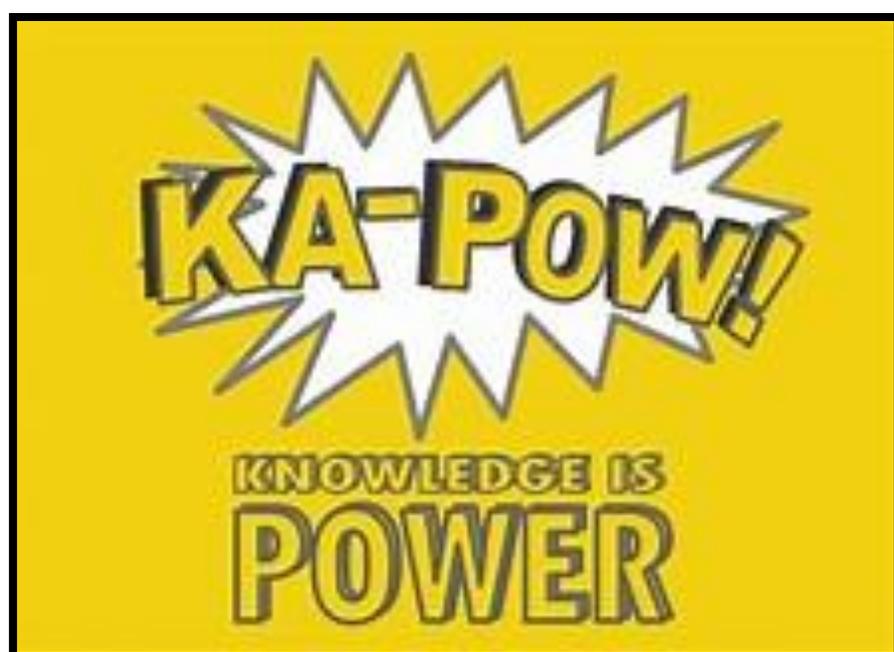




Year 8

Knowledge Organiser Booklet

Half Term 2



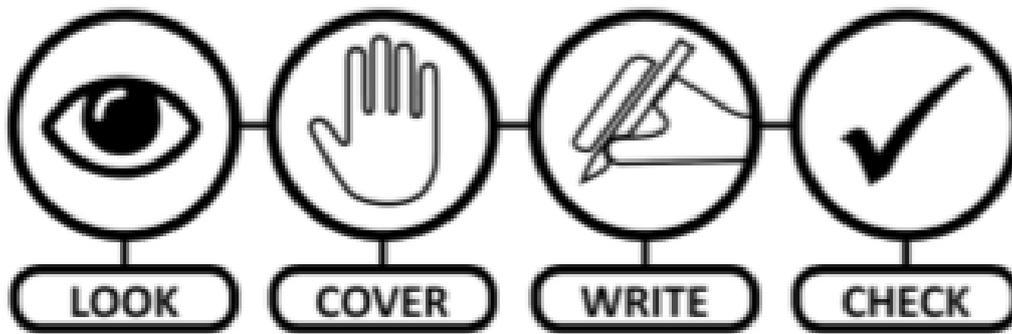
Name

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

The image shows a page of handwritten notes on lined paper. The notes are written in black ink, with corrections made in green ink. The text is organized into three sections, each separated by a solid black horizontal line. The first section is titled 'History' and dated 'Tuesday 20th October'. It lists five main problems William faced after the Battle of Hastings. The second section is a repeat of the first section, and the third section is another repeat. Callout boxes with arrows point to various features: 'Subject, underlined' points to 'History'; 'Date in full, underlined' points to 'Tuesday 20th October'; 'Corrections made in green pen.' points to green ink corrections; 'Each line checked and ticked if correct.' points to checkmarks at the end of lines; 'Solid black line after each attempt' points to the lines separating the sections; 'No whole lines left empty except between repeats.' points to the lines between the sections; and 'Repeat until the whole page is full' points to the overall layout.

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

Respect

Resilience

Responsibility

Pop Art 1960s

Meaning: A type of **modern art** that started in the **1960's** and uses images and objects from **ordinary life**.

Things to look for in a Pop Art painting:

Bright colours, patterns, bold outlines, repeat patterns, faces, food and words.

ANDY WARHOL



Andy Warhol

The most famous of the Pop Artists, Warhol's work is based on things that were **popular** in the **1960's**.

You will see **bright, eye catching colours** that are opposite on the colour wheel (**complementary**).

In factories during WW2 machines were developed to make lots of copies of items (**mass production**). Warhol makes copies and repeats **faces/objects**.

Everyday objects, food brands and celebrities were the theme of his **prints**.

Traditional Art (high art) featuring moral stories, was giving way to **advertising and mass media** (newspapers and TV).



Responding to the Pop Art Movement



The Pop Art movement focused on the means of producing multiple copies and **celebrities**. We will be using a type of **printing** called **Monoprinting** to **mass produce** copies of celebrities.

Observational drawings

Everyday objects and food were some of the things that inspired the movement.



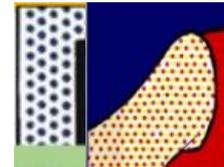
We will be doing a number of **observation drawings, paintings and mixed media collages** focused on **food and brands**.

BARBARA KRUGER



We will be looking at the work of **Barbara Kruger** and the importance of **messages in the media**. Pupils will design their own message in response to Kruger's work.

ROY LICHTENSTEIN



Lichtenstein had a unique style of using **stencils** to draw lots of dots in his work. This replicated the way **comics and newspapers** were printed – made up of lots of dots to form a picture.

This was known as the **Ben Day Dot Process**.

Lichtenstein tried to make his paintings appear like a machine had printed them.

Look out for **primary colours, bold outlines, flat block colours** and lots of **dots!**

CLAES OLDENBURG

Oldenburg uses a range of **materials** to his large **sculptures** of everyday objects and food.

These are made in a **larger scale** than the real thing.





Key Material Properties and Definitions

Strength- is the ability of a material to withstand a force without breaking or bending

Toughness- is the ability of a material to withstand blows or sudden shocks without breaking

Tensile strength- the resistance of a material to breaking under tension.

Brittle- hard but liable to break easily.

Ductile- is the ability of a material to deform, usually by stretching along its length.

Conductivity- is the ability of a material to conduct heat or electrical energy

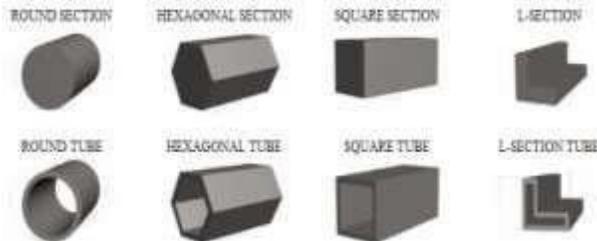
Malleable- is the ability of a material to permanently deform in all directions without cracking

Corrosion- Corrosion is the deterioration of a metal as a result of chemical reactions between it and the surrounding environment.

Hardness- is the ability of a material to resist wear, scratching and indentation

Metal Stock Forms:

If you use metals as part of a practical project a knowledge of the shape or 'section' of lengths of metals is important. The diagrams below show examples of solid lengths and also tubes. When you order metals you need to describe the section you want.



Types of Metal and Properties:

Metal is made from metal ores, which must be mined and processed to transform them into usable materials. It is rare for metals to be used in pure form. Normally they are mixed with other metals to improve their properties: the mixture is called an **alloy**. Most metals are good conductors. There are two main types of metal alloys: **ferrous and non-ferrous**.

Non- Ferrous Metals

- **Non-Ferrous Metals** do not contain Iron, are not magnetic and are usually more resistant to corrosion than ferrous metals.
- **Aluminium-** Ductile, soft, malleable, machines well. Very light. Window frames, aircraft, kitchen ware.
- **Copper-** Ductile, can be beaten into shape. Conducts electricity and heat. Electrical wiring, tubing, kettles, bowls, pipes.
- **Brass-** Hard. Casts and machines well. Surface tarnishes. Conducts electricity. Parts for electrical fittings, ornaments.
- **Silver-** Ductile, Malleable, solders, resists corrosion. Jewellery, solder, ornaments.
- **Lead-** Soft, heavy, ductile, loses its shape under pressure. Solders, pipes, batteries, roofing.

Alloys

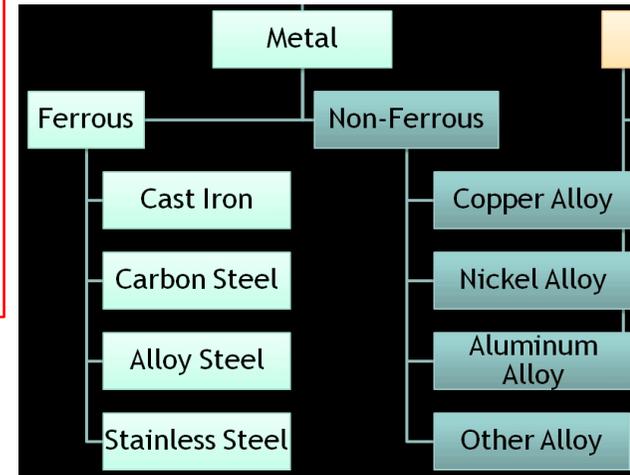
Alloys are sometimes described as a mixture of two or more metals. However, this is misleading, as often alloys are composed of just one metal, as well as other non-metal elements. Cast iron is an example, as it is a combination of iron (metal) and carbon (non-metal).



Ferrous Metals

Ferrous Metals mostly contain Iron. They have small amounts of other metals or elements added, to give the required properties. Ferrous Metals are magnetic and give little resistance to corrosion.

- **Mild steel-** Tough. High tensile strength. Can be case hardened. Rusts very easily. Most common metal used in school workshops. Used in general metal products and engineering.
- **Carbon steel-** Tough. Can be hardened and tempered. Cutting tools such as drills.
- **Stainless steel-** Tough, resistant to rust and stains. Cutlery, medical instruments.
- **Cast iron-** Strong but brittle. Compressive strength very high. Castings, manhole covers, engines.
- **Wrought iron-** us, tough, ductile, resistant to rusting. Ornamental gates and railings. Not in much use today.



Drama – Year 8

Term 1

Pantomime



Background information

- Pantomimes are mostly performed at Christmas time.
- Pantomime's usually include celebrities within the cast to engage the audience.
- Pantomime's are based on fairy tales and nursery stories.
- Pantomime is a type of musical comedy designed for families.
- Pantomime's include audience participation such as booing at the villain and phrases such as 'it's behind you' and 'oh no he isn't'.
- Modern pantomimes include songs, gags, slapstick comedy, dancing and magic.
- Pantomime stock characters include: the evil villain, the damsel in distress, the hero, the pantomime dame (a female character played by a male).

Where does Pantomime come from?

Pantomime has its roots in 'Commedia dell'Arte, a 16th-century Italian entertainment which used dance, music, tumbling, acrobatics and featured a cast of mischievous stock characters.

Key words

Exaggeration	Over the top vocals, movement and characters, often aimed at younger audiences
Area of the stage	The different sections of a stage which tells the actor(s) where they should be stood or enter the stage.
Stock characters	Stereotypical characters that you would expect to find within a certain genre of theatre.
Set design	Creating the props and objects on a stage that help to set the scene and show the audience where a certain scene/play is taking place.
Costume design	Creating the different items of clothing that characters would wear within a performance. Pantomime's costumes are always big and colourful.
Evaluating	Watching a live theatre production and then look at what is good, what could be developed and how close it is to achieving it's aims.

Elements of Stories and Storytelling

- Adaptation – A version of a text that has been adapted for the stage/tv/film
- Modernisation – A story that has been updated to modern day
- Stimulus – A starting point for a story; this could be anything! E.g. a book, a photo, an object, a piece of music or art, a poem etc.
- Prologue - a short story before the real story begins, that helps the reader understand the whole plot.
- Protagonist – the leading character in a story
- Antagonist - the antagonist is the character working against the protagonist of leading character's goal creating the main conflict.
- Moral – a life-lesson within a story
- Genre – the category a story falls into, e.g. horror/romance/fairytale

Year 8 – Knowledge Organiser – Poetry Unit

Influential Poets

- William Wordsworth- An English Romantic poet. His most famous poem is 'Daffodils'.
- William Shakespeare- In his lifetime he wrote over 150 poems. Shakespearean sonnets are still widely studied today.
- Emily Dickinson - An American poet who lived most of her life in isolation.
- Benjamin Zephaniah – A British Poet whose poetry is influenced by Jamaican music and 'street politics'.
- Maya Angelou- A civil rights activist and poet whose most famous poem is 'Still I Rise'.
- Rudyard Kipling - Author of 'The Jungle Book'. His most famous poem is 'If'.
- Carol Ann Duffy- She was the poet laureate in the UK. One of her most famous poems is 'Valentine'.
- Ted Hughes- Considered one of the greatest writers and poets of the 20th century. He was married to Sylvia Plath.
- Sylvia Plath - American poet. She became the first poet to win a Pulitzer Prize posthumously and she won for The Collected Poems.
- Wilfred Owen- One of the most famous poets from WW1. He wrote poetry about the horrors of war.

Poetic Techniques

- **Alliteration** - When words placed together start with the same sound. "She sells seashells on the seashore".
- **Metaphor** - When you say something is something else, but you know it can't be. "She is a star!"
- **Simile** - When you compare two things using 'as' or 'like'. "As brave as a lion".
- **Oxymoron** - When two words are placed together with opposite meanings. "Cruel kindness" or "silent scream".
- **Onomatopoeia** - Words that sound like what they are. "Meow" or "crash".
- **Assonance** - The repetition of a vowel sound "Go slow over the road".
- **Emotive language** - Language used to create a particular emotion in the reader.
- **Figurative language** - When writers use similes, metaphors or personification to describe something in a non-literal way.
- **Imagery** - When something is described in way that appeals to our senses
- **Structure**- The way that the poem is arranged/organised.
- **Sibilance** - A repeated 's', 'sh' or 'z' sound.
- **Semantic Field** - A group of words in the poem that are all about the same thing/idea.
- **Caesura** - A pause in the middle of the line.
- **Enjambment** - When one line runs into another without a pause

Poetic Structures

BALLAD Story poems—often 4 lines stanzas	BLANK VERSE Verse with no rhyme – usually 10 syllable	EPIC Tragic/heroic story poems	FREE VERSE No regular rhyme/ rhythm	SHAPE POEM Poem is in shape of the main subject	ODE Lyrical poem often addressed to one person	SONNET 14 lined love poem	HAIKU 3 lines, syllables 5/7/5. Often about nature	RHYME SCHEME The pattern of the lines that rhyme in a poem.	RHYMING COUPLET Two lines next to each other that rhyme
--	---	--	---	---	--	-------------------------------------	--	---	---



Key terms for analytical vocabulary.

Implies, conveys, communicates, indicates, suggests, hints at, underlines, highlights, illustrates, demonstrates, reveals, connotes, context, significant, dominant, manifests



Antonym

opposite words

- dark and light
- strong and weak

Word Families

group of words that can be built from the same root word

- friend, friendly, friendship

Singular & Plural Nouns

Singular nouns indicate there is one

- boat, house, cat

Plural nouns

ends in vowel + o -> add s

- cat > cats

consonant + o/ ends in sh, ch, x, z, s

-> add **es**

- church > churches

ends in consonant + y

-> change y to i, add **es**

- baby > babies

ends vowel + y -> add **s**

- toy > toys

ends in f, fe -> change f to v, add **es**

- loaf > loaves

Formal/Standard

type of English you should use in your written work

- Have you seen Tom?

Non-standard

informal use of language

- We ain't seen him.

Prefix

add to the beginning of the word to make a new word

- trans- (means 'across', 'beyond') + form = transform

Synonym

words that mean the same

- dirty and unclean
- sad and unhappy

Homophones

words that sound the same, but don't mean the same thing

- to, too, two

Vowels

a, e, i, o, u

Consonants all other letters

Suffix

add to the end of the word to make a new word

- agree + -able (means 'capable of') = agreeable

Clauses

a group of words that contains a verb, part of a sentence

Main clause

simple sentence that contains subject and verb and makes sense on its own

- I like dogs.
- Subordinate clause (or phrase)** simple sentence which does not make sense on its own
- I was born in New York, **which is where my parents live.**

Relative clause

type of subordinate clause that describes noun

- who, which, that
- She lives in Paris, **which (relative pronoun) is the capital of France (relative clause).**

Speech

Indirect

repeating what someone said; do not need to use speech marks

- Peter said he did not want to go to school.

Direct

write down exactly what the person is saying; use inverted commas ("speech marks")

- "I don't want to go to school," said Peter.

Capital

uppercase letters

?! sentence endings

Phrases

group of words which doesn't have a verb, subject or both.

- The young man

Noun Phrases

starts with noun

- The old city

Adjective Phrase

starts with adjective

- happy at his results

Preposition Phrase

starts with preposition

- under the weather

Conjunctions

Co-ordinating conjunctions

for, and, nor, but, or, yet, so (FANBOYS)

- He likes dogs **and** she likes cats.

Subordinating conjunctions

when, if, that, because

- I do not like dogs **because** they are loud.

() Brackets, ... Ellipses, - Dashes

ways of adding and removing extra information in a sentence

- I had a bowl of soup (I usually have rice) for dinner.

'Apostrophes

Possessive

uses apostrophe (') to show possession (one thing belongs to another)

- The bone of the dog -> the dog's bone

Omission

uses apostrophe (') to show you have omitted (left out) some letters in a word

- You have -> you've

Command

when you are telling someone to do something; usually starts with a verb (doing word)

- Give the present to your friend.

! Exclamation

uses exclamation mark to show sentence is saying something surprising or with force

- That dog is dirty!

Types of Sentences

Simple

has one clause

- Mrs Jones is a great teacher.

Compound

has 2 clauses linked together with a connective

- Mrs Jones is a great teacher and she is always helpful.

Complex

has a main clause, connective and subordinate clause

- Mrs Jones, who is a great teacher, always has a smile on her face.

Connective

word or phrase that links clauses or sentences

- also, besides, however

Subjunctive Forms

subjunctive shows something imagined, wished or possible. also used in commands, wishes and requests

- If I were stronger, I would lift that box.

? Question

uses question mark to ask a question

- How many friends do you have?

Statement

simply tells the reader something

- I have many friends.

Noun

names, person, place, or thing

Common

- hand, table, dog

Proper

- Sarah, London

Collective

- team, family, herd

Abstract

- love, peace, hate

Object

who is the action done to or for?

- Andrea (**subject**) spoke to (**verb**) Jorge (**object**).

Pronoun

takes the place of a noun

Personal

- I, you, she, him, we, us, they, them

Relative

- that, which, who, whom, whose,

Possessive

- my, mine, you, his, her, their, theirs

Subject

the thing or person who is carrying out an action

- play, work, study

Verb

a doing or action word

- play, work, study

Adjective

describes a noun

- a friendly tiny dog

Adverbs

adverbs give additional information about the time, place or manner of the verb or sentence.

many adjectives can be turned into adverbs by adding -ly to the end

- proud -> proudly, kind -> kindly, slow -> slowly

Adverbial Phrase

an adverbial phrase is when more than one word does the adverb's job

- The hurricane struck the island whilst we were asleep.

Determiners

words that introduce nouns

Articles

tells you whether noun is specific (the) or general (a or an)

- She took a small suitcase.
- She took the small suitcase.

Preposition

where or when something is in relation to something else

- after, above, on, under
- The dog was under the table.
- After the exam, Lucy was happy.

Present & Past Progressive

Present progressive

- She is reading the book.

Past Progressive

- He was reading the book when I arrived.

Active & Passive Verbs

Active

verb where the subject does the action

- The boy hugged the teddy bear. The boy does the action.

Passive

verb where the subject of the sentence has the action done to it

- The teddy bear was hugged by the boy. The bear receives the action.

Present & Past Perfect

Present perfect form

use have/has

- I have read 'The Three Little Pigs'.

Past perfect form

use had

- He had left the room.

Simple Present

something which happens regularly

- I walk to school.

Simple Past

something that's finished

- I walked to school this morning.

Modal Verbs

verb used to show the level of possibility, indicate ability, show obligation, give permission

- will, may, must
- We will have a sandwich for lunch.
- You must take the test tomorrow.

Vocabulary & Spelling

Standard English

Punctuation

Linking Words

Sentences

Grammar

Verb Forms & Tenses

SATS Companion

www.satscompanion.com

French Knowledge Organiser

Year 8 -Autumn 2

Week 1&2

- **J'aime** Pâques **parce que j'aime** manger des oeufs en chocolat - **I like** Easter **because I like** to eat chocolate eggs.
- **Je déteste** Noël **parce que je n'aime** pas choisir des cadeaux pour ma famille. - **I hate** Christmas **because I don't like** to choose gifts for my family.
- **Chaque année** je regarde les parades **et** j'écoute la musique - **Each year** I watch the parades **and** I listen to music.
- **Le matin** je rends visite à mes grands-parents, **et le soir** je mange avec ma famille. - **In the morning** I visit my grandparents, **and in the evening** I eat with my family.

Week 3&4

- **Je suis allé** au marché **et j'ai acheté** un kilo des olives et deux tranches de jambon - **I went** to the market **and I bought** a kilo of olives and two slices of ham.
- **Je veux** 200 grammes des haricots verts et un chou-fleur - **I want** 200 grams of green beans and a coliflower.
- **J'ai mangé** des moules-frites, **c'est** un plat typique du nord de la France. - **I ate** mussels and chips, **it's** a typical dish from the north of France.
- **Je suis allé** à Paris **et j'ai bu** un café, **aussi j'ai choisi** une crêpe **c'était** délicieux. - **I went** to Paris **and I drank** a coffee, **also I chose** a crepe, **it was** delicious.

Week 5&6

- **On va faire** un voyage scolaire **et on va visiter** les marchés de Noël. - **We are going to do** a school trip **and we are going to visit** the Christmas markets.
- **Je vais goûter** un jus de pomme chaud **et je vais acheter** des cadeaux - **I am going to taste** a hot apple juice **and I am going to buy** gifts.
- **En ce moment je n'aide pas** mes parents **mais l'année prochaine** je vais aller au marché **et** aider dans le jardin - **At the moment I don't help** my parents **but next year** I am going to go to the market **and** help in the garden.
- **En ce moment je ne fais pas** de sport **mais l'année prochaine** je vais faire plus de sport - **At the moment I don't do** sport **but next year** I am going to do more sport.

Spanish Knowledge Organiser

Year 8 - Autumn 2

Week 1&2

- Saco fotos **todos los días pero nunca** hablo por Skype - I take photos **every day but I never** speak on Skype.
- **De vez en cuando** veo vídeos **y a veces los** comparto - **From time to time** I watch videos **and sometimes** I share **them**.
- Descargo melodías o aplicaciones **dos o tres veces a la semana**. - I download ringtones and apps **two or three times a week**.
- Chateo con mis amigos **y también** leo mis SMS, **creo que es** divertido. - I chat with my friends **and also** I read my texts, **I think that it is** fun.

Week 3&4

- **Me encanta** el rap **pero** escucho de **todo** - **I love** rap **but** I listen to **everything**.
- **A veces** escucho la música electrónica **pero no me gusta nada** el rock. - **Sometimes** I listen to electronic music **but I don't like** rock **at all**.
- Mi cantante favorito **es** Ed Sheeran **porque me encanta** la letra. - My favourite singer **is** Ed Sheeran **because I love** the lyrics.
- **Prefiero** las comedias **porque son más** divertidas **que** las telenovelas - **I prefer** comedies **because they are more** fun **than** soaps.

Week 5&6

- Mis amigos **prefieren** los programas de deporte **sin embargo prefiero** los concursos - My friends **prefer** sports programmes **however I prefer** game shows.
- **Ayer por la mañana** salí con mis amigos, **luego** hablé por Skype - **Yesterday morning** I went out with my friends, **later** I talked on Skype.
- **Por la tarde** hice gimnasia **y** bailé en mi dormitorio - **In the afternoon** I did gymnastics **and** danced in my bedroom.
- **Un poco más tarde** hice mis deberes **y** jugué en línea - **A little later** I did my homework **and** played online.

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

Year 8 Food Knowledge Organiser: Principals of Nutrition



Source: Public Health England in association with the Welsh government, Food Standards Scotland and the Food Standards Agency in Northern Ireland

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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.

Fat

Function:
Energy
Warmth
Protection of organs

Sources
Saturated Fat
 (Bad Fats)
 Meat
 Processed Foods
 Lard
 Saturated Fats - solid at room temperature and are from animal sources. Unsaturated fats are liquid at room temperature and are vegetable sources..

Unsaturated Fat
 (Good Fats)
 Avocado
 Nuts
 Olive oil

Too much

- Obesity
- Type 2 diabetes
- Heart Disease

Too little

- Fat soluble vitamin deficiencies

Macronutrients

Needed in large amounts to help the body to function properly

Protein

Function:
Growth and Repair
Energy

Sources:
Plant
 Nuts
 Quorn
 Beans
 Lentils

Animal
 Eggs
 Fish
 Meat

Too much

- Turns to fat if not turned into energy

Too little

- 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

- Obesity
- Type 2 diabetes
- Heart Disease

Too Much

- Tooth decay
- Type two diabetes
- Obesity

Micronutrients

Needed in small amounts to help the body to function properly

Watch the video to learn more
<https://www.youtube.com/watch?v=ISZLTJH5IYg>

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.

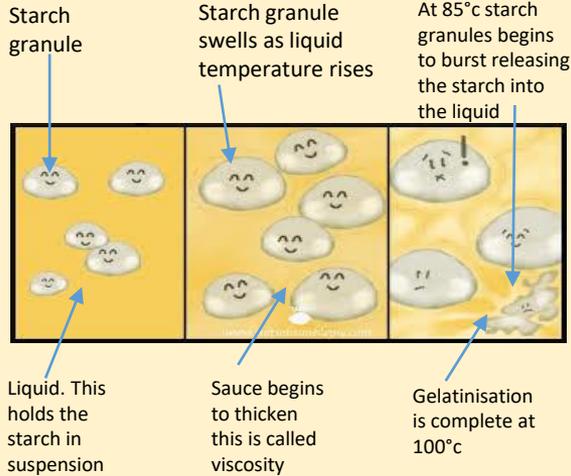
A wide variety of different sauces can be used to produce dishes using a vast range of skills, to develop differing flavours and textures. These can include a **coating, accompaniment** or **part of a meal**.

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 **85C** 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**.



Liquid. This holds the starch in suspension

Sauce begins to thicken this is called viscosity

Gelatinisation is complete at 100°C

Factors that affect gelatinisation

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

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	<ol style="list-style-type: none"> 1. Forms structure of the cake. 2. As the cake is heated, protein (gluten) in the flour sets the framework and shape. 3. DEXTRINISATION occurs, starch converts into sugar when exposed to dry heat. This sugar then CARAMELISES on the surface.
Sugar	<ol style="list-style-type: none"> 1. Sweetens and adds flavour. 2. When creamed with fat, helps to hold air in the mixture. 3. CARAMELISATION gives colour.
Fat	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 1. Aerates the mixture increasing volume and resulting in a light texture.

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.

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



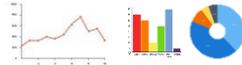
When the concept drawing is finished, the design will be turned into an isometric drawing where the size (**dimensions**) of the parts are finalised. Specific measurements (**metric – CM, MM**) are used so that it can be copied many times (**mass produced**).

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: China

- Physical Features
- Population Pyramids
- Economy
- Rural to Urban migration

Key definitions

Urban = a city e.g. London

Rural = the countryside e.g. Epping Forest

Migration = movement of people from one country to another

Population = the total number of people in an area

Economy = how a country or place is doing in making goods, and how much money it has

Fluctuating = to rise and fall irregularly

Physical Features of China

In the north of China, you will find the Gobi Desert. The Himalayan Mountain Range is towards the south west, bordering India. The east and south of China is mainly low lying grassland

Population Pyramids

These tell us the gender and age structure of Chinas population.

As we move further in time Chinas 'pyramid' becomes top heavy as the population gets older and fewer babies are born.

Describing a line graph

T.E.A

T = Trend

E = Example

A = Anomaly

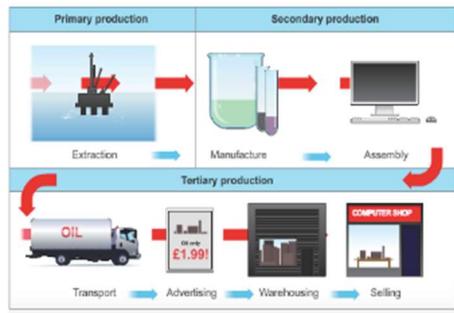
- Trends can be an increase, decrease or maintaining.
- Examples require using data
- An anomaly is something which doesn't match the trend.

Environmental impacts of economic growth

As the economy grows in China and more industries develop the environment can be negatively be affected. For example, waste from factories can leak into the rivers, or pollution from burning fossil fuels can lead to smog.

Chinas Economy

In 1981 88% of people in China lived in poverty. Today it is less than 7%. 500 million people have been lifted out of extreme poverty. Today China is the second wealthiest country in the world after the USA. More of Chinas population now work in the secondary sector. People can earn more money working in industries.



Rural to Urban Migration

More people are moving from rural to urban areas. This causes urbanisation (the increase in proportion of people living in urban areas)

Urbanisation occurred because of industrialisation (more factories), which creates jobs for people. A growing population in urban areas has meant better infrastructure including efficient public transport.

Rural to Urban Migration: Challenges

- More factories mean that there is more air pollution
- Urban sprawl occurs (growth of the cities into rural areas)
- Farmland is lost
- Farmers are forced off their land
- Income gap created between villages and cities
- Urban residents earn 3 times more than rural residents

Year 9 History Knowledge organiser Half-term 6: Jack the Ripper, created by Mr Pritchard

What was it like to live in Whitechapel c.1870?

Whitechapel was one of the poorest districts in London with high levels of crime. It had a population of 30,000. About 1,000 were homeless made up of long-standing Londoners as well as Irish and Jewish Eastern European immigrants. Whitechapel was a breeding ground for crimes ranging from theft to murder. Many crimes were directly linked to the high levels of poverty and unemployment

Pollution and poor sanitation- London was heavily polluted. Smoke and gas fumes choked the maze-like streets of the East End. There was poor sanitation little, healthy drinking water. Sewers ran into the streets.

Housing

- Most housing was in overcrowded slums, known as rookeries. Houses were divided into apartments, with up to 30 people in one apartment sharing beds.
- Lodging houses offered a bed in 8 hour shifts. The smell, summer heat and rats made this awful. About 8,000 people (25% of local population) lived in them.

Work

- Many residents worked in 'sweated' trades like tailoring, shoe-making and making matching. The sweatshops were small, cramped and dusty and had little natural light. Hours were long: wages were low.
- Others worked in railway construction or as labourers where the amount of work varied day to day which left families with uncertain incomes.

Workhouses- offered food and shelter to those too poor to survive in the general community such as the old, sick, disabled, orphans and unmarried mothers. Conditions were deliberately made worse than those that could be provided by a labourer for his family so as to put people off from entering the workhouse.

Prostitution- There was an estimated 1,200 prostitutes and 62 brothels in Whitechapel. Women became prostitutes in order to survive- in brothels or on the streets.

Alcohol- was the only escape that many people had from their terrible lives. Drunkenness often turned to violence. Alcoholics could turn to crime to get the money for drink.

The Jack the Ripper Murders

The Victims

- In 1888- 5 women murdered in Whitechapel. Police believed they were all killed by the same person, who was never caught, but was nicknamed Jack the Ripper.
- 31 August, Mary Ann Nichols, found in Buck's row
- 8 September, Annie Chapman, found in the backyard of 29 Hanbury Street, Spitalfields.
- 30 September, Elizabeth Stride, found Berners Street
- 30 September, Catherine Eddowes, found in Mitre Square, Aldgate.
- 9 November, Mary Jane Kelly, found inside 13 Miller's Court, Dorset Street, Spitalfields.

The suspects

- Dr Thomas Cream- American doctor who had been arrested for poisoning prostitutes and writing false letters to the police. He was hanged in 1892 for murdering prostitutes. His last words were 'I am Jack'.
- Severin Klosowski (aka George Chapman)- suspected by the police at the time of the murders. He had poisoned two of his wives. He trained as a doctor and worked as a barber near Whitechapel.
- M J Druitt- trained as a doctor. His own family thought he could be the Ripper. Committed suicide in Dec 1888 and there were no more murders after this time.
- Alexander Pedachenko- a Russian doctor who worked in a women's hospital. He went back to Russia after the last murder and was then sent to a mental hospital after murdering a woman in St Petersburg.
- Prince Albert Victor- the grandson of Queen Victoria and was known for hanging around the gay bars in Whitechapel late at night. The last victim, Mary Kelly, worked for him for a while.
- John Pizer- a Jewish shoemaker who fitted the public's view of the murderer's profile due to the fact that he was a craftsman and had access to 5 inch blades and was in possession of a leather apron. Pizer also had stabbing convictions against him and displayed a well-known dislike for prostitutes. He fitted the physical descriptions that had been circulated; that of a short man with a dark beard, moustache and foreign accent.

The police investigation

Policing techniques included:

- Following up on direct leads
- Following up on coroners' reports
- Following up on journalists' theories
- Following up on clues found with victims
- House-to- house searches
- Setting up soup kitchens
- Interviewing witnesses
- Help from other police divisions
- Distributing hand bills (leaflets)
- Questioning lodging house residents
- Visiting lunatic asylums- The murders were so savage that some thought he must have escaped from a lunatic asylum

Obstacles to success

Police database- was not yet large enough to be effective.

Crime scenes - Crime-scene photography was just starting to be used and so had a limited impact. On top of this crime scenes were often tampered with by people.

The Vigilance committee- set up by Whitechapel traders and business. They offered rewards for information leading to the killer's arrest and took to the streets at night making loud noises- this damaged the police investigation.

Bloodhounds- police tried to use bloodhounds but did not pay their owner who then refused to work with the police.

Lack of forensic techniques- DNA evidence, fingerprinting and blood samples did not exist at this time.

Police in disguise- some officers dressed as prostitutes to trap the Ripper- but refused to remove their moustaches.

Police force rivalry- Whitechapel bordered on the city of London- which had its own police force. They did not cooperate and were rivals for finding the killer.

The Media - The press often criticised the police and published stories based on guesswork that the police had to follow up and which distracted the police.

The letters- the police and the newspapers received three letters from someone claiming to be Jack the Ripper. The police did not know if these were genuine.



KS3 Knowledge Organiser Cyber Crime

Protection mechanisms	
Proactive	Mechanisms designed to prevent malware from reaching a device.
Reactive	Mechanisms designed to deal with malware when it has infected a device.
Firewall	Software designed to block unwanted access to systems by examining all data entering and leaving the network. Similar to a security guard.
Anti-malware	Also known as anti-virus software. Software designed to scan all files stored on a device. If a virus is found then it will be highlighted and removed by the anti-malware. This includes anti-virus software.
Spam filter	A program which checks any incoming email for any malware or suspicious attachments
Two-Step verification	When logging into accounts using use a password and memorable information to verify a person's identity.
Be informed	Knowing the signs that a device may be infected or how to spot a phishing email.

Keyword Cipher	
Accepted keywords (No repeated letters)	Non-accepted keywords (Contain repeated letters)
DECRYPT MONKEY COMPUTING	ELEPHANT COLOUR SCHOOL
When a non-accepted keyword is used, any repeats of letters should be omitted. For example: ELEPHANT > ELPHANT	

Protecting Data	
Encryption	The act of protecting data by scrambling it in such a way that only someone with the secret code or key can read it. NB. This does not prevent the threats of malware, but makes it harder for any stolen information to be understood.
Decryption	The act of unscrambling encrypted data, with a secret code or key, so that it can be read.
Key	A sequence of numbers used to encrypt or decrypt data.
Plaintext	The message before encryption
Ciphertext	An encrypted message
Symmetric encryption	Using a secret key to encrypt and decrypt data. This can be risky if the key slips into the wrong hands
Asymmetric encryption	Using a public and private key to encrypt data.
Caesar Cipher	Using a key to shift the letters of the alphabet and then encrypt data using this rule.
Keyword cipher	A keyword is selected and used at the start of the ciphertext alphabet, the rest of the alphabet will then be filled up using the remaining letters. Keywords cannot contain repeated letters.

Caesar Cipher example

A translation of the Caesar cipher using the rule +3 is shown below

Plaintext	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Ciphertext	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C

Using this encryption, the message "Computing is fun"
Would be encoded as

C	O	M	P	U	T	I	N	G	I	S	F	U	N
F	R	P	S	X	W	L	Q	J	L	V	I	X	Q



KS3 Knowledge Organiser Cyber Crime

Malware key vocab	
Malware	Software that can harm devices, which is installed on someone's device without their knowledge or consent.
Virus	Viruses attach (by copying themselves) to certain files. Viruses are self-replicating meaning that they can copy themselves across files or other computers without consent.
Worm	Similar to a virus but targets large networks. They will spread amongst devices connected to that network.
Trojan	Trojans are malware disguised as legitimate software. Unlike viruses and worms, Trojans don't replicate themselves – users install them not realising they have a hidden purpose.
Spyware	Secretly monitors user actions (eg. key presses) and sends info to a hacker. They can discover passwords, credit card details, and other personal information
Ransomware	A type of malware which hijacks files and encrypts them. It will demand money from a victim in exchange for the password to decrypt files.
Adware	A type of malware which floods a victim with unwanted adverts and pop-ups on their device.
Hacker	A person who unlawfully gains access to a computer system.

Motives behind malware	
Fun	Trolling software whereby people experiment with code trying to break security measures.
Nuisance	Some malware are designed to generally cause a nuisance to victims.
For good	Some malware has been designed to save space on peoples computers.
Data gain	Malware can be designed to retrieve data from sources, this can then be sold on for hacking purposes.

Key vocab	
Phishing	To obtain people's information illegally online by pretending to be someone else.
Hacking	To gain unauthorized access to data in a system or computer.
Digital forensics	The process of uncovering and interpreting electronic data for the purpose of reconstructing past events.
Pen testing	A method of trying to infiltrate a network to check for flaws in security methods.
Ethical Hacker	A hacker who claims to practice hacking to highlight security concerns.
Network policies	Guidelines set in place by a company or organisation, which all members agree to, so that the network is as protected as possible.
Username	Identification used by a person with access to a computer, network, or online service. (eg. 17B1...)
Password	A secret word, phrase, or string of characters that allows access to a computer, interface, or system.
Colossus	A computer designed and built in the Second World War to decrypt German messages, so that battle plans could be interpreted.

Signs of Phishing emails	
	<ul style="list-style-type: none"> - Spelling mistakes? - Inconsistent formatting - Fake email addresses - Threatening language - Not using correct names - Links to follow - Links to alternative websites (<i>hover, don't click!</i>) - Are there attachments that you weren't expecting?

HIP HOP HACADEMY

Hip hop or hip-hop is a subculture and art movement developed in South Bronx in New York City during the late 1970s. While the term **hip hop** is often used to refer exclusively to **hip hop** music, it is characterized by...

Afrika Bambaataa of the **hip hop** collective Zulu Nation outlined the 9 pillars of **hip hop** culture, coining the terms: "rapping" "DJing" "b-boying/b-girling" / breakdancing; and graffiti art.

Why does Hip hop traditionally not use real instruments?

How might the social and cultural demographic explain this?

How was hip hop used as a tool for social change?

The development of hip hop language is complex; the songs of slaves arriving in the new world, Jamaican dub music, jazz and blues singers, cockney slang and radio deejays hyping their audience using rhymes.

Hip hop has a distinctive slang. It is known by alternate names, such as "Black English", or "Ebonics". Academics suggest its development stems from not liking how typically well off white people spoke (White English). Due to hip hop's success in the late 1990s, many of these words are used outside of hip hop. The word **diss** for example. There are also a number of words which predate hip hop, but are often associated with the culture, with **homie** being a notable example. Sometimes, terms like **what the dilly, yo**. One example is the slang of Snoop Dogg and E-40, who add **-izzle** or **-izzy** to the end or middle of words. **Tru dat!** Look at language around you - why do we change a perfectly good language?

Hip hop lyricism has gained respect in academic and literary circles. Studies of hip hop linguistics are now offered at institutions such as the University of Toronto, where poet and author George Eliot Clarke has taught the **potential power of hip hop music to promote social change**. how cool is that!

The 9 Pillars

Breakin'
Emceein'
Graffiti Art

Deejayin'
Beat Boxin'
Street Fashion

Street Language
Street Knowledge
Street Entrepreneurialism

Gangsta rap is a subgenre of **hip hop** that reflects the violent culture of inner-city American black youths. **Gangsta rap** created by rappers such as **Schoolly D** and **Ice-T**, and was popularized in the late 80s by groups such as **N.W.A**. "**6 in the Mornin**" is a song by **Ice-T**. Released in 1986 - it is considered to be one of the defining tracks of the **gangsta rap** genre.. After the national attention that **Ice-T** and **N.W.A** created in the late 1980s and early 1990s, **gangsta rap** became the most commercially lucrative subgenre of **hip hop**.

N.W.A are the face of **gangsta rap**. The lyrics were more violent, openly aggressive and shocking than other rap acts, featuring bad language or profanity. These lyrics were placed over rough, rock guitar-driven beats, adding to the music's hard-edged feel.

The first **gangsta rap** album was **N.W.A's Straight Outta Compton**, (1988). **Straight Outta Compton** would establish West Coast hip hop as a vital genre, and establish Los Angeles as a legitimate rival to hip hop's long-time capital, New York City. The **NWA** album "**Straight Outta Compton**" sparked the first major controversy regarding hip hop lyrics when their song "**F*ck the Police**" earned a letter from FBI Assistant Director **Milt Ahlerich**, strongly expressing law enforcement's resentment of the song.



" Hip hop texts are rich in imagery and metaphor and can be used to teach irony, tone, diction, and point of view. can be analyzed for theme, motif, plot, and character development."

- 1979 - Grandmaster Flash - Rappers Delight
- 1982 - The Message
- 1986 - Salt'n'Pepa - Push it
- 1986 - Ice-T - 6 in the Morning
- 1988 - Public Enemy - Rebel
- 1988 - NWA Straight Outta Compton
- 1990 - LL Cool J Mama Said
- 1991 - 2Pac Brenda's got a baby
- 1992 - Dr Dre Snoop Nuthin but a G
- 1993 - Wu-tang Clan - C.R.E.A.M
- 1994 - Warren G - Regualte
- 1994 - Notorious B.I.G - Juicy
- 1995 - Coolio - Gangsta's Paradise

- 1996 - Jay-Z Dead Presidents
- 1999 - Eminem - My Name is
- 1999 - Snoop D - Still Dre
- 2000 - Outkast Ms.Jackson
- 2002 - Eminem - Lose yourself
- 2003 - 50cent - In da Club
- 2007 - Souljah Boy - Crank That
- 2008 - Lil Wayne - Lollipop
- 2010 - Lil /Eminem Drop the World
- 2011 - Nicky Minaj - Superbass
- 2013 - Tyga - For the Road
- 2014 - Rae Sremmud - No Type
- 2017 - Kendrick Lamarr -Humble

8E Combustion

1. Burning Fuels

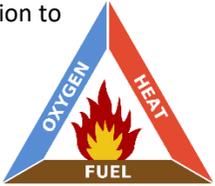
Fuel	A chemical substance from which stored energy can be transferred usefully to make things happen.
Fuel Cell	Used in hydrogen-powered vehicles, releasing energy from hydrogen.
Fuel Cell Word Equation Hydrogen + oxygen → water	
Reactants	The starting substances- on left of word equation.
Products	The new substances made- on right of word equation.
Combustion	Burning, usually in air. The reaction gives out energy which is transferred to the surroundings by heating or light.
Fossil Fuels	Fuels formed from living organisms that died millions of years ago- <i>petrol, diesel</i>
Hydrocarbons	Only contain carbon and hydrogen atoms- <i>petrol, diesel</i>
Combustion of Hydrocarbons	The carbon and hydrogen atoms react with oxygen. The carbon reacts to form carbon dioxide.
Carbon Dioxide	Carbon dioxide will turn limewater cloudy.

2. Oxidation

Oxidation	Reacting with oxygen.
Oxide	Compound formed by oxidation.

Metal Oxides	Formed when metals react with oxygen. <i>metal + oxygen → metal oxide</i>
Conservation of Mass	Mass is never gained or lost in a chemical reaction. The atoms in reactants just rearrange to form the products, no new atoms are made and none disappear.
Heating Zinc in Air	Forms a white powder zinc oxide. The mass will appear to increase because the zinc has combined with the oxygen in air.
Gas Products	If the product is a gas it may escape and make it seem like the mass has decreased.
Phlogiston	A substance scientists used to think explained why things burned that was then proven not to exist.

3. Fire Safety

Exothermic	A reaction that releases energy that we can feel as heat- <i>combustion</i>
Thermometer	Used to measure a change in the temperature.
Fire Triangle	Three factors allow combustion to occur. 
Putting Out a Fire	You must remove at least one of the three factors.
	Explosive Heating may cause an explosion.
	Flammable These substances catch fire easily.

	Oxidising These substances release oxygen.
Fire Extinguishers	Work by cooling a fire or stopping oxygen getting to the fuel.
Oil Fire	Water will sink through the oil and turn to steam making the fire spread out. Use foam or a fire blanket to keep oxygen away.
Electrical Fire	Water conducts electricity so you may get a serious shock. Turn off the electricity and use a powder or carbon dioxide extinguisher.

4. Air Pollution

Complete Combustion	Carbon burns in plenty of air only forming carbon dioxide.
Incomplete Combustion	Not enough oxygen for all the carbon to react with.
Products of Incomplete Combustion	<ul style="list-style-type: none"> carbon dioxide- linked to global warming carbon monoxide- poisonous gas soot- damage lungs and trigger asthma
Impurities	Small amounts of other substances in fuels.
Sulfur Dioxide	Formed when hydrocarbons have a sulfur impurity.
Nitrogen Oxide	Formed by high engine temperatures causing nitrogen and oxygen in air to react.
Pollutants	Something that can harm living things and damage the environment.
Catalytic Converter	Found in cars to react carbon monoxide with more oxygen forming carbon dioxide. Also breaks down nitrogen oxides.

Acid Rain	Sulfur dioxide and nitrogen oxides rise into the air and dissolve in water vapour. The rain is now more acidic.
Controlling Acid Rain	Neutralisation reactions used to remove acidic gases from chimney smoke. Acidic soil /water can be neutralised by adding calcium carbonate.

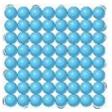
5. Global Warming

Greenhouse Gases	Trap energy from the Sun in the atmosphere <i>e.g. carbon dioxide</i>
Greenhouse Effect	Energy trapped by greenhouse gases is transferred back to the Earth's surface causing it to warm up.
Earth's Temperature Over Time	The temperature of the Earth has fluctuated over time it is rising rapidly now though.
Global Warming	Increase in global temperature due to more greenhouse gases in the air and the greenhouse effect.
Climate Change	Resulting from global warming- changes to weather patterns, more storms, flood, droughts, etc.
Evidence	There is now lots of evidence for global warming. average temperatures are increasing and ice caps are melting.

Lesson	Memorised?
1. Burning Fuels	
2. Oxidation	
3. Fire Safety	
4. Air Pollution	
5. Global Warming	

8 Fluids

1. The Particle Model

States of Matter	The three forms that a substance can be in; solid, liquid or gas.
Solid Properties	Do not flow, fixed shape, fixed volume, cannot be compressed
Liquid Properties	Can flow, no fixed shape, fixed volume, cannot be compressed
Gas Properties	Can flow, no fixed shape, no fixed volume, can be compressed
Particle Theory	Used to explain the different properties and observations of solids, liquids and gases.
Solid Particle Properties	Fixed arrangement of particles held closely together that cannot move over each other but vibrate. 
Liquid Particle Properties	Held closely together but not in a fixed arrangement and can move over each other. 
Gas Particle Properties	Far apart from each other and free to move about in all directions. 
Diffusion	The movement of particles spreading out and mixing with each other without anything moving them.

Brownian Motion	An erratic movement of small specks of matter caused by being hit by the moving particles that make up liquids or gases.
Expanding	Materials expand when heated because the particles vibrate more, taking up more space.
Contract	Materials contract when cooled because the particles vibrate less and take up less space.
Density	The mass of a certain volume of a material. $density = \frac{mass}{volume}$

2. Changing State

Changes of State	Changing from one state of matter to another. Physical changes because no new chemicals are made.
Melting	Turning from a solid to a liquid- occurs at melting point
Freezing	Turning from a liquid to a solid- occurs at freezing point
Condensing	Turning from a gas into a liquid.
Sublimation	Turning from a solid to a gas.
Evaporation	Turning from a liquid into a gas. Can occur at the surface of a liquid at any temperature.
Boiling	When evaporation occurs within a liquid- occurs at the boiling point
Pure	A substance made up of a single type of atom or compound.
Pure Substances Changing State	Occurs at a set temperature. The temperature stays constant when changing state as bonds are broken or made.

Mixtures Changing State	Occurs over a range of temperatures as it contains substances with different melting/boiling points.
Water	Contracts as it is cooled up until 4°C and then it expands slightly. Ice takes up more space than water and is less dense

3. Pressure in Fluids

Fluids	Liquids and Gases
Pressure	The force of particles hitting things- comes from all directions in gases and liquids.
Pressure Units	Pascals (Pa) One pascal is the a force of one newton on every square metre.
Atmospheric Pressure	The pressure of the air- 100,000 Pa
Tyres	Contain air under high pressure because they are pumped with extra air causing more particles to hit the inside walls.
Temperature	Pressure in fluids increases as you increase temperature because particles move faster and hit the walls of the container harder.
Volume	If you compress a gas into a smaller volume the pressure increases because the particles hit the walls more.
Pressure From Above	As you go down the ocean there is more water above you so pressure increases. As you go up a mountain there is less air above you so pressure decreases.

4. Floating and Sinking

Upthrust	The force of water pushing upwards.
Weight	The amount of force with which gravity pulls on a mass.
Water	The density of water is 1 g/cm ³
Floating	If something has a density less than water it will float in water.
Sinking	If something has a density greater than water it will sink in water.
Air	The density of air at sea level is around 0.001 g/cm ³
Hot Air Balloons	Fly because the overall density of the balloon is less than the air around it.

5. Drag

Drag	A resistance force acting on an object to slow it down.
Water Resistance	Type of drag that occurs in water.
Air Resistance	Type of drag that occurs in air.
Friction	Partly causes the drag on a moving object.
Streamlined	Smooth shape to reduce air / water resistance.
Speed	The faster an object is moving, the greater the drag.
Balanced Forces	Equal forces acting in opposite directions.
Engine	Forward force of an engine needs to balance the drag.

Lesson	Memorised?
1. The Particle Model	
2. Changing State	
3. Pressure in Fluids	
4. Floating & Sinking	
5. Drag	

KS3 PE THEORY

KNOWLEDGE ORGANISER

Components of Fitness

Agility – the ability to change direction at speed whilst maintaining control.

Balance – maintenance of centre of mass over base of support.

Cardiovascular Endurance – the ability of heart and lungs to supply oxygen to working muscles.

Coordination – the ability to use 2 or more body parts smoothly and efficiently together.

Flexibility – the range of movement possible at a joint.

Muscular Endurance – ability of a muscle or group of muscles to undergo repeated contractions avoiding fatigue.

Power – product of strength x speed.

Reaction Time – the time taken to initiate a response to a stimulus.

Speed – the maximum rate at which an individual is able to perform a movement or cover a distance in a period of time.

Strength – the ability to overcome a resistance (4 types: maximal, dynamic, static, explosive).



Agility



Flexibility/Balance/Strength



Reaction Time

Health and Fitness

Health – A state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.

Fitness – The ability to meet or cope with the demands of the environment.

Movement Analysis

Flexion and Extension

Decreasing the angle at a joint

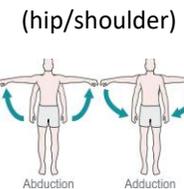
(hip/knee/elbow/shoulder)

Increasing the angle at a joint



Abduction and Adduction

Movement away from the midline of the body



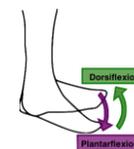
Movement towards the midline of the body

Dorsiflexion and Plantarflexion

Pulling toes up towards the sky

(ankle)

Pointing toes down towards the floor



Rotation

Circular movement around a fixed joint

(hip/shoulder)



Muscle Contractions

Isometric

(no movement)

Muscle remains the same length as it contracts



Isotonic

(movement):

When the contraction of a muscle causes it to change length:

Concentric – muscle shortens as it contracts

Eccentric – Muscle lengthens as it contracts

