasta
Rice
drinks
Wheat
Potatoes
Cereals

Sugars:
Cakes
Sweets
Fizzy

We should consume no more than 30g of sugar per day

Too much	Too Much
• Obesity • Type 2 diabetes • Heart Disease	• Tooth decay • Type two diabetes • Obesity

The 5 main groups

The Eatwell Guide divides the foods and drinks we consume into 5 main groups:

1. **fruit and vegetables**
2. **potatoes, bread, rice, pasta and other starchy carbohydrates**
3. **beans, pulses, fish, eggs, meat and other proteins**
4. **dairy and alternatives**
5. **oils and spreads**

You should try to choose a variety of foods from each group to help you get the nutrients you need to stay healthy.

Using the Eatwell Guide

You can use this guide to help you make healthier choices when:

- planning what to eat
- cooking or preparing a meal at home
- food shopping
- eating out or on the go

Most of the meals we eat are a combination of food groups. When planning meals, work out the main ingredients and think about how these fit within the 5 main food groups.

Micronutrients

Needed in **small amounts** to help the body to function properly

Watch the video to learn more
https://www.youtube.com/watch?v=ISZLTJH5lYg

Vitamin	Sources	Functions	Deficiency diseases
Vitamin A (fat soluble)	Fish, eggs, oranges	Helps with Eye sight and skin. It is also an antioxidant which protect the cells from harmful substance.	**Night Blindness**
Vitamin D (fat soluble)	Eggs, the sun	Helps our bones to grow. Aids the absorption of Calcium and prevents **RICKETS**	**Rickets in children** **Osteoporosis in women**
Vitamin C (Water soluble)	Oranges, tomatoes, vegetables	Helps to heal cuts, helps the immune system which prevents **scurvy**. Aids the absorption of Iron and prevents ANAEMIA	**Scurvy and Anaemia**
B Vitamins (Water soluble)	Cereals, meat, fish	Creates enzymes that break down food allowing absorption of Carbohydrate, Fats and Protein into our blood.	**Beri Beri – lack of B1 - Thiamin** **Pellagra - lack of B3 - Niacin**

Year 8 Food Knowledge Organiser: Function of ingredients

Gelatinisation

Definition
A sauce is a thickened, flavoured liquid which can be added to a range of savoury and sweet dishes.
There are several types of sauces based on different ways of thickening mixtures.

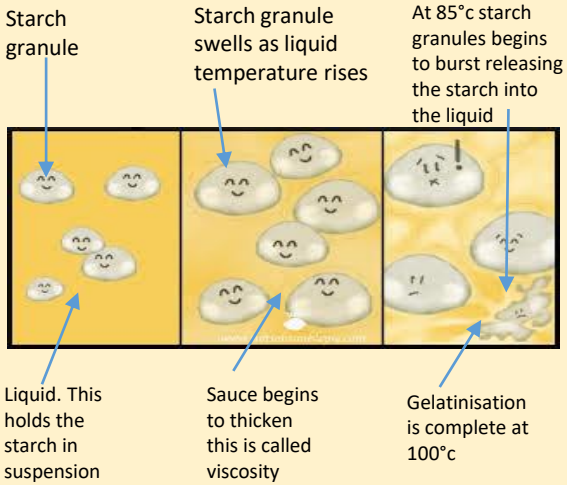
The main functions of sauces are:
- To add liquid to moisten a food or dish.
- To add flavour.
- **To add colour.**
- **To bind ingredients together.**
- To add nutrients.

To make dishes more interesting and appealing.
A wide variety of different sauces can be used to produce dishes using a vast range of skills, to develop differing flavours and textures. These can include a **coating**, **accompaniment** or **part of a meal**.

Starch grains are mixed into a liquid. The starch grains do not dissolve they are suspended in the liquid. This is called a **suspension.** When the starch grains are put in a liquid and then heated, the starch grains will start to absorb the liquid. They will swell and get bigger this will start at **60C**. This makes the sauce start to thicken, because there is less room for the swollen grains to move around. Stirring helps to keep the starch grains suspended

Watch Video on Gelatinisation :
https://www.youtube.com/watch?v=zjyhMzjDaVI

If the liquid is not stirred, the starch grains will join together and form lumps.
At 85**C** the starch grains are so swollen that they start to burst and release starch molecules into the surrounding liquid. At boiling point **100C** the sauce completely thickens.
The whole process is known as **gelatinisation.**



Factors that affect gelatinisation
1. Type of Starch (Wheat Flour/Cornflour)
2. Quantity of starch
3. Amount of liquid
4. Temperature
5. Stirring

Bread

Ingredient	Role
Strong Flour	Strong flour is high in GLUTEN (protein) that makes the dough stretchy and elastic.
Liquid	Hydrates the Yeast allowing the it to produce Carbon Dioxide (CO_2). Bind dry ingredients.
Yeast	Biological raising agent produces Carbon Dioxide. Yeast requires 4 Factors for Growth; Food, Time, Temperature, Moisture.
Salt	Adds Flavour.

Cakes

Cake making methods
- **Rubbing in – Scones**
- **Creaming – Traditional and all in one – Muffins**
- **Melting – Ginger Bread**
- **Whisking – Swiss roll.**

The main ingredients in cake making are fat, sugar, flour and eggs. All methods use a raising agent and often a liquid such as milk.

Function of ingredients:

Ingredient	Function
Flour	1. Forms structure of the cake. 2. As the cake is heated, protein (gluten) in the flour sets the framework and shape. **3. DEXTRINSATION** occurs, starch converts into sugar when exposed to dry heat. This sugar then **CARAMELISES** on the surface.
Sugar	1. Sweetens and adds flavour. 2. When creamed with fat, helps to hold air in the mixture. **3. CARAMELISATION** gives colour.
Fat	1. Adds colour and flavour 2. Holds air bubbles (foam) which creates texture and volume. 3. Produces a short crumb or rich even texture dependent on the ratio of fat and method used. 4. Increases shelf life.
Eggs	1. Traps air when whisked into a foam. **2. Coagulates** (set) on heating. **3. Emulsify** – holds the fat in emulsion and keeps it stable 4. Add colour, flavour and nutritional value.
Raising agents	1. Aerates the mixture increasing volume and resulting in a light texture.

YR7 GRAPHICS

The Design Process

Brief

A brief is a set of **instructions** given to a designer by a company (**client**) about a job or task they wish to be completed.

A **company** (client) will ask a **graphic designer** to create a **product**. A product means an item that can be sold to people (**consumers**).

A brief will set out clearly what it is that should be made (**constructed**) and what requirements (**specifics**) will need to be included in the **design process**.

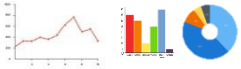
Isometric

When the concept drawing is finished, the design will be turned into an isometric drawing where the size (**dimensions**) of the parts are finalised. Specific measurements (**metric – CM, MM**) are used so that it can copied many times (**mass produced**).

The design will be computerised (**digitally formatted**) so that it can be **saved**, **shared** and **inputted** into the machines that produce it.

Market Research

Companies will employ people to conduct **surveys**. A survey is a set of **questions** that are asked to many people. Often companies would decide which people they will ask (**target audience**). They wish know peoples **preferences** and **spending habits**.



The answers are important to the **design process** and can influence the way the product is **designed**. To make it easy to see large amounts of **data**, companies use **graphs**.

Testing Models

When isometric drawings are complete, it will go through a process of being made **3D**. A number of **machines** will be used to create practice models (**prototypes**) to see how the product works. It must be easy for a human to use (**ergonomics**). **3D printers** are often used.

If the product is made out of different **materials** such as glass, metal or wood, these would require different methods of construction (**manufacturing**).

Design Process

Designers will explore lots of ideas before selecting the right one. Often this involves creating **mind maps**, **sketches** and **mood boards**.

A mind map starts with a single word and then ***explores ideas*** around it, these are sorted into **categories**.

When drawing sketches, designers will work out how it works (**functions**). Ideas at this stage can be really ***creative*** and ***imaginative***.

A mood board is a collections of pictures, drawings, text (**typography**) and **materials** to do with the **theme**.

Packaging

When a final product has been made and passed safety standards, it will be labelled and have its own (**custom**) **packaging**.

Packing must –

- Be eye catching (**visually pleasing**) to attract customers to buy it.
- Protect the item inside it to **avoid damage** or **contamination**.
- Provide **accurate information** about the product inside.
- Stack easily for **transportation** from factory to shops.

Concept Art

Artists/**illustrators** will draw a number of different sketches of the product from different angles.

When designing, **colour** and **style** is important. It is important to think about how it looks (**aesthetics**). Designs will consider the mood board and specifics.

Drawings can be in **traditional** materials (pen, pencil, paint) or using **CAD** (Computer Aided Design) and electric drawing pads (**graphics tablets**).

Advertising

For companies to make money (**financial Income**), they must tell as many people as possible about their product.

This often happens through **social media**, **adverts**, **radio stations**, **magazines** and **displays** in shops.

Its important that the product is well received by its target audience so that people buy it and share reviews of it. Companies make a **profit** when they sell items for more than the price of making it. .

Geography

Year 8: Sustainability

- What is sustainability?
- Sustainable energy
- Carbon footprint and sustainable transport
- Overfishing
- Sustainable waste management
- Plastic pollution

What is Sustainability?

Sustainability - the ability to meet the needs of the current generation, without compromising the needs of future generations.

Why is it important to live sustainably?

- To make sure that we don't run out of the Earth's resources.
- To reduce pollution and damage to the environment.
- To prevent climate change.

Carbon Footprint and Sustainable Transport

Carbon footprint - the amount of carbon dioxide released into the atmosphere as a result of the activities of a particular individual, organisation or community.

One key way we can reduce our carbon footprint is to change the way we travel. Many cities across the world have their own sustainable transport systems to reduce the amount of carbon dioxide released. Electric cars also reduce our carbon footprint as they do not release carbon dioxide.

Sustainable Energy:

Why are fossil fuels unsustainable?

- Fossil fuels are a cause of the greenhouse effect and global warming.
- Fossil fuels are a non-renewable resource which means that they will run out.
- Extracting fossil fuels can damage air, land and water.
- Fossil fuels increase the amount of carbon dioxide in the atmosphere which causes ocean acidification.

Renewable energy – energy from a source that will not run out.

Examples of renewable energy:

- Hydropower - converts the energy of falling or fast-running water into electricity.
- Wind - wind turns the propeller-like blades of the turbine which spins a generator and creates electricity.
- Solar - solar panels are made up of photovoltaic cells which convert the sun's energy into electricity.
- Biomass - plant or animal material used as fuel to produce electricity or heat.
- Geothermal – energy derived from the Earth's internal heat.

Plastic Pollution:

Single-use plastics are plastics designed for one use only before they are thrown away or recycled. Much of this plastic waste ends up in the sea.

An alternative to using plastic would be bamboo. Bamboo can be used for construction, fuel, food and a variety of products.

Overfishing:

Problems caused by overfishing:

- Fish stocks are declining and fish are being caught before they can breed.
- Other wildlife being caught in nets.
- Creation of fish farms.

Sustainable fishing - fishing which allows stocks to replenish and stay stable.

Making fishing sustainable:

- Change the design of the nets used.
- Develop a more effective International Fishing 'police force' which can stop any illegal, unregulated fishing.
- Stop eating overfished species such as cod and haddock.
- Introduce more 'no catch' zones in areas of the ocean that are known to have vulnerable fish stocks.

Sustainable Waste Management:

Waste management - the collection, transportation, disposal or recycling and monitoring of waste.

Examples of waste management strategies:

1. Incineration - burning waste at very high temperatures to eventually reduce the amount of waste and then produce electricity.
2. Landfill - large holes in the ground are filled in with rubbish and then covered over with earth.
3. Recycling - the process of converting waste materials into new materials and objects.

Making waste management sustainable – The 6 R's:

1. Recycle – reprocess a material or product and make something else.
2. Reuse – use a product to make something else with all or parts of it.
3. Repair - when a product breaks down or doesn't work properly, fix it instead of buying a new product.
4. Reduce - cut down the amount of material and energy you use as much as you can.
5. Rethink – design in a way that considers people and the environment.
6. Refuse - don't use a material or buy a product if you don't need it or if it's bad for people or the environment.

Year 8 History Knowledge Organiser: Britain in the 20th Century

Britain at the start of the 20th Century

- Britain during the 20th Century was divided into classes. This class system became a very well established in society:
- **Upper class-** Didn't have to work. May held positions of power or influence. Inherited wealth, land, Houses, art, etc. Would receive a robust private education.
- **Middle Class-** Teachers, lawyers, accountants, doctors. Wealth often came from their jobs. Children mostly be educated at home or sent to grammar schools.
- **Lower class-** Factory workers, tradesmen or labourers. Often lived "hand to mouth"- their main focus was on food and housing. Children would be expected to work for half a day and then go to school for the other half.
- A person could not choose which class they belonged to. They would be born into it. The class system during this time determined everything! From your education, job, opportunities and even who you could and could not marry.
- It was difficult to manoeuver between classes before education was made available to all children in 1945.

Britain during World War I

- Rationing became part of everyday life during the war.
- After the introduction of conscription in March 1916, the government encouraged women to work to take the place of men who were fighting. The attractions were higher wages, better conditions and greater independence.
- The First World War had an enormous impact on living standards, in terms of poverty and health, improving the opportunities of many of the poorest people.
- Through their war work, women gained a profile and rights in society that had previously been denied to them.
- By 1918 the ability to bargain by trades unions of organised labour were considerably strengthened by the key role they played in negotiating the pay and conditions of their workers in manufacture and production for the nation's wartime benefit.

Britain during World War II

Evacuation

- Many children living in cities were moved from their homes to places considered safer, like the countryside (because bombing of industrial areas was expected).
- Nearly 1.5 million people moved in September 1939.
- Schoolchildren and their teachers, mothers with children under five, pregnant women and some disabled people were evacuated.
- At the station children had labels attached to them. They felt scared about being away from their families and excited about going to somewhere new.
- On arrival they were taken to the village hall, where they would be met by the billeting officer.
- Many evacuees were working-class children from poor backgrounds. Many hosts were richer middle-class people. Both had to adapt their new lives.

The Blitz

- Began 7 September 1940. At 4.36pm air-raid sirens started. Waves of German bombers appeared minutes later. The all clear did not sound until 5am.
- Terraced houses near to the factories and docks in the East End suffered the most.
- London was bombed nightly for over 2 months before the Germans then bombed over cities.
- The Blitz ended May 1941. 43,000 were killed.
- 1,400,000 in London alone were made homeless.

Home front

- **Civil Defence**- people relied on the Auxiliary Fire Service and Air Raid Precautions (ARP) wardens during an air-raid. Many were unpaid and did this alongside other jobs. They patrolled areas once the siren had gone off and heled rescue people and put out fires.
- **Air-raid shelters**- most people sheltered in their own homes- under the stairs. Thousands built Anderson shelters in their gardens. In London, underground train stations were popular places to shelter.
- **Rationing**- every man, woman and child had a ration book for food and registered with a grocery store. The grocery store was only given enough food for the people on their list.

Windrush

- The Windrush Generation includes anyone who immigrated to Britain from the Caribbean 1948-1973.
- They came to Britain for a number of reasons; to help rebuild Britain after the Second World War, fill roles in labour shortages and improve the lives for themselves and their families to name a few.
- The British Nationality Act of 1948 gave all Caribbean and commonwealth citizens Full rights to enter Britain and settle there with full citizenship. This coupled with advertisements of cheap transport gave over 1000 migrants the opportunity to make the trip.
- Despite the invitation, Caribbean people were often met with intolerance from large parts of the white population. The first Windrush arrivals were often denied accommodation and access to some shops, pubs, clubs and even churches.

The NHS

- Born 5 July 1948 as an idea of the then Labour health minister, Aneurin "Nye" Bevan; who wanted to find a way to make healthcare accessible for everyone in the UK and not just who could afford it.
- The NHS was the have 3 core principles: That it meet the needs of everyone, was free at the point of delivery, and based on clinical need, not ability to pay.
- By the day of the launch 94% of the public were enrolled with the NHS. Previously, many patients had to pay to visit a doctor or stay in hospital, pushing many families into debt.

Popular culture (or Pop Culture)

- Refers to the cultural traditions of the people- such as through art, music, television and so on.
- After the Second World War, a number of other armed conflicts swept the globe and with it came the anti-war movement. Many used music as a way of expression and unifying. As global icons of music began to share their feelings on wars like Vietnam, their fans used their messages as a way to join together in protest

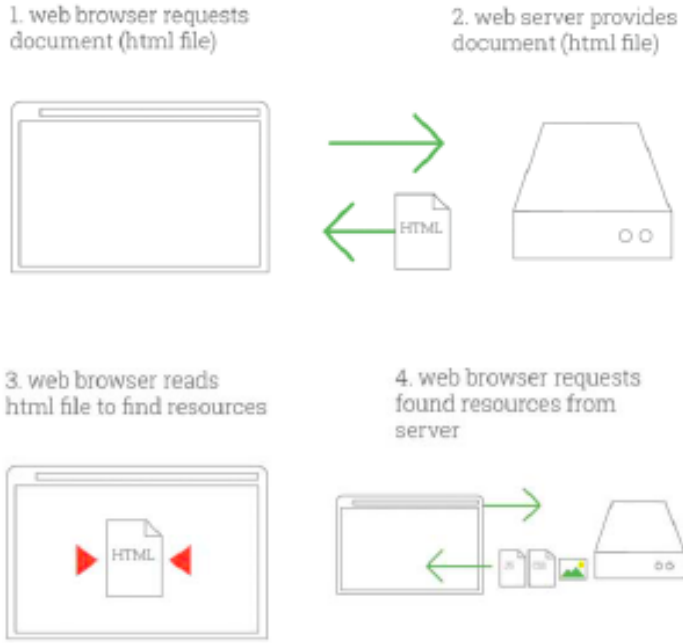
KS3 Knowledge Organiser
Web Design

HTML Tags	
<html>	Root of a HTML document
<body>	Contents of the page
<head>	Information about a page
<title>	Tab title / defines title
<h1>, <h2>, <h3>	Headings
<p>	Paragraph
<img>	Image
<a>	Anchor (used in hyperlinks with href)

File Types	
.HTML	A single page in a website
.CSS	Used for defining styles and formatting on a web page
.DWT	A template used for building HTML pages from which are consistent.
.JPG	The main file type used for images on the World Wide Web - uses lossy compression.
.PNG	Another type of image file used on the World Wide Web – supports transparency and uses lossless compression.
.GIF	An image file which uses lossy compression. GIFs can have a transparent background.
.WMV	A video file which can be embedded within a webpage.

```
<!DOCTYPE html>
<html>
<head>
<title>My First Webpage</title>
</head>
<body>
<h1>My First Heading</h1>
<p>My first paragraph.</p>
</body>
</html>
```

How a webpage is loaded



KS3 Knowledge Organiser
Web Design

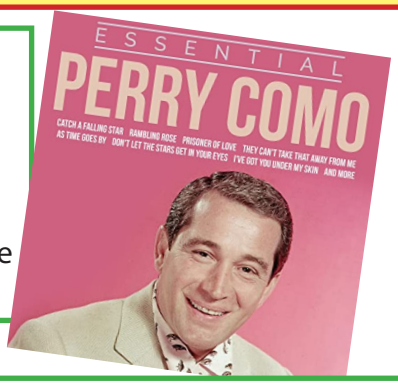
Features of a good website	
House style	A set of rules which state how all of the formatting in a website to keep the style consistent across all pages and documents.
Layout	The arrangement of text, images, and other objects on a webpage.
Colour scheme	The choice of colours used in design for a range of content across a website.
Content	The information shown on a webpage (for example, text, applications, images, audio and video files).
Navigation	The process of navigating a network of information resources in the World Wide Web, using hyperlinks.
Load times	The time it takes to download and display the entire content of a web page in the browser window (measured in seconds).
Functionality	The interactive parts of the site - that which allows the user to respond in some way.
Optimisation	The process of making your webpages load faster by making sure that file sizes of any content are not too large.
Concise	A website is not overloaded with unnecessary content or features.
SPAG	Spellings, punctuation & grammar are used correctly across the website creating a professional feel.

Key vocab	
World Wide Web	Collection of webpages connected together by hyperlinks, using the Internet (usually shortened to WWW).
Internet	A global network of computers all connected together.
Webpage	A hypertext document connected to the World Wide Web.
Website	A collection of webpages with information on a particular subject.
Host	The company which stores the files associated with a single website.
Web browser	The software which displays a webpage or website on a computer. Examples include internet explorer, Google Chrome and Safari.
Uniform Resource Locator (URL)	An address that identifies a particular file or webpage on the Internet.
HTML	Hyper Text Markup Language - describes and defines the content of a webpage
Web script	A type of computer programming language used to add dynamic features to a webpage.
Multimedia	Content that uses a combination of different types of media - for example, text, audio, images.
Hyperlink	A link from a hypertext document to another location, activated by clicking on a highlighted word or image.
Hotspot	An area on a computer screen which can be clicked to activate a function, especially an image or piece of text acting as a hyperlink.
Table	Used to position elements within a web page.

The Early Years

1940s: when African-American music artists from the south were playing and recording "rhythm and blues." This was jazz-based music with a very solid, heavy beat. The lyrics were centered around success and failures of life in general (relationships, freedom, goals). In the southern regions of the United States, this music was referred to by many as "race music".

1950s: white middle-class America was listening to the innocent sounds of artists like Perry Como, Patti Page, and Bing Crosby. Sweet wholesome entertainment to go along with what was on the early television shows. I Love Lucy and Bewitched.



Rock and Roll Music

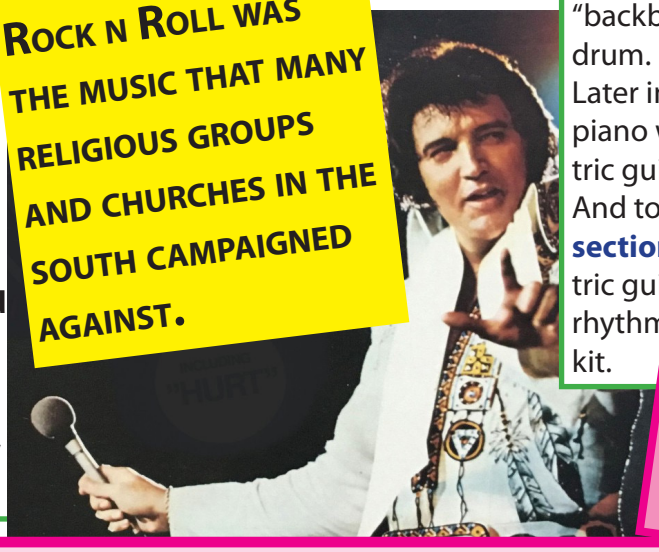
The rhythm and blues of the late 1940s would soon see its style of music morph into rock 'n' roll. The characteristics:

Hard driving accented backbeat
The distinct guitar sound and solo work
Loud vocals
Thought-provoking lyrics

Rock 'n' Roll was definitely designed for dancing. Remember these: The Twist, The Stroll, The Handjive, The Jitterbug.

A white DJ from Cleveland named Alan Freed was promoting the black rhythm and blues artists on his radio show (Moon Dog Show) and using the expression "rock 'n' roll".

ROCK N ROLL WAS THE MUSIC THAT MANY RELIGIOUS GROUPS AND CHURCHES IN THE SOUTH CAMPAIGNED AGAINST.



Instruments

The black rhythm and blues music of the late 1940s had a sound that was original. The sax or piano were the lead instrument, along with the string bass and drums. The "beat" of this music centered around an offbeat which many of us now call the "backbeat" played on the snare drum.

Later in the 1950s the sax or piano was replaced by the electric guitar as the lead instrument. And today, the normal **rhythm section** will consist of two electric guitars (one lead and one rhythm) electric bass and drum kit.

LEARN THE SONG TITLES AND THE ARTIST PLEASE

A mix of black and white song artists that all contributed their special unique sounds to a great genre.

1. **Johnny B. Goode - Chuck Berry**
2. **Jailhouse Rock - Elvis Presley**
3. **Rock Around The Clock - Bill Haley & His Comets**
4. **Tutti-Frutti - Little Richard**
5. **Whole Lot of Shakin' Going On - Jerry Lee Lewis**
6. **What'd I Say - Ray Charles**
7. **Summertime Blues - Eddie Cochran**
8. **Hound Dog - Elvis Presley**
9. **Long Tall Sally - Little Richard**
10. **That'll Be The Day - Buddy Holly & the Crickets**
11. **Maybellene - Chuck Berry**
12. **Bo Diddley - Bo Diddley**
13. **Shake, Rattle And Roll - Joe Turner**
14. **Blue Suede Shoes - Carl Perkins**
15. **Don't Be Cruel - Elvis Presley**
16. **Bye Bye Love - Everly Brothers**
17. **Great Balls Of Fire - Jerry Lee Lewis**
18. **Earth Angel - Penguins**
19. **Why Do Fools Fall In Love - Frankie Lymon & the Teenagers**
20. **Good Golly Miss Molly - Little Richard**

The Birth of Rock and Roll

8K Energy Transfers

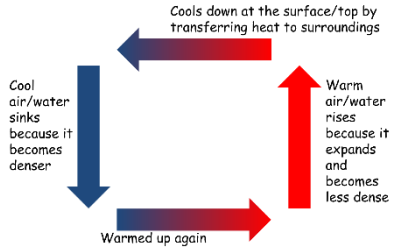
1. Temperature Changes

Temperature	How hot or cold an object is. *Measured in degrees Celsius (°C)*
Internal / Thermal Energy	The energy stored in the movement of particles. *Measured in Joules (J)*
Factors Affecting Amount of Internal Energy Stored	• temperature • material • mass
Energy Transfer	Always from a hotter object to a cooler one.
Evaporation	When a liquid turns into a gas. A way of transferring energy.
Cooling by Evaporation	The fastest moving particles escape a liquid to form a gas. The particles left are storing less energy so the temperature of the remaining liquid is lower.

2. Transferring Energy

Transferring Energy	Energy can be transferred by heating via evaporation, conduction, convection and radiation.
Radiation	A way of transferring Energy by heating through waves (it does not need a medium).
Emitting Radiation	All things give out (emit) infrared radiation, the hotter it is the more it emits.
Thermal Images	Instruments that measure infrared radiation and convert into maps of temperatures.
Conduction	When a solid is heated the particles vibrate more and these vibrations are passed through the solid transferring energy.
Thermal Conductors	Energy is transferred easily through them- metals.
Thermal Insulators	Energy is not transferred through them easily- wood / plastic.
Convection	In fluids (liquids and gases) when part of it is heated it become less dense and rises. Cooler fluid moves in to take its place and a convection current forms.

Convection Diagram



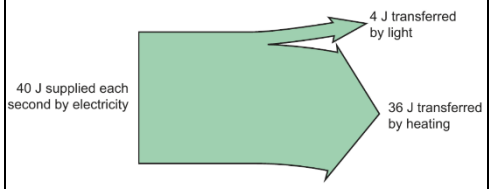
3. Controlling Transfers

Cold Climates	Houses are kept warm by burning fuel for heating and insulating houses to keep warmth inside.
Good Insulators	Brick, wood, carpet, feathers, wool.
Air	A very poor conductor because the particles are far apart
Hot Climates	Houses are kept cool by painting them white (light and shiny surfaces reflect infrared radiation).
Solar Panels	Painted black because dark colours absorb and emit infrared radiation well.
Vacuum Flask	Designed to reduce energy transfers and keep contents hot: • Plastic stopper to stop convection (and it is an insulator). • Glass walls with silver coating reflect radiation back in. • Vacuum between walls so no conduction or convection can occur.

4. Power and Efficiency

Power	The amount of energy transferred by an appliance per second.
Watts (W)	The units for measuring power. 1000W = 1kW (kilowatt)
Power Ratings	Tell us how much energy an appliance transfers.
Efficiency	The amount of useful energy transferred by a device compared with the amount of energy supplied to it.
Sankey Diagram	A diagram that represents energy transfers.

Sankey Diagram Example



Efficiency Formula

$$\text{efficiency} = \frac{\text{useful energy transferred}}{\text{total energy supplied}} \times 100\%$$

5. Paying for Energy

Kilowatt-hour (kWh)	The amount of energy transferred in 1 hour by an appliance. Used by energy companies to measure energy use.

Energy Use Formula

$$\underset{\text{(kWh)}}{\text{energy use}} = \underset{\text{(kW)}}{\text{power rating}} \times \underset{\text{(hours)}}{\text{time}}$$

Saving Money on Electricity / Gas Bills	Not using as much energy will save money. Insulating houses and using more efficient appliances will help with this.
Payback Time	How long it will take you to save the money that an efficiency measure costs.
Payback Time Formula	$\text{payback time} = \frac{\text{cost of change}}{\text{saving per year}}$

Lesson	Memorised?
1. Temperature Changes	
2. Transferring Energy	
3. Controlling Transfers	
4. Power and Efficiency	
5. Paying for Energy	

8G Metals and Their Uses

1. Metal Properties

Physical Properties	The properties that describe a substance on its own. *(colour, strength, density, etc.)*
Chemical Properties	How a substance reacts with other substances.
Properties of Metals	High melting points, strong, flexible, malleable, shiny, good conductors.
Copper	Used in electrical circuits because it is a good conductor of electricity and unreactive. Used in water pipes because it is unreactive, non-poisonous and malleable.
Aluminium	Used in window frames because it is strong and light.
Metals & Oxygen	Most metals react with oxygen. metal + oxygen → metal oxide *e.g. zinc + oxygen → zinc oxide*
Metals & Halogens	Metals react with halogens and other non-metals. *e.g. zinc + fluorine → zinc fluoride*
Catalysts	Speed up chemical reactions without being permanently changed themselves.
Catalytic Converter	Found in cars to help convert dangerous gases into harmless ones- often contain platinum, palladium and rhodium.

2. Corrosion

Corrosion	Any reaction with oxygen at the surface of a metal.
Rusting	The corrosion of iron.

Word Equation for Corrosion of Titanium
titanium + oxygen → titanium oxide

Symbol Equation for Corrosion of Titanium
$Ti + O_2 \rightarrow TiO_2$

Formula	Used to represent the products and reactants in a symbol equation.
Ratio	Comparison of the proportion of two quantities *e.g. in TiO_2 there are two oxygen atoms for every titanium- the ratio is 1:2*
Rusting of Iron	More complex than general corrosion- requires water as well.

Rusting of Iron Word Equation
Iron + oxygen + water → iron hydroxide

Preventing Rust	Use a barrier such as paint/plastic/oil to keep away air/water

3. Metals and Water

Reactivity of Metals

Metal	Reaction with oxygen in air	Reaction with cold water
potassium	🔥	🔥
sodium	🔥	✓✓✓
lithium	🔥	✓✓
calcium	🔥	✓✓
magnesium	🔥	✓
aluminium	✓✓✓	●●●
zinc	✓✓	●●●
iron	✓✓	●●●
tin	✓	●●●
lead	✓	●●●
copper	✓	✗
mercury	●●●	✗
silver	●●●	✗
gold	✗	✗
platinum	✗	✗

Increasing reactivity

Key

🔥 can catch fire	✓✓✓ reacts very quickly	✓✓ reacts quickly
✓ reacts	●●● slow or partial reaction	✗ no reaction

Reactivity	How quickly / vigorously something reacts.
Reactivity Series	A list of metals in the order of their reactivity.
Metals & Water	Metals produce metal hydroxides and hydrogen when reacting with water. *(sodium + water → sodium hydroxide + hydrogen)*

4. Metals and Acids

Potassium - Lithium	React explosively with dilute acids.
Calcium - Zinc	React very quickly with dilute acids.
Iron - Lead	React slowly with dilute acids.
Copper - Platinum	Do not appear to react with dilute acids at all.
Effervescence	The production of a gas. Occurs when metals react with an acid.
Metals & Acids	Metals react with acids to form hydrogen and a salt.

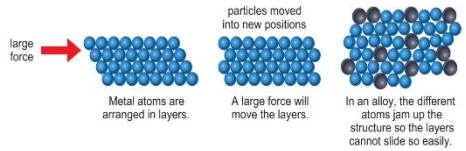
Metals & Acids Word Equation
metal + acid → salt + hydrogen
e.g. magnesium + sulfuric acid → magnesium sulfate + hydrogen

Naming Salts	The first word in the salt is the metal the second depends on the acid used.
Hydrochloric Acid	HCl – forms salts ending in chloride
Sulfuric Acid	H_2SO_4 – forms salts ending in sulfate
Nitric Acid	HNO_3 – forms salts ending in nitrate
Obtaining Salts	Mix the acid and the metal. Filter the solution to remove any excess metal. Heat the solution to evaporate water leaving just the solid salt.

5. Pure Metals and Alloys

Pure	Substance made up of one type of atom.
Alloys	Mixtures of metals.
Solder	Lead mixed with tin- lower melting point than lead used for fixing pipes / electrical equipment.
Duralumin	Aluminium mixed with copper and magnesium making it lighter and stronger. Used in aircraft.
Stainless Steel	Iron mixed with carbon, chromium and nickel making it stronger and more resistant to corrosion. Used in cutlery.

Explaining How Alloys Are Strong



Melting / Boiling Points	Melting and boiling points for pure substances are fixed and occur at precise temperatures. Alloys melt and boil over a range of temperatures.

Lesson	Memorised?
1. Metal Properties	
2. Corrosion	
3. Metals and Water	
4. Metals and Acids	
5. Pure Metals and Alloys	

KS3 PE THEORY KNOWLEDGE ORGANISER

Nutrition

Carbohydrate – The main and preferred source of energy for all types of activity. Required for High-Low intensity energy. Provided in bread, potatoes and sugary foods.

Fats – Used for low intensity energy. Comes in two forms; saturated fats (unhealthy) and unsaturated fats (healthy).

Protein – Required for tissue growth and repair and for a small amount of energy. Provided by meat, fish, eggs and dairy.

Minerals – Required for bone growth and maintenance of a healthy body. Found in vegetables, dairy and more

Vitamins – Required for health, energy and maintaining normal body functions. Found in vegetables and fruit.

Fibre – Required to reduce cholesterol and helps the digestive system (preventing constipation)

Energy Systems

Anaerobic – Exercise without the presence of oxygen. Short distance/time and high intensity – 100m – Usain Bolt

Aerobic – Exercise in the presence of Oxygen. Long distance and low intensity – Marathon Runner – Mo Farah

Types of Training

Continuous Training – Long distance steady state exercise – good for distance athletes

Fartlek Training – Altering the speed (Walk, Jog, Run, Sprint) – Good for games players

Interval Training – Periods of work and rest. (HIIT). Good for sports with rest periods

Weight Training – Lifting a resistance to increase muscle strength – Good for all athletes.

Plyometrics – Jumping, Bounding and Hopping to build power – Good for jumping athletes.

Circuit Training – Organisation of different exercises into a circuit – Good for all athletes as can be made specific.

Static Stretching – Isometric stretching to increase the flexibility of muscles – Helps prevent injury in all sports.

Types of Bones

Long Bones – Used for movement and blood cell production – Femur

Flat Bones – Strong, flat plates of bone used for protection – Ribs

Short Bones – Wide as they are long. Used for support – tarsals

Sesamoid Bones – Bone found in a tendon to allow smooth movement – Patella

Irregular Bones –

These simply do not fall into another category – Vertebrae