NOTTINGHAM
FREE SCHOOL

YEAR 8
HOMEWORK
KNOWLEDGE ORGANISER

Summer Term 2

Name: _____ Tutor Set: _____

"A person who never made a mistake never tried anything new."

Albert Einstein

YEAR 8
HOMEWORK
KNOWLEDGE ORGANISER
Summer Term 2

Contents Page

Page	Contents
Page 3	Head of School's Page
Page 4-5	English
Page 6-9	Science
Page 10	Maths: Using Hegarty
Page 11	Spanish
Page 12	History
Page 13	Geography

Page	Contents
Page 14	Philosophy and Ethics
Page 15	Computer Science
Page 16	Music
Page 17	Drama
Page 18	Art
Page 19-20	PE
Page 21-26	DT
Page 27	Notes Pages

YEAR 8
HOMEWORK
KNOWLEDGE ORGANISER
Summer Term 2

HEAD OF SCHOOL'S PAGE

General Knowledge

A: Our World – Largest countries by area

Country	Area (Sq. KM)
Russia	17 098 242
Canada	9 984 670
United States	9 857 348
China	9 596 961
Brazil	8 515 770
Australia	7 741 220
India	3 287 263
Argentina	2 780 400
Kazakhstan	2 724 900
Algeria	2 381 741

C: Our World – The Commonwealth

What is the Commonwealth?

The Commonwealth of Nations, normally known as the Commonwealth, is an organisation of 53 countries across 6 continents, nearly all of them former territories of the British Empire (countries that were ruled by Britain but now have independence).

The Commonwealth association we know today started in 1949

The last two countries to join the Commonwealth - Rwanda and Mozambique - have no historical ties to the British Empire.

The Queen is currently head of the commonwealth. Prince Charles is her successor.

The aims of the Commonwealth are to:

- Promote democracy
- Celebrate diversity
- Boost trade
- Promote gender equality
- Create prosperity
- Protect human rights
- Amplify the voice of small states

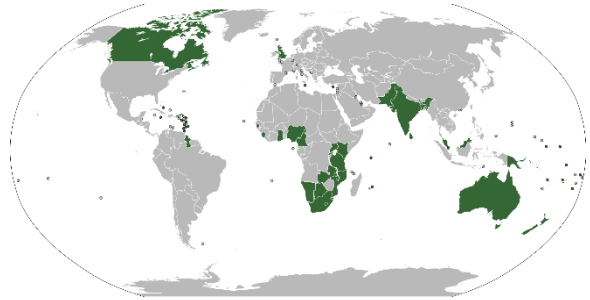
B: Our World – Key Religious Celebrations (these are only some of them)

Religion	Celebration
Buddhism	Vesak (Buddha Day), Magha Puja Day
Christianity	Easter, Christmas
Hinduism	Diwali, Holi
Islam	Eid Al-Fitr, Eid Al-Adha
Judaism	Rosh Hashanah, Hannukah
Sikhism	Vaisakhi, Diwali

D: Academic Vocabulary

Word	Definition
acquire	Buy or obtain; learn or develop a skill
confront	Face up to and deal with a problem; come face to face with someone in an argumentative way
deceitful	Guilty of misleading others
eligible	Having the right to do or get something; meeting the right conditions
impartial	Treating all people or rivals equally
inhabitants	A person or animal that lives in or occupies a place
legendary	Very well known; described in old stories (legends)
omit	Leave out or exclude someone or something
punctual	Happening or doing something at the agreed or proper time
signify	Be a sign or an indication of something

A world map showing Commonwealth countries



YEAR 8
HOMEWORK
KNOWLEDGE ORGANISER
Summer Term 1

ENGLISH

Stories of Survival

A: WRITING SKILLS

SPAG – Applying spelling, punctuation and grammar effectively. Capital letters, full stops, commas & apostrophes.
Challenge: colons, semi-colons, parenthesis, exclamation marks, hyphens.
Sentence structures – applying a variety for effect – simple, compound and complex. Using time and sequencing connectives.
Paragraphing.
Persuasion – Using a range of techniques effectively and suitably (AFOREST) .

B: Sample sentence openers

- Many people perceive this as a fractious issue.
- Picture the scene:
- Now, let's be clear, the real issue here is....
- Yes, I can see why some people may think....
- The solution is simple:

C: Synonyms

Good: Outstanding, exceptional, remarkable
Bad: Abhorrent, abysmal, appalling
Boring: Tedious, lacklustre, monotonous
Angry: Irritated, exasperated, vexed
Pointless: Futile, inane, absurd

D: Vocabulary	Definition
Convey	To communicate a message, information, idea.
Colloquial	Language used in ordinary and familiar conversations. Not formal.
Precise	Exact and accurate
Concise	Giving a lot of information clearly and in a few words.
Criticism	Disapproval
Courteous	Polite and respectful
Facilities	Places, amenities or things that are provided for a particular purpose
Provision	Providing or supplying something.
Reiterate	To say something a number of times.
Elaborate	To develop or present something in further detail.
Proposal	A plan or suggestion
Insufficient	Not enough
Inadequate	Not good enough
Negligible	Small and unimportant.
Recipient	Someone who receives something.

E: Terminology	Definition
Purpose	What a text trying to do. Is it informative, advisory or persuasive?
Audience	Who a text is aimed at
Format	The type of text (eg: letter, speech, report etc)
Tone	The way a piece of text sounds e.g. sarcastic etc. The mood or atmosphere in the writing.
Hyperbole	Use of exaggerated terms for emphasis.
Anecdote	A short story using examples to support ideas.
Directives	Using you, we or us.
Repetition	When words or phrases are used more than once in texts.
Statistics	Facts and figures
Authoritative	Commanding and self-confident. Likely to be respected and obeyed.
Superlative	Declaring something the best i.e. the ugliest, the most precious.
Passive voice	When the subject of the sentence has an action done to it but something or someone else. E.g. the dog was being washed by the girl.

YEAR 8
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Summer Term 1

ENGLISH

Romeo and Juliet

A: Historical Context

Queen Elizabeth I – She was queen while Shakespeare was writing, and supported him. Elizabeth I made Protestantism the official religion of England, which angered many Catholics, and led to much conflict. Shakespeare may be referencing this in 'Romeo and Juliet', with the two warring families.
Patriarchy – patriarchal societies are ones where men are dominant, and have control over women e.g. by choosing who they would marry.
Nurses – employed by wealthy families to feed and care for their children.
Fate - the belief that your life is mapped out for you, or 'written in the stars'. Many Elizabethans believed God decided your fate, and that astrology could help you identify your course in life.

B: A Short Summary of the Story

- Romeo and Juliet fall in love at a party. But they come from families which hate each other. Helped by Friar Laurence, they marry in secret.
- Before their wedding night Romeo kills Juliet's cousin, Tybalt, in a duel, and in the morning he is forced to leave her. If he ever returns to the city, he will be put to death.
- Juliet's parents tell her she must marry Paris. Her parents do not know she is already married. She refuses at first, but later agrees because she plans to fake her death and escape to be with Romeo forever; again with the help of Friar Laurence.
- Friar Laurence gives Juliet a sleeping potion. She appears to be dead. However, Romeo does not know about the plan, visits her grave, thinks she is dead, and kills himself. When Juliet finally wakes up, she discovers that Romeo is dead and then kills herself.

C: Key Characters

Romeo – age unknown, anywhere between 16 and 21
Benvolio – Romeo's cousin
Lord and Lady Montague – Romeo's parents.
Abraham - servant
Balthasar – servant
Juliet –age 13 in the play
Tybalt – Juliet's cousin
Lord and Lady Capulet – Juliet's parents
Gregory – servant
Sampson – servant
Rosaline – a nun, Romeo is in love with her before Juliet.
Prince Escalus – ruler of Verona
Mercutio – related to Prince, friends with Romeo
Count Paris – related to Prince, betrothed to Juliet
Friar Lawrence – friends with Romeo
The Nurse – works for the Capulets, Juliet's confidante

D: Techniques and Terminology

Prologue – sets up the story and foreshadows events.
Foreshadowing – when an author drops hints about what will happen through language or symbolism.
Dramatic irony – when an audience knows something the characters do not. Symbolism – when an image represents an idea, e.g. light symbolises happiness, flowers symbolise youth etc.
Double meaning – when a word can be read to mean two things e.g. 'grave'= serious or grave stone.
Personification – when an object is given human qualities
Rhyming Couplets – two lines next to each other that rhyme with each other, often used for dramatic impact.

E: Learn the Spellings and Definitions

1. Melancholic – someone who is prone to moping and being depressed.
2. Quixotic – extremely idealistic: unrealistic and impractical.
3. Ardent – enthusiastic and passionate.
4. Appeasing- someone who tries to pacify others.
5. Sincere - honest and genuine.
6. Stalwart – loyal and reliable.
7. Anarchic – unruly and chaotic.
8. Impulsive – someone who acts on a whim, without thinking.
9. Precocious – someone who 'shows off' their intelligence arrogantly.
10. Idealistic – someone who believes whole-heartedly in something, even if it is unrealistic.
11. Ingenuous – innocent, naïve and unworldly.
12. Resolute – someone who has made their mind up and whose opinion cannot be changed.
13. Volatile – someone who could explode at any moment.
14. Tempestuous –someone who is unpredictable and has many conflicting emotions.
15. Righteous – someone who believes what they are doing is morally justifiable.
16. Maternal – motherly.
17. Submissive – will bend to a dominant authority and 'do what they are told'
18. Uncouth – uncivilised and uncultured, potentially vulgar.

YEAR 8
HOMEWORK
KNOWLEDGE ORGANISER
Summer Term 2

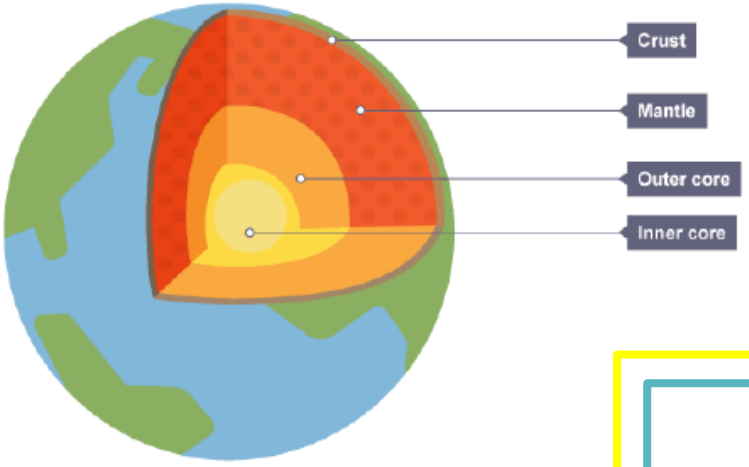
SCIENCE - CHEMISTRY

Earth Rocks

A: The Earth's structure

The Earth is almost a sphere. These are its main layers, starting with the outermost:

- Crust (relatively thin and rocky)
- Mantle (has the properties of a solid, but can flow very slowly)
- Core (made from nickel and iron)



B: Rocks, minerals and grains

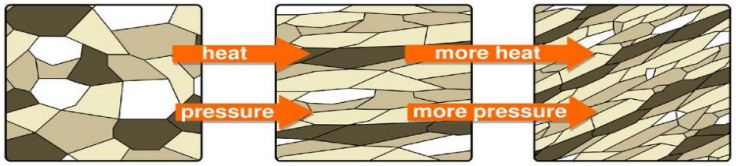
Minerals have a set chemical composition.

Rocks do not have a set composition and are often made up of several different minerals and other materials. For example, the rock granite is made up of the minerals quartz, feldspar and biotite.

Minerals are found in the Earth's crust. Minerals that humans use are usually extracted from mines.

Sedimentary rocks are turned into metamorphic rocks by the extreme pressures and temperatures deep within the Earth.

These conditions change the structure of the rocks so that new layers are formed.



Mixture of grains in structure | Heat and pressure compress grains | Grains form orderly layers

C: Types of rock

Igneous rocks
Igneous rocks are formed from molten rock that has cooled and solidified.

Sedimentary rocks
Sedimentary rocks are formed from the broken remains of other rocks that become joined together.

Metamorphic rocks
Metamorphic rocks are formed from other rocks that are changed because of heat or pressure. They are not made from molten rock – rocks that do melt form igneous rocks instead.

IGNEOUS

Granite

SEDIMENTARY

METAMORPHIC

Marble

H: Erosion

Erosion is the process by which rocks and soil are transported from one location to another.

The material moved by erosion is called **sediment**

D: Weathering

The breakdown of rocks into smaller fragments is called **weathering**. Eventually the fragments become soil.

E: What is a fosil?

A fossil is an **remains**, **traces** or **imprints** of a life that has been preserved at some time in the geological past. Fossils must be at least ten thousand years old. Only a very small number of **organisms** get fossilised.

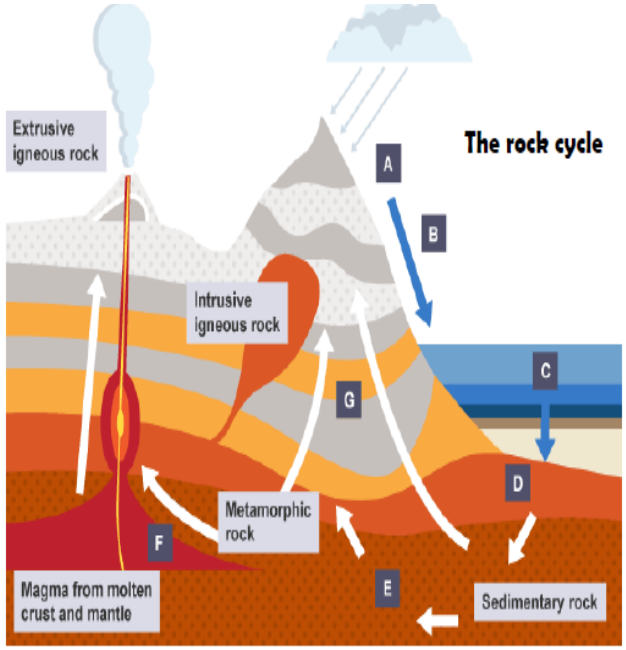
MOST fossils are formed in sedimentary rock.

When the organism dies, it begins to decompose.

If it is buried quickly by fine sediment, it can leave an imprint before complete decomposition.

The fine sediment can seal the imprint before the sediment turns to rock.

F: The Rock cycle



A Weathering and erosion
B Transportation and deposition
C Sedimentation
D Compaction and cementation
E Burial, high temperatures and pressures
F Melting
G Slow uplift to the surface

Letter	Description
A	There are 3 types of weathering (biological, physical and chemical).
B	Rivers and streams transport rock particles to other places.
C	Rock particles form layers.
D	This presses the layers and sticks the particles together, forming sedimentary rock.
E	Rocks underground and are changed into metamorphic rock.
F	Rocks melt and turn into magma. When it cools it forms igneous rocks.
G	Areas of rock can move slowly upwards, this is called uplift.

YEAR 8
HOMEWORK
KNOWLEDGE ORGANISER
Summer Term 2

SCIENCE – Chemistry

Introduction to Lab Skills

A: WHAT IS A HYPOTHESIS?

Hypothesis

- The hypothesis is a statement of what the scientist expects to happen in the experiment.
- It is NOT a guess. A hypothesis is based on experience and background research.

INDEPENDENT VARIABLE

What I CHANGE

DEPENDENT VARIABLE

What I OBSERVE

CONTROLLED VARIABLE

What I KEEP THE SAME

What does "fair testing" mean?

A fair test is one where only one variable is changed, while all other variables are controlled (kept the same)

ACCURACY VERSUS PRECISION

Accuracy indicates how close a measurement is to the correct or accepted value	Precision indicates the closeness of two or more measurements to each other
Your measurement will be close to the standard measurement	Your measurement will be similar every time you measure
Accuracy is not dependent on precision	Precision is not dependent on accuracy

B: DEFINE CONTINUOUS AND DISCRETE DATA

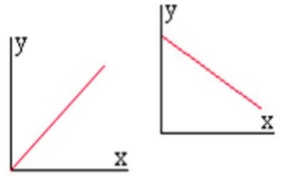
Numerical data can be **discrete** or **continuous**.

Discrete data can only take certain values.

For example, shoe sizes,
the number of children in a class,
the number of sweets in a packet.

Continuous data comes from measuring and can take any value within a given range.

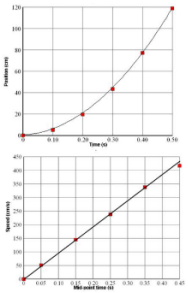
For example, the weight of a banana,
the time it takes for pupils to get to school,
the height of 13 year-olds.

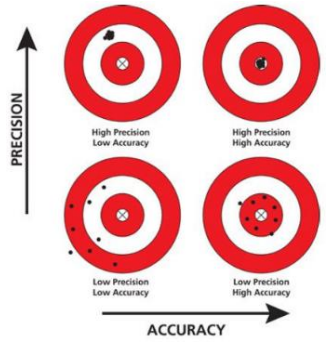


Relationship is Directly Proportional (both values increase or decrease at the same rate – line is straight)

The lines on scientific graphs are usually drawn either **straight** or **curved**. These "smoothed" lines do not have to touch all the data points, but they should at least get close to most of them. They are called **best-fit lines**.

In general, scientific graphs are not drawn in connect-the-dot fashion.





Repeatable-must be able to repeat experiments and get the same results

What does the word **evaluate** mean?

- Investigating the strengths and weaknesses of something
- Having a reasoned argument with yourself, and drawing conclusions at the end.
- Using examples to prove your points.

MEASUREMENTS

There are different types of measurements that can be made in the laboratory like mass, time, volume, and length.

These measurements can be made using either the metric system or the English system. The metric system is based on increments of 10.

D: SCALING FACTORS?

Powers, Indices and Prefixes

- In physics, many of the quantities used are very large or very small.
- When writing a number, we use powers and indices to show how many times the original or base number will be multiplied.
- A positive index will multiply by the power, and a negative index will divide by the power.
- Some indices have commonly used prefixes that provide a quick way of writing small or large values.

Power	Full Value	Prefix	Symbol
$x10^{12}$	1 000 000 000 000	tera	T
$x10^{9}$	1 000 000 000	giga	G
$x10^{6}$	1 000 000	mega	M
$x10^{3}$	1 000	kilo	k
$x10^{-2}$	0.01	centi	c
$x10^{-3}$	0.001	milli	m
$x10^{-6}$	0.000 001	micro	μ
$x10^{-9}$	0.000 000 001	nano	n
$x10^{-12}$	0.000 000 000 001	pico	p

For example: one million watts (1 000 000W) = $1x10^{6}$ watts = one megawatt (1MW)

C: SI UNITS?

Base Quantity	Base Unit	Symbol
Length	Metre	m
Mass	Kilogram	Kg
Time	Second	S
Current	Ampere	A

SI unit of acceleration = m/s/s or m/s^2

Velocity	m/s, km/hr mph	v

Force	(F)	Newton	(N)
Pressure	(p)	Pascal	(Pa)
Energy	(E)	Joule	(J)
Work	(W)	Joule	(J)
Power	(P)	Watt	(w)
Frequency	(f)	Hertz	(Hz)

The SI unit of charge is the coulomb (C)

E: HAZARD AND RISK?

Risk Assessment

Hazard identification
What is the hazard?

Probability of risk
How likely is the event?

Consequences of risk
What is the likely damage?

HAZARD
Anything that can cause harm *(eg. a chemical, electricity, ladders, etc)*

RISK
How great the chance that someone will be harmed by the hazard

A HAZARD is something that has the potential to harm you

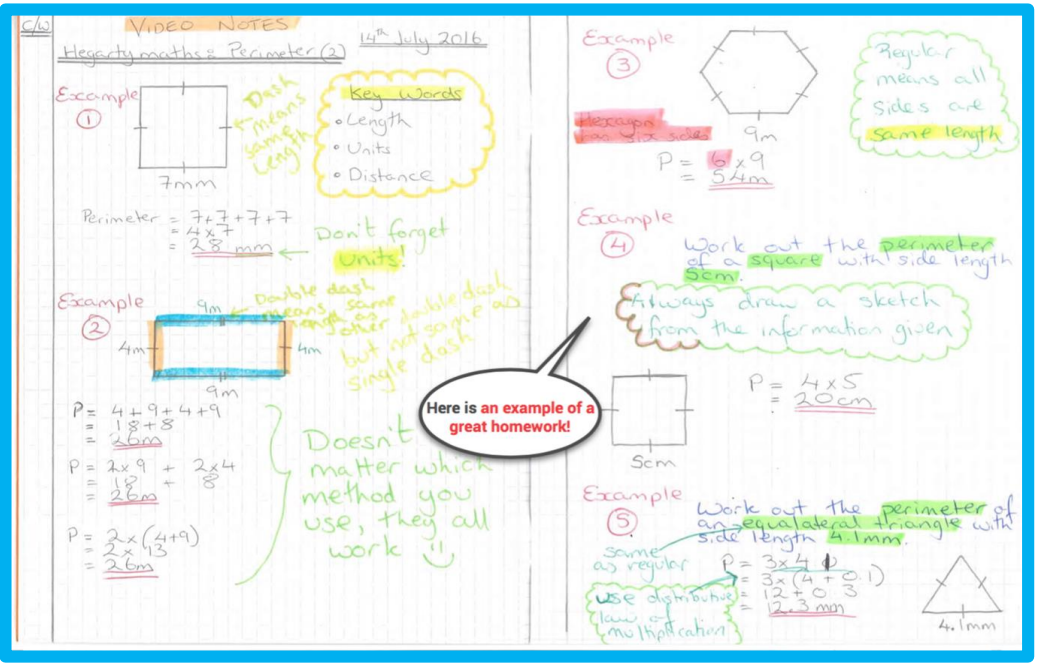
RISK is the likelihood of a hazard causing harm

YEAR 8
HOMEWORK
KNOWLEDGE ORGANISER
Summer Term 2

MATHS
Hegarty Maths

Our weekly homework routines...

1	You will always be set at least one homework a week by your teacher.
2	Your teacher will choose the lesson they want you to learn and will pick it so that you are revising an important maths topic for revision. As such, you have already probably covered it in class but might have forgotten so your homework is to revise as, to be a great learner, you need to revise all the time (not just before tests!).
3	You need to spend **between 30 minutes and 1 hour** on your homework as this shows effort and commitment and will ensure that you do quality homework.
4	You will always be expected to i) watch the video + take notes; ii) write down your quiz workings neatly; iii) mark your own work, make corrections and write down your score at the end.
5	Homework will be checked by your teacher in class once a week during your starter. You will be expected to bring your homework book to class and leave it open on the desk for your teacher to inspect.



10 things a student should do when completing HegartyMaths homework

	Student checklist for good HegartyMaths homework	✓ or ✗
1	I always write the date, title, clip number and H/W for all my tasks.	
2	I always watch the video before attempting the questions.	
3	I always take full notes of all the examples modelled in the video.	
4	I copy every question that I attempt in my book.	
5	I show all my workings for every question in the quiz that I do.	
6	I try to model my work the way I was shown in the video by Mr Hegarty.	
7	I use a pencil and ruler for all diagrams.	
8	I mark my work correct/incorrect as I go.	
9	I write down corrections when HegartyMaths tells me the correct answer.	
10	I write down my score at the end of quiz .	

5 things you should do when you want to do extra work

	Action	✓ or ✗
1	I go back to my donut and pick lessons that are **red** (<70%) to redo them to make them **amber** (>70%) or **green** (100%).	
2	I go back to my donut and pick lessons that are **amber** (>70%) to redo them to make them **green** (100%).	
3	When working on lessons that are **red** or **amber** and I cannot make them **100%,** I rewatch the video and look at the building blocks which may help me.	
4	I complete a **Fix-Up-5** where HegartyMaths gives me 5 practice questions on parts of maths that I might be weak on.	
5	If my teacher has given me a revision list of clips on HegartyMaths, then I pick a topic on that list and complete a homework the normal way by myself.	

You will **always** produce a set of well-written notes of all the modelled examples in the video as we want you to be an expert note-taker and to revise before you try the quiz. **If you know the material, you still have to take the notes as sometimes you have to revise topics you already know and it's good for your long-term maths memory.**

YEAR 8
HOMEWORK
KNOWLEDGE ORGANISER
Summer Term 2

SPANISH

Future

The future tense is used to talk about **what will happen** in the future.
It can also be used to talk about hopes and plans.
Iré a Londres – *I will go to London.*
Estudiaré en la universidad – *I will study at university.*

To form the future, take the infinitive and add the following endings:

volver – *to return*
volver**é** – *I will return*
volver**ás** – *you (s) will return*
volver**á** – *he/she/you (formal) will return*
volver**emos** – *we will return*
volver**éis** – *you (pl) will return*
volver**án** – *they/you (pl formal) will return*

1

The imperative

4

Remember!
You use this to give instructions, or to tell people what to do.
¡Cierra la puerta! – *Close the door!*
No enciendas la luz – *Don't turn the light on.*

	positive		negative	
	tú	**vosotros**	**tú**	**vosotros**
-ar verbs	ahorr**a** – *save*	ahorr**ad** – *save*	**no** ahorr**es** – *don't save*	**no** ahorr**éis** – *don't save*
-er verbs	com**e** – *eat*	com**ed** – *eat*	**no** com**as** – *don't eat*	**no** com**áis** – *don't eat*
-ir verbs	escrib**e** – *write*	escrib**id** – *write*	**no** escrib**as** – *don't write*	**no** escrib**áis** – *don't write*

Me gustaría estudiar música – *I would like to study music.*
Preferiría viajar por el mundo – *I would like to travel the world.*

It is formed like the future, with the infinitive, but with different endings:
preferir – *to prefer*
preferir**ía** – *I would prefer*
preferir**ías** – *you (s) would prefer*
preferir**ía** – *he/she/you (formal) would prefer*

3

Future verbs with irregular stems:
decir – diré – *I will say*
haber – habrá – *there will be*
hacer – haré – *I will do*
poder – podré – *I will be able*
poner – pondré – *I will put*
querer – querré – *I will want*
salir – saldré – *I will go out*
tener – tendré – *I will have*
venir – vendré – *I will come*
ver – veré – *I will see*

2

KO QUIZLET LINK

https://quizlet.com/_6rvhiw

En el futuro – *In the future*	trabajaré como – *I will work as*		piloto – *a pilot.*
	espero – *I hope* me gustaría – *I would like*	trabajar como – *to work as*	
	espero – *I hope* quiero – *I want*	ser – *to be*	

5

***Soler* + infinitive**
If you are talking about the past, then you will need the imperfect tense: *I* ***used to*** *go to the cinema* – **Solía** ir al cine.

The following impersonal expressions can be used to say what can or must be done.
se puede – *we can*
se debe – *we must* + infinitive
hay que – *we have to*

Se puede reciclar – *We can recycle.*

tener que – *to have to*
This one is an ordinary verb that changes:
Tengo que apagar las luces – *I have to turn the lights out.*
Tienes que ahorrar agua – *You have to save water.*

YEAR 8
HOMEWORK
KNOWLEDGE ORGANISER
Summer Term 2

HISTORY

The Industrial Revolution: 1750-1900

A: The start of the Revolution

The Industrial Revolution was a change that took place from 1750. This is when industry (businesses and jobs) moved from being mainly rural (in the countryside, where people were farmers) to being urban (in the cities, where people worked in factories).

This happened because the **cloth industry** in Britain was becoming more successful. This meant that farms would have pasture land for sheep, and they would sell the wool from the sheep to make clothes.

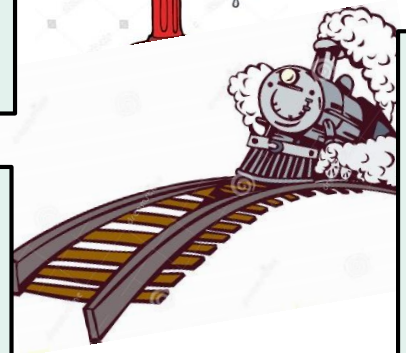
In 1765, a Lancashire inventor called James Hargreaves created the **spinning jenny.** This was a machine that used mechanics to produce cloth quicker than workers (known as 'spinners') could produce by hand. Entrepreneurs across Lancashire and Derbyshire started to invest in this new machine. They put all the machines into a single, large building and employed local workers to operate the machines – the first factories, and with them the Industrial Revolution, were born!

B: The growth of cities

These new factories proved highly successful and therefore needed to employ more workers. This encouraged people to leave their traditional farming jobs and move to factory towns. This meant many towns suddenly **boomed** in population and became industrial cities – this includes Manchester, Leeds and our very own Nottingham!

Soon, new types of industrial cities were booming, such as Sheffield, which specialised in the production of steel.

Britain also established a national network of rail between the cities. This meant that raw materials could move to the factories so they could be turned into goods. There was also many new houses built in these cities to accommodate the new workers. These were often built as 'terraced housing' and sometimes they were 'back to back', meaning they were small and cramped.



C: Living Conditions

Many poor families moved to the cities in search of work and a better quality of life. However, when people arrived, they realised that living conditions were very poor. Factory owners would build terraced houses for their workers, but these varied in quality, with some people living in slum conditions. Common problems included poor ventilation (access to fresh air), damp and mould, vermin, and overcrowding. Sanitation (toilet and water access) was also very poor. Everyone had to share a privy (toilet) and a water pump, sometimes with up to 20 households having to share. The cities did not have proper sewage systems, so often relied on cess-pits, which were large holes dug into the ground to put human waste.

D: Disease

As a result of the poor living conditions, disease was common in industrial cities. The worst disease was **cholera**, this was a disease that spread due to contaminated water supplies and poor sanitation. There were many bad outbreaks in the 1830s, 1840s, and 1850s. Scientists could not find a cure to this disease because they believed it was spread by '**miasma**' – or poisoned air.

However, in 1855, a doctor called John Snow investigated the problem of cholera in the Soho region of London. He mapped out the number of people who had died of the disease and found that they had all drank from the same water pump on Broad Street. He recommended that the local authorities remove the handle of the pump, and once they had done this, the outbreak stopped. This proved the disease was spread by water. It resulted in the building of London's sewer system, which is still used today. There was also a Public Health Act passed in 1875, which meant that local councils were responsible for sanitation in their towns. This improved conditions for the poor.

YEAR 8
HOMEWORK
KNOWLEDGE ORGANISER
Summer Term 2

GEOGRAPHY

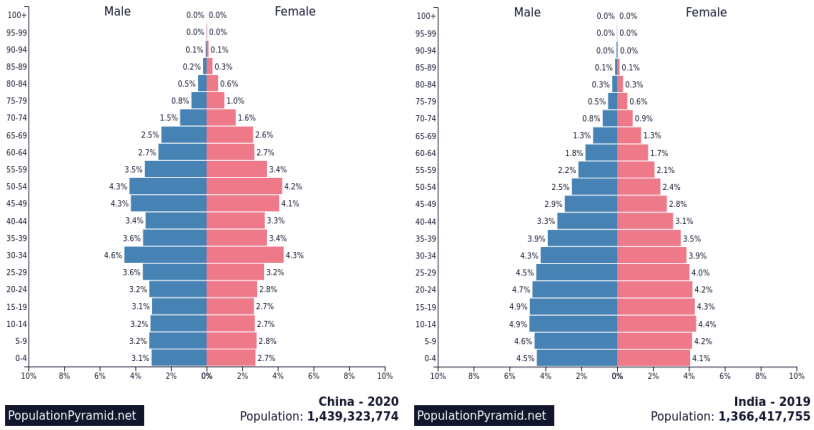
Asia

Box 1 – Population Density of Asia

- **Definition of Population Density**
  Population density is the number of people per unit of area, usually quoted per square kilometre
- **The current population of Asia is** 4,635,472,233
- **Asia's population is equivalent to** 59.76% **of** the total world population**.**
- **The** population density **in Asia is 150 per Km2**
- **50.9 %** of the population live in urban areas (cities)
- The **median age** in Asia is **32.0 years old**.

Box 2 – Population Pyramids

Compare and contrast the two population pyramids.



Box 3 – Impacts of Overpopulation

- **Exhaustion of natural resources**: such as food, water, fuels
- **Environmental degradation**: rivers and other ecosystems can end up being polluted
- **Rising unemployment**: Too many people in an area can lead to a lack of jobs
- **Rising living costs**: this links to resources, electricity and clean running water can become expensive if too many people are using these services
- **Technological advances**: with challenges, humans adapt by using technology such as solar power and public transport to help improve the quality of life.
- **Depopulation of rural areas**: people leave the countryside for a better quality of life in the cities.

Box 4 – China's One Child Policy

- The one-child policy was a program in China that was implemented nationwide by the **Chinese government in 1980** in order to limit most Chinese families to one child each. The policy was enacted to **address the growth rate of the country's population,** which the government viewed as **being too rapid.**
- In **November 2013,** following the meeting of the Central Committee of the Chinese Communist Party, **China announced the decision to relax the one-child policy**. Under the new policy, **families could have two children if one parent**, rather than both parents, **was an only child**.

Box 5 – Impacts of China's One Child Policy

- The **overall rate of natural increase** (the difference between the birth rate and the death rate) **declined**.
- The Chinese government estimated that **some 400 million births were prevented by the policy**.
- As sons were generally preferred over daughters, the overall sex ratio in China became skewed toward males. **In 2016 there were 33.59 million more men than women**.

Box 6 – River Ganges

- The River Ganges, flows **2,525 kilometres** from the **Himalayan mountains to the Bay of Bengal**
- The Ganges River begins in the **Himalayas' Gangotri Glacier.**
- The Ganges Basin with its **fertile soil** is important **to** farming in India and Bangladesh.
- The Ganges river basin has the highest population of any **river basin** in the world. **It contains over 400 million people.**

YEAR 8
HOMEWORK
KNOWLEDGE ORGANISER
Summer Term 2

PHILOSOPHY AND ETHICS

Sacred Spaces

A: Key terms and definitions

Key Term	Definition
Congregation	Group of people gathered together for worship
Diverse	A word used to describe a variety of races, religions and cultures in a community.
Inter-faith Dialogue	A situation where different religious groups meet to discuss important issues in their community.
Multi-faith centre	A place of worship designed for the worship of more than one religion in the same space.
Tolerance	A willingness to accept differences and celebrate similarities of different faiths.
Unity	The state of being united or joined as a whole.
Worship	A deep adoration of love of something often including a religious ceremony or service

Derby Multi-faith Centre

B: Key Information

Christianity
Follower: Christian
Symbol: Cross
Origin: Israel
Scripture: Bible
Sacred Building: Church, Chapel and Cathedral
Important People: Jesus

Islam
Follower: Muslim
Symbol: The Crescent Moon and Star
Origin: Saudi Arabia
Scripture: Qur'an
Sacred Building: Mosque
Important People: Prophet Muhammad (pbuh) and Ibrahim

Judaism
Follower: Jew
Symbol: Star of David
Origin: Israel
Scripture: Torah
Sacred Building: Synagogue
Important People: Abraham and Moses

Sikhism
Follower: Sikh
Symbol: The Khanda
Origin: Northern India (The Punjab)
Scripture: Guru Granth Sahib
Sacred Building: Gurdwara
Important People: Guru Nanak and other Guru's

Hinduism
Follower: Hindu
Symbol: Aum
Origin: India
Scripture: The Vedas
Sacred Building: Mandir (Hindu Temple)
Important People: No founder, teacher or prophets

Buddhism
Follower: Buddhist
Symbol: The Wheel of Life
Origin: North East India
Scripture: Tripitaka
Sacred Building: Stupa
Important People: Siddhartha Gautama (Buddha)

You will need to use this knowledge organiser along side the task sheet this half term.

YEAR 8
HOMEWORK
KNOWLEDGE ORGANISER
Summer Term 2

COMPUTER SCIENCE

Digital Graphics

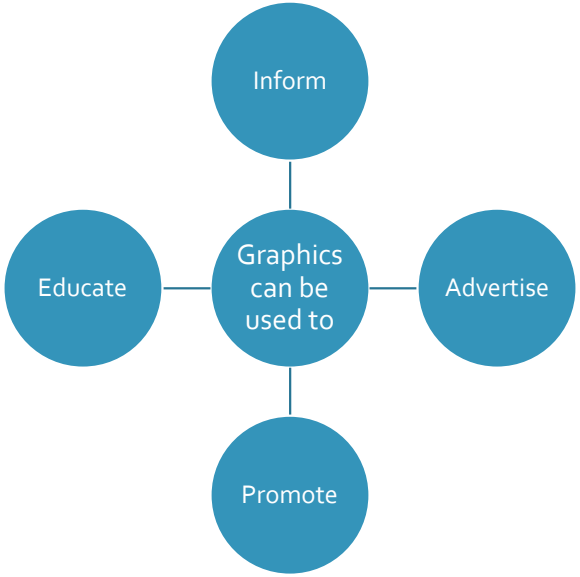
A: Definition of graphics

A graphic is an image or visual representation of an object. Therefore, computer graphics are simply images displayed on a computer screen. Graphics are often contrasted with text, which is comprised of characters, such as numbers and letters, rather than images.

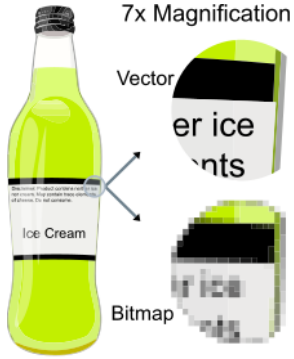
B: Examples of graphics

- Symbols
- Logos
- Brands
- Icons

C: What are graphics used for?



D: The main two types of graphics



BITMAP

- A bitmap is an image composed of pixels with a fixed resolution
- The number of pixels in an image determines the quality of the image (resolution)
- Resizing can result in pixelation
- A bitmap is also known as a raster graphic

VECTOR

- A vector is created by using a series of mathematically defined lines and curves rather than pixels
- When a vector is resized, the formula is recalculated
- The image will have the same quality—no matter what size
- Also called draw-type graphics

E: File types

F: What to think about when making a graphic

- What is it for?
- Who is the target audience?
- What are the images used for?
- Is the image appropriate/inappropriate?
- What type of text is used and text colour?
- Use of white space

G: The four main principles of graphic design

1. **Contrast** - Making a specific element stand out or draw attention to the eye
2. **Repetition** - is simply the process of repeating elements throughout a design
3. **Alignment** refers to lining up the top, bottom, sides, or middle of text or graphic elements on a page
4. **Proximity** is simply the process of ensuring related design elements are placed together

YEAR 8
HOMEWORK
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Summer Term 2

MUSIC

Covers

A: What is a Chord?

A chord is a combination of two or more notes.
The most popular way to play a chord is in a triad (3 notes)
A chord structure is used as a backing in music so that a composer can write in a harmonic way.
Most pop songs follow a similar pop structure.

Chord 1 – Chord 5 – Chord 6 – Chord 4

B: How to make a chord

Play a note, miss a note, play a note, miss a note, play a note.
Use the notes of the scale – 1 , 3 and 5

1	2	**3**	4	**5**	6	7	8
C	D	**E**	F	**G**	A	B	C

A C chord would be C E G.

C: Famous Song Writers

Freddie Mercury

- **Bohiemian Rhapsody**
- **Killer Queen**
- **Radio Gaga**
- **Under Pressure**

Adele

-All I Ask
-Someone Like You
-Rolling in the Deep
-Make You Feel My Love

Ed Sheeran

- Shape of You
- Castle on the Hill
- Thinking out Loud
- A Team

Beyonce

-Beautiful Liar
-Deja Vu
-Irreplacable
-Sweet Dreams

YEAR 8
HOMEWORK
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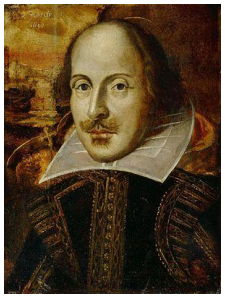
Summer Term 2

DRAMA

Shakespeare

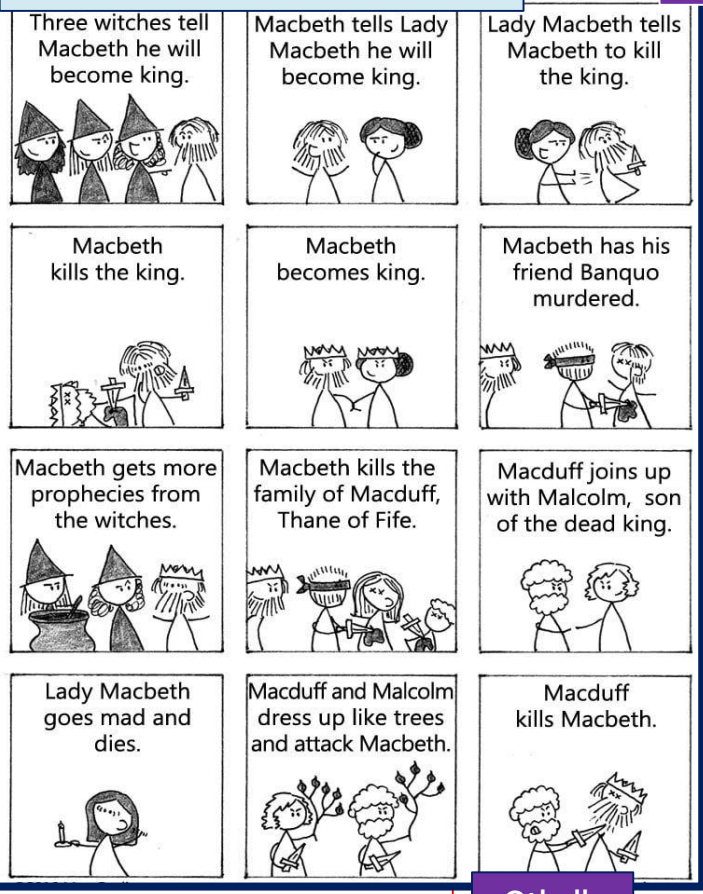
Section A: William Shakespeare

Occupation: Playwright, actor and poet
Born: April 26, 1564 baptized in Stratford-upon-Avon, England (likely born on April 23rd)
Died: April 23, 1616 in Stratford-upon-Avon, England
Best known for: Writing plays such as *Romeo and Juliet*, *Hamlet*, and *Macbeth*
Lord Chamberlain's Men:
William was part of an acting company called Lord Chamberlain's Men. An acting company in England at this time worked together to put on plays. There were typically around ten actors in a company including a lead actor, character actors, and some comedians. Young boys typically played women's roles as women were not allowed to act.

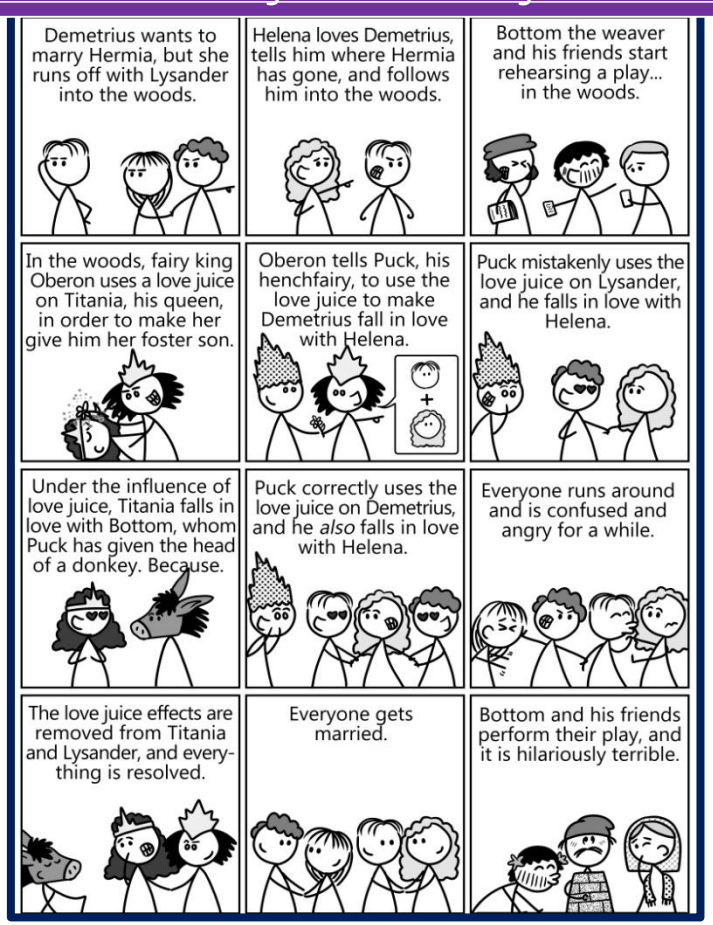


Early Plays:
Shakespeare wrote plays for the Lord Chamberlain's Men. He worked as an actor as well. His plays became very popular in London and soon the Lord Chamberlain's Men were one of the most popular acting companies in the city. Some of Shakespeare's early plays include *The Taming of the Shrew*, *Richard III*, *Romeo and Juliet*, and *A Midsummer Night's Dream*.

Section B: Plot overview - *Macbeth*



Section C Midsummer Night's Dream One Page Plot Summary



Othello

At the start of the play **Othello**, a general in the army, promotes Cassio to lieutenant. Iago tells **Othello** that his wife, Desdemona, is cheating on him with Cassio. Cassio is demoted and Iago is promoted to lieutenant. **Othello** kills Desdemona out of jealousy and is then told by Iago's wife, Emilia, that Iago plotted against him.

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HOMEWORK
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Summer Term 2

ART

Art Movements

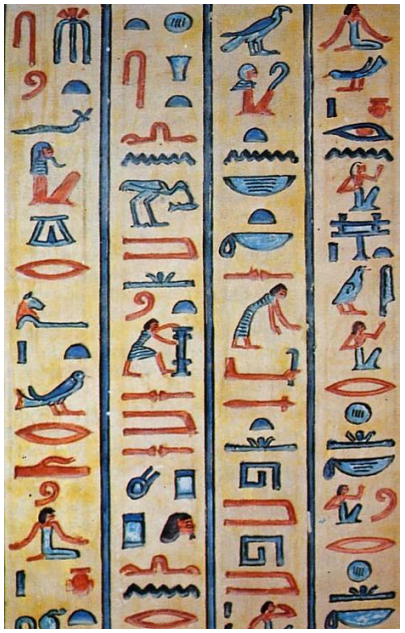
Part A: Art History timeline- memorise the different eras and the order that they occurred.

Part B: Learn specifics about Egyptian Art

Egyptian Art dates back to 5,000 BC. The Egyptians carved and painted images into walls of buildings and tombs.

Egyptians often used symbols called **hieroglyphs** within their work:

- The scarab beetle represents rebirth as the Egyptians were fascinated with them as they just appeared from a ball of dung.
- The Bast (A Cat) represents childbirth and the home.
- The Crescent Moon is Motherhood.
- The cobra represents protection.
- The Tet (A pillar) represents strength and stability.
- The Wadjet (an eye) also represents protection.
- Ankh (A cross with a loop at the top) represents 'Life'. It is commonly seen being held by gods, goddesses and pharaohs indicating that they are life givers or that they have control over life.



Part C: Learn more about Impressionism

Impressionism is a style of painting that focuses on the effects of light and atmosphere on colours and forms. **Impressionist** artists often used broken brush strokes rather than smooth and unnoticeable ones and also used many colours to paint scenes of every day life.

The movement was started in Paris, the artists who were part of the movement were seen as rebellious as they chose to paint 'en plein air' which means outside in French. The impressionists used a lot of movement and brushstrokes in their work, if you ever see an impressionist painting in an art gallery you will notice that up close all you can see is brushstrokes!

Famous artists that were part of this movement: Claude Monet, Pierre Renoir, Paul Cezanne, Henri Matisse, Mary Cassatt- these are just a few!

These artists then went on to influence the post impressionist such as Vincent Van Gogh and Pablo Picasso.

YEAR 8
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Summer Term 2

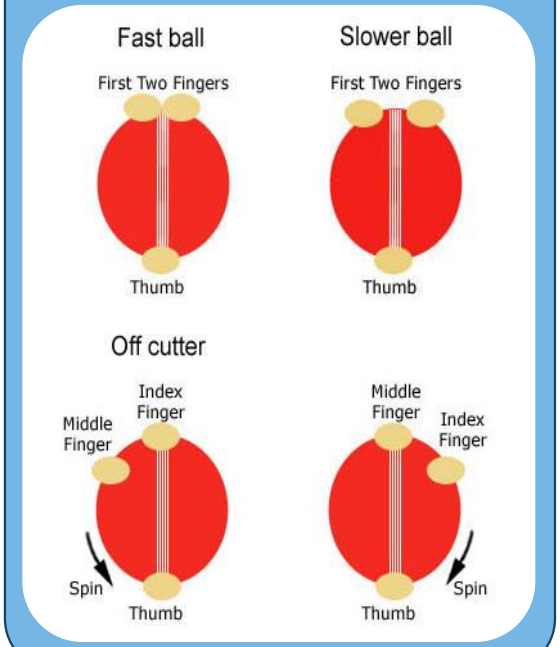
PE

Cricket

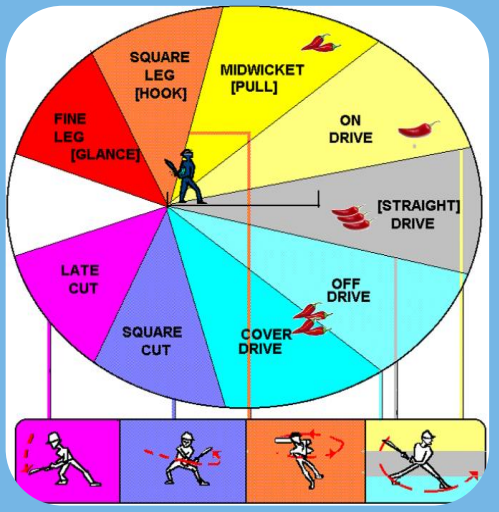
A: Key Terms

Bowler	The person who delivers the ball to the batsman	**No Ball**	When the bowler delivers an illegal ball to the batsman
Batter	The attacking player who strikes the bowled ball	**Wide**	When the bowler delivers a ball wide of the batsman
Wicket keeper	The player on the fielding team who stands behind the batters wicket attempting to catch the ball	**Out**	When the fielding team dismisses a batsman through a range of ways such as bowling or catching a struck ball.
Crease	A line in front of the wickets that the batsman has to stand behind	**Boundary**	The edge of the cricket field
Run	The name for points that are scored in cricket. You can score runs by running between the wickets or hitting the ball past the boundary	**Leg before wicket (LBW)**	When the batsman's body intercepts the ball when it was going to clearly hit the wickets. If a batter is called LBW they are out.
Backing up	A fielder who stands or runs to the position on the far side of the wicket as cover for any miss-throws at the wicket	**Six**	When the batter hits the ball past the boundary without it touching the floor first
Four	When the batter hits the ball past the boundary and it has touched the floor first		

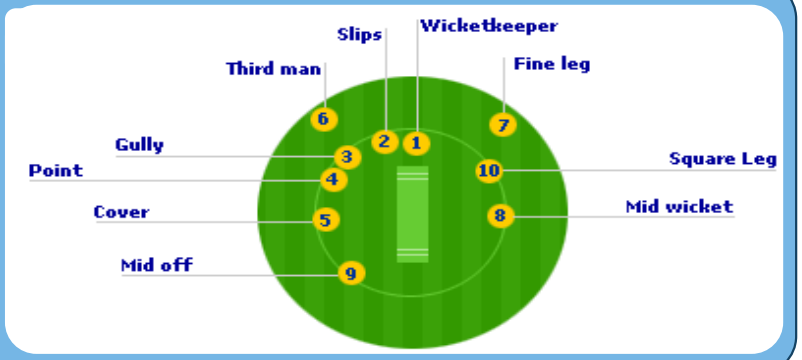
B: Bowling Grip



D: Shot Types



C: Fielding Positions



YEAR 8
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Summer Term 2

PE

Rounders

A: TEAMS

- Games are played between two teams. Each team has a maximum of 15 and a minimum of 6 players. No more than 9 players may be on the field at any one time
- If a mixed team-there should be no more than 5 male players
- List of players and substitutes should be submitted to the umpire prior to play
- Games are usually played over 2 innings
- Players once substituted may return during the game, but batters only in the position of their original number

B: BATTING

- Wait in the backward area well away from 4th post
- If out, wait in the backward area well away from 1st post
- Enter the batting square when called to do so by the Umpire
- You will have one good ball bowled to you
- Batter can use 2 hands
- You can take a no ball and score in the usual way , but once you reach 1st post you cannot return. You cannot be caught out or stumped out at 1st post on a no ball

C: NO BALLS

- Not smooth underarm action
- Ball is above head or below knee
- Ball bounces on way to you
- Wide or straight at body
- The bowler's foot is outside the square during the bowling action

D: RUNNING AROUND THE TRACK

- If you stop at a post you must keep contact with the post, with hand or bat. If you don't the fielding side can stump the following post to put you out
- You can run on to a post even if it has been previously stumped (you don 't score if the post immediately ahead has been stumped)
- When the bowler has the ball in the bowling square you cannot move on, but if you are between posts you can carry on to the next
- You cannot have two batters at a post. The Umpire will ask the first to run on when the second one makes contact
- At a post you do not have to move on for every ball bowled
- Once in contact with the post, you may turn the corner over the 2 metre line. If you turn the corner during a run and there is no contact with the post you will be deemed to have turned the corner and must run on
- You can move on as soon as the ball leaves the bowler 's hand , including no balls
- You must touch 4th post on getting home

E: SCORING

- 1 Rounder if ball is hit and 4th post is reached and touched before next ball is bowled
- 1 Rounder if ball is hit and 4th post is reached on a no ball (you can't be caught out on a no ball)
- ½ Rounder if 4th post reached without hitting the ball
- ½ Rounder if ball is hit and 2nd or 3rd post reached and touched before next ball is bowled - but if you continue this run and are put out before reaching 4th post, the score will be forfeited
- Penalty ½ rounder for an obstruction by a fielder
- Penalty ½ rounder for 2 consecutive no balls to same batter
- 1 Rounder for a backward hit if 4th post reached (you stay at 1st while ball is in the backward area)
- The team with the highest number of rounders wins
- Penalty ½ rounder to fielding team if waiting batters or batters out obstruct a fielder

F: OUT WHEN

- Caught
- Foot over front/back line of batting square before hitting or missing a ball
- Running inside post (unless obstructed)
- The post you are running to is stumped
- You overtake another batter on the track
- You obstruct (you have right of way on track only)
- Deliberately throw or drop bat
- Side out
- If ordered to make and maintain contact with the post and refuse to do so
- You lose contact with the post:
- When the bowler has the ball and is in the square (except on an over run)
- During the bowler's action but before they release the ball

YEAR 8
HOMEWORK
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Summer Term 2

DT
Graphics

Section A- Tools and Equipment

Image	Name	Uses
	Guillotine	To cut paper and cardboard
	Steel Rule	For accurate marking out and measuring to aid cutting out
	Craft Knife	For precise cutting of card or paper
	Cutting Mat	To protect work surfaces while using the craft knife
	Double sided tape	To hold models in place
	Glue gun	Adhesive to hold modelling materials in place

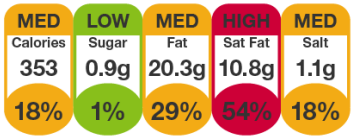
Section B- Labelling

Keep Britain Tidy

Bar code

Recycling

Fair Trade



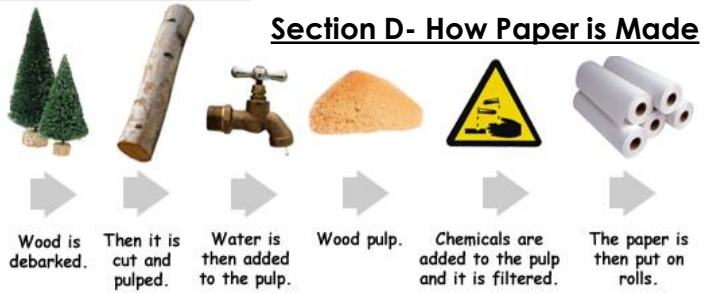
Nutritional information

Papers and boards are used for a variety of purposes from writing, drawing, packaging and model making. They are made from cellulose fibres found in wood or grasses which are all renewable.

Paper & boards can be plain, textured and can be laminated with other materials like plastic to make them waterproof.

Paper and board is measured is sizes from A0 to A6 and in weight by grams per square metres (gsm). Boards (card or cardboard) are always greater the 200gsm

Section D- How Paper is Made



Section C – Key Terms

Product Analysis	Examining products already available on the market.
Typography	The process of making written language legible and appealing.
Net	It is a flat two dimensional shape, which contains score lines and when is folded and glued together forms a three dimensional shape.
Isometric Drawing	An **isometric drawing** allows the designer to draw an object in three dimensions. All lines are drawn at 30 or 90 degrees

YEAR 8
HOMEWORK
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Summer Term 2

DT
Food

A: Key words

Aesthetics- making your final product attractive
Portion size- A recommended serving size for your age
Mis en place- Preparation time at the start on a practical
The Eatwell Guide- A healthy eating guide for a balanced diet

D: Eat Well Guide

B: Breakfast

Breakfast is a great way to give the body the refuelling it needs. Students who eat breakfast tend to eat healthier overall and are more likely to participate in physical activities — two great ways to help maintain a healthy weight.
Skipping breakfast can make students feel tired, restless, or irritable. In the morning, their bodies need to refuel for the day ahead after going without food for 8 to 12 hours during sleep. Their mood and energy can drop by midmorning if they don't eat at least a small morning meal.

E: Religious Diets

Islam

- Meat must be halal
- Do not eat pork
- Do not drink alcohol

Judaism

- Meat must be kosher
- Do not eat pork
- Dairy foods and meat must not be eaten together

Hinduism

- Many Hindu people are vegetarian
- Do not eat beef; the cow is seen as sacred

F: 8 government guidelines for a healthy diet

1. Base your meals on starchy foods.
2. Eat lots of fruit and vegetables.
3. Eat more fish- including a portion of oily fish each week.
4. Cut down on saturated fat and sugar.
5. Eat less salt- no more than 6g a day for adults.
6. Get active and be a healthy weight.
7. Don't get thirsty- drink plenty of water.
8. Don't skip breakfast.

C: Dietary Needs

People have different dietary needs that affect what they can and cannot eat.

Key words:
Allergy: an adverse reaction by the body to certain substances.
Intolerance: a condition that makes people avoid certain food because of the effects on their body.
Allergic reaction: the way someone responds to certain food. For example a rash, swelling and anaphylactic shock.

Vegan- Do not eat any animal products including meat, fish, eggs, cheese, milk and honey.

Vegetarian- Do not eat the meat of any animal but they do eat eggs, cheese, milk and honey.

Coeliac disease- An intolerance to gluten in food. Gluten is found in products such as bread, pasta and cakes.

YEAR 8
HOMEWORK
KNOWLEDGE ORGANISER
Summer Term 2

DT
Textiles

Section A – Man-made Fabrics

Cloth made from man made chemicals, usually different forms of plastic, such as Polyester, Nylon, Viscose and Lycra. All these are made from oil.

	Example	Properties	Uses
Polyester		Tough, strong, hard wearing, very versatile, holds colour well, non-absorbent so quick drying, machine washes well.	Clothing, fleece garments bedsheets, carpets, wadding, rope, threads, backpacks, umbrellas and sportswear
Polyamide (Nylon)		Good strength, hard wearing, non-absorbent, machine washes well, easily and frequently blended	Clothing, ropes and webbings, parachutes and sports material. Used as a tough thread on garments

Section C - Fabric Finishes

Once a fabric has been produced it often goes through a process to improve its appearance and/or properties. The main fabric finishes are:

Physical – machines are used to change the fabric Chemical – chemicals used to change the fabric

Biological – bacteria & enzymes used on regenerated fibres

Coating – where fabrics are coated on one side

Why are fabrics finished?

To enhance: colour, pattern, lustre, texture, softer, firmer, drape, care properties, stain resistance, waterproof, flammability, colour fastness.

Section D – Key Terms

Fast Fashion	A term used by fashion retailers to describe inexpensive designs that move quickly from the catwalk to stores to meet new trends.
Up Cycling	Up cycling is the process of converting old or discarded materials into something useful and often beautiful.
Design Brief	a written description of what a new product should do and who it is produced for.
Aesthetics	The way something looks e.g. making your final product attractive

Section B – Natural Fabrics

Cloth made from natural substances, such as; cotton and linen from plants, wool from goats and sheep and leather from cows' skin.

	Origins	Example	Properties	Uses
Cotton	Cotton comes from the fine hairs on the seed pod of a cotton plant.		Soft and strong, absorbent, cool to wear and easily washable. Cotton fabrics can be given a brushed finish to increase their thermal properties	Most clothing, especially shirts, underwear and denim can be made from cotton. Also used for towels and bedsheets
Wool	Wool comes from a sheep the coat is known as fleece.		Warm and absorbent, does not crease easily and has low flammability. Has natural resilience to water, but when wet does take a long time to dry. Is difficult to Launder as it can shrink (felt).	Jumpers, coats, suits and accessories worn for warmth. Specialist wools are very soft and expensive. Felt products and carpets
Silk	Silk comes from a cocoon of the silkworm.		Very soft and fine finish, gentle on skin, can feel cool in summer yet warm in winter, drapes well, absorbent, strong when dry (weaker when wet), tricky to wash, can crease easily and is usually expensive	Luxury clothing including nightwear and underwear, soft furnishings, bed sheets, silk paintings and wall hangings

YEAR 8
HOMEWORK
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Summer Term 2

DT

Plastics

Section A - Key tools and equipment

Image	Tool Name	Uses
	Vice	To hold material securely in place
	Wet and Dry Paper	To polish the material
	File	To remove material and scratches
	Coping Saw	To cut curves

Section B – Plastic sources

Natural
Natural sources of plastics include:
- **plants**
- **trees**
- **animals**
- **insects**

Synthetic
Synthetic plastics are chemically manufactured from:
- **crude oil**
- **coal**
- **natural gas**

Thermoplastics and thermoset plastics
Plastics are divided into thermoplastics and thermoset plastics.
Thermoplastics can be heated and shaped many times.
Thermoset plastics can only be heated and shaped once.

Section C - Problems of using plastics

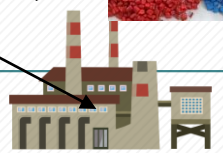
Plastic products have a long shelf life, however it also means that they are difficult to dispose of

- Because they do not rot or corrode they are difficult to dispose of
- If burnt they produce black choking gasses
- When molten they are sticky and can cause severe burns
- Thermoplastics can be recycled by melting them down and reforming their shape, but usefulness can be become limited with frequent heating
- Plastic production itself can be polluting
- PVC contains many nasty pollutants and it is one of the most difficult plastics to recycle.

Section E – Process of making plastic

1. Oil field
2. Oil tanker
3. Crude oil refinery and distillation
4. Distribution
5. Processing plant
6. Plastic granules
7. Factory
8. End product





Section D – Product analysis

A	**Aesthetics** What does it look like? e.g. colour, shape, style Is the product appealing to the client?
C	**Cost** How much does the product cost to buy? Is this a suitable price?
C	**Client** Who is the product aimed at? How is it suitable for the client?
E	**Environment** How has the product been made sustainable?
S	**Safety** Is the product safety to use during intended use? How has the product been made safe?
S	**Size** What size is the product (mm)? Is this a suitable size for the product?
F	**Function** What does the product do? Does it do the job well?
M	**Materials** What is the product made from? Is this a suitable material for the product? Why?

Section F – Material properties and uses

Name: Polymethyl methacrylate (Acrylic)

Properties	Uses
Stiff, hard but scratches easily, durable, brittle in small sections, good electrical insulator, machines and polishes well	Signs, covers of storage boxes, aircraft canopies and windows, covers for car lights, wash basins and baths

YEAR 8
HOMEWORK
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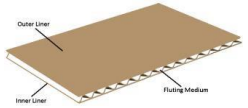
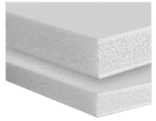
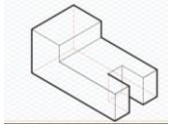
Paper and Boards

Types of Boards

Boards		Properties	Uses
Corrugated card		Strong lightweight material Made from two or more layers and has a fluted middle`	Packaging such as pizza boxes, large boxes that are used to protect heavy items
Duplex board		Thin board that often has one side printed. This board can also be coated with wax so it can be used with food and drink	Packaging
Foil lined board		Board covered with one side of aluminum foil making it a good insulator	Packaging such a takeaway and ready meal packaging.
Foam core board		Two pieces of board with a foam core to increase the thickness but retain its light weight property.	Model making such as architectural models.
Solid white board		High quality cardboard, smooth on both sides which makes it good for printing.	Book covers, cards and packaging.

Types of Paper

Type	Examples	Properties	Uses
Bleed proof		A smooth paper often used with water and marker pens which prevents bleed (e.g. when ink runs through the paper).	Presentation drawings
Cartridge paper		Good quality white paper with a slight texture.	Can be used for paints, markers and drawings
Grid		Paper printed with grids as guideline for drawing (e.g. isometric).	Quick model 3D drawings
Layout		Strong and lightweight	Initial sketching and tracing
Tracing		Fluted plastic – light, strong weather resistant material	Tracing copies of drawings

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SMART and Modern Materials

Section A -SMART Material Definition

What is a SMART material?

- *A 'smart material' can be defined as a material whose physical properties change in response to an input e.g. making them simpler or safer to use.*
- *A smart material reacts to external stimulus / changes in the environment without human intervention.*

Designers and manufacturers are utilising SMART materials in a whole range of mass consumer products which often makes them simpler or safer to use.

Section B -Types of SMART Materials

SMART Material	Property
Hydrochromic Ink	Changes colour with water
Thermochromic Pigment/ Paint	Changes colour with heat
Photochromic Material/ Dye	Changes colour with light
SMA - Shape Memory Alloy	Changes shape with heat
Phosphorescent Material	Glows in the dark
QTC – Quantum Tunnelling Composite	Soft Electrical Switch
Polymorph	A thermoplastic use for prototyping which can reheated and reused

Section D -Types of Modern Materials

Modern Material	Property
Graphene	Is stronger than steel, flexible, conducts heat and electricity
Titanium	Is strong compared to its weight and is anti-corrosive
Metal foams	Are strong, lightweight, electrically & thermally conductive
Nanomaterials	Nanomaterials are between 1and 100 nanometres.
Fibre Optics	A hair like strands of pure glass designed to transmit signals
Corn Starch Polymers	Compostable plastics which are biodegradable

Section C -Modern Materials Definition

What is a MODERN material?

- *Modern materials are technical materials which have been manufactured for function.*

A good designer will utilise and exploit these materials where appropriate and keep up-to-date with the latest technological developments.

Section E - Materials in more detail (all four boxes)

Polymorph is a clever thermoplastic which we can use for prototyping and is especially useful when it comes to modelling ergonomic grips. As it is thermoplastic you can reheat and reuse this material as many times as you wish.

Thermochromic paints can be added to any surface like these mugs or a textiles or card based product to react to heat.

Shape Memory Alloys change shape easily but always return to their original shape when they are heated. There are many applications such as dental braces and unbreakable spectacles.

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WORK
HARD
BE KIND