NOTTINGHAM
FREE SCHOOL

YEAR 7
HOMEWORK
KNOWLEDGE ORGANISER

Summer Term 2

Name: _____ Tutor Set: _____

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

Albert Einstein

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HEAD OF SCHOOL'S PAGE

General Knowledge

A: The UK – major castles in each country, there are over 4000 in total!

Castle	Location	Picture
Windsor, Berks England	Oldest occupied castle at 900 years old.	
Dover, Kent, England	Medieval and the largest castle in England.	
Caernarfon, Gwynedd, Wales	Medieval castle created by King Edward 1 on the banks of the river Seiont.	
Dunluce, County Antrim, N. Ireland	A now-ruined medieval castle, on the edge of a rocky outcrop it is accessed via a bridge connecting it to the mainland.	
Edinburgh	There has been a royal castle on the rock since at least the 12th century, and the site was a royal residence until 1633	

B: UK Facts – Bank Holidays

A bank holiday is a public holiday where all of the banks are closed and the majority of the working population is granted time off work or extra pay for working on these days, depending on their contract.
Bank holidays started in 1871 with four bank holidays that were extra to Good Friday and Christmas Day.

Current Bank Holidays in England	Original Bank Holiday
New Year's Day	
Good Friday	Yes
Easter Monday	Yes
Mayday (First Monday in May)	Yes
Spring Bank holiday (Last Monday in May)	
Late Summer Bank holiday (Last Monday in August)	
Christmas Day	Yes
Boxing Day	Yes

C: Academic Vocabulary: command words to help you learn

Word	Definition
adjacent	Next to something else
congruent	In agreement or harmony; identical shapes
contribute	Give something in order to help achieve or provide something
declare	Say something in a serious manner; state that you have something
extensive	Covering or affecting a large area
ferocious	Fierce, cruel, violent or extreme
oblivious	Not aware of or concerned about what is happening
reinforce	Strengthen or support something
suspense	A state or feeling of excited or anxious uncertainty about what may happen
variable	Able to be changed or adapted

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ENGLISH

Crime Fiction

A: Context

- Crime Fiction came to be recognised as a distinct literary genre, with specialist writers and a devoted readership, in the 19th century.
- Edgar Allan Poe created the first fictional detective as the centre of some of his short stories, for example: `The Murders in the Rue Morgue`.
- The introduction of the mass-produced paperback book in the late 1930s made detective- story writers wealthy

B: Themes

- Mystery
- Suspense
- Clues
- Intrigue
- Murder
- Duality
- Crime
- Underworld

C: Conventions of the genre

- To examine the role of narrative structure in engaging the reader e.g. red herrings and twists.
- To examine the role of narrative style – impersonal and detached.
- To explore and analyse devices used to intrigue and engage the reader.
- To explore and analyse devices used to create mystery and suspense.
- To explore and analyse the role of the villain and detective.
- To explore how the use of foreshadowing can be effective in this genre.

D: Terminology

Terminology	Definition	Example
Semantic field	A lexical set of semantically related items	Crime = murder, clues, detective.
Personification	The attribution of a personal nature or human characteristics to something non-human.	The room felt as if it was closing in on me, getting closer and closer by the minute.
Onomatopoeia	The formation of a word from a sound associated with what is named	Cuckoo, Bang, Pop, Sizzle
Plot twist	An unexpected event such as the death of a suspect that sends the plot in a new direction	The novel takes an unexpected turn and leads to the culprit being someone entirely different.
Third-person narrative	When the narrator is not a character in the story and relates the action using third-person pronouns, such as 'he' and 'she'	Without using "I" or "we": "he did that, they did something else."

E: Spellings and Definitions

Word	Definition	Example
Jeopardy	Hazard or risk of or exposure to loss, harm, death, or injury	For a moment, his life was in jeopardy.
Sleuths	A detective.	Fictional sleuth Sherlock Holmes is one of the leading detectives.
Amateurs	People who do something as a hobby, rather than as a paid job.	I am an amateur when it comes to sport.
Alluded	Suggest or call attention to indirectly – to hint at.	She alluded to the idea that the suspect could be Mr Jones.
Haggard	Looking exhausted and unwell, especially from fatigue, worry, or suffering.	She was pale and haggard looking.
All-comprehensive	Including or dealing with all or nearly all elements or aspects of something.	A comprehensive list of sources.
Torpor	A state of physical or mental inactivity; lethargy.	They veered between apathetic torpor and hysterical laughter.
Impending	Be about to happen – imminent.	My impending departure.
Blanched	Make white or pale by extracting colour.	The cold light blanched her face.
Red herrings	A clue or piece of information, which is intended to be misleading or distracting.	The book is fast-paced, exciting, and full of red herrings.

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ENGLISH

Shakespeare

A. Key terms for writing about Shakespeare

Tragedy - a play dealing with tragic events and having an unhappy ending, especially one concerning the downfall of the main character.

Protagonist - the leading character or one of the major characters in the play.

Antagonist - a person who actively opposes or is hostile to someone or something.

Prologue - a separate introductory section of a play.

Monologue - long speech by one actor in a play or film.

Soliloquy - an act of speaking one's thoughts aloud when by oneself or regardless of any hearers, especially by a character in a play.

Dramatic irony - a literary technique, originally used in Greek tragedy, by which the full significance of a character's words or actions is clear to the audience or reader although unknown to the character.

Foreshadowing - a warning or indication of (a future event).

Juxtaposition - two things being seen or placed Close together with contrasting effect.

Oxymoron - a figure of speech in which apparently contradictory terms appear in conjunction (e.g. *faith unfaithful kept him falsely true*).

Iambic pentameter- a line of verse with five metrical feet, each consisting of one short (or unstressed) syllable followed by one long (or stressed) syllable, for example *Two households, both alike in dignity*.

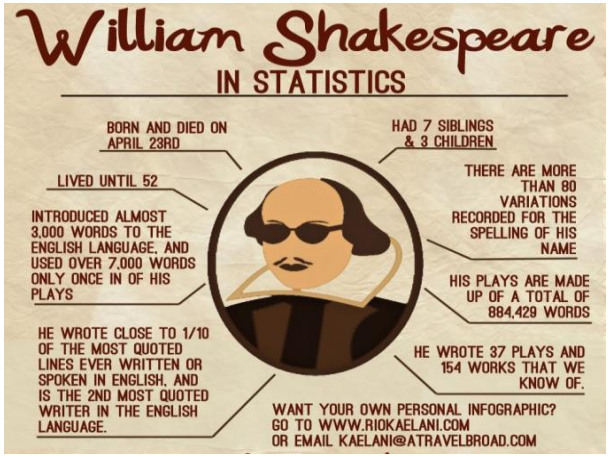
Prose - written or spoken language in its ordinary form, without metrical structure.

Metaphor - a figure of speech in which a word or phrase is applied to an object or action to which it is not literally applicable.

Simile - a figure of speech involving the comparison of one thing with another thing of a different kind, used to make a description more emphatic or vivid (e.g. *as brave as a lion*).

B. Key Knowledge - Where were Shakespeare's plays performed?

- The Globe Theatre was where many of Shakespeare's plays were performed.
- It was constructed in 1599, by the Burbage brothers.
- It was octagon shaped, roofless, with a stage and three galleries surrounding it. It was 80x80 ft. and held about 3,000 people.
- We do not know what the original Globe Theatre looked like.
- Shakespeare's Globe had to have special permission to have a thatched roof- there has been a law against thatched buildings in London since the Great Fire in 1666.



C. Key knowledge – key facts about the life and times of Shakespeare.

1.There is documentary proof that Shakespeare was baptised on 26th April 1564, and writers believe that, in keeping with the traditions of the time, he would have been baptised when he was three days old, meaning Shakespeare was probably born on April 23rd.

2.Shakespeare's parents were John and Mary Shakespeare (nee Arden). John came to Stratford from Snitterfield before 1532 as an apprentice glover and tanner of leathers.

3.Shakespeare had seven siblings: Joan (b 1558, only lived 2 months); Margaret (b 1562); Gilbert (b 1566); another Joan (b 1569); Anne (b 1571); Richard (b 1574) and Edmund (b 1580).

4.Shakespeare married his wife Anne Hathaway when he was 18. She was 26 and three months pregnant with Shakespeare's child when they married. Their first child Susanna was born six months after the wedding.

6. Shakespeare and Anne Hathaway had three children together – a son, Hamnet, who died in 1596, and two daughters, Susanna and Judith. His only granddaughter Elizabeth – daughter of Susanna – died childless in 1670.

D. Expert modelling – writing about Shakespeare.

Shakespeare was born on April 23rd in Stratford-upon-Avon, England. He is the world's most famous playwrights and has written over 30 plays and a variety of sonnets (love poems). The famous bard wrote in three genres: tragedies, comedies and history plays that entertained and educated the crowds at The Globe Theatre, London. Here, crowds were amazed by Shakespeare's command of the English language and his ability to write about a variety of human emotions, often which the audience would be able to relate to. Many of Shakespeare's plays also dealt with the theme of love and how love is never a smooth path. Some of his most famous writing are his soliloquies that deal with unrequited love and how love can tear families apart.

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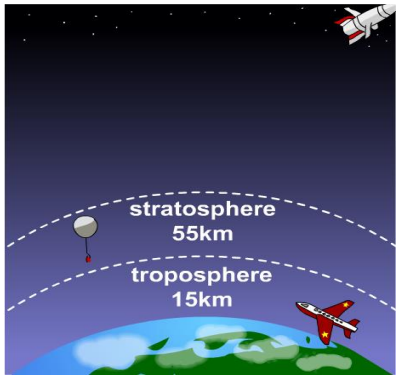
SCIENCE - CHEMISTRY

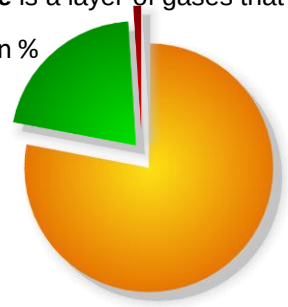
The Atmosphere

A: WHAT IS AN ATMOSPHERE?

The **atmosphere** is a layer of gases that surround the planet.

The composition of today's atmosphere:





~20% oxygen %
nitrogen

~80% nitrogen

Trace amounts of water vapour and carbon dioxide % nitrogen

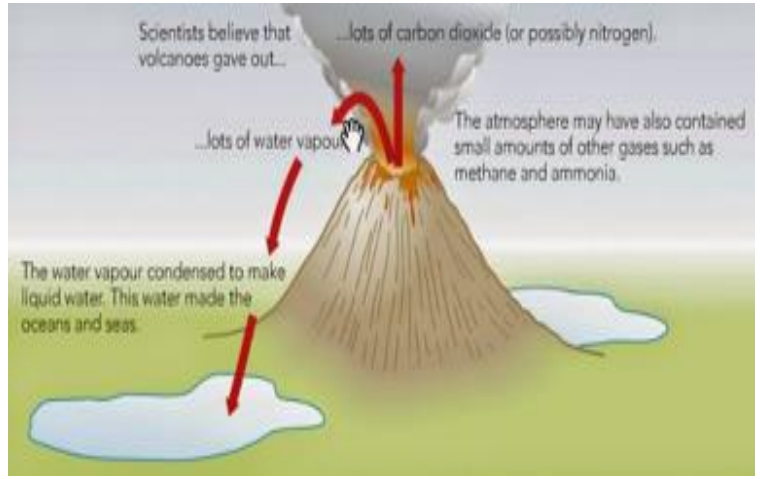
Carbon dioxide levels are rising because:

Burning fossil fuels and deforestation

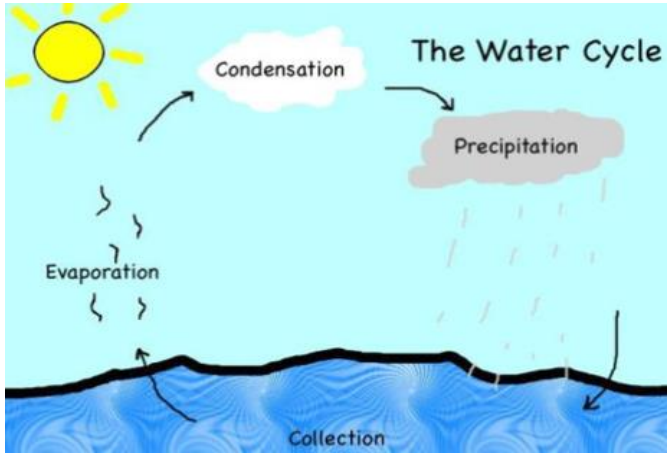
B: WHAT CREATED THE EARLY ATMOSPHERE?

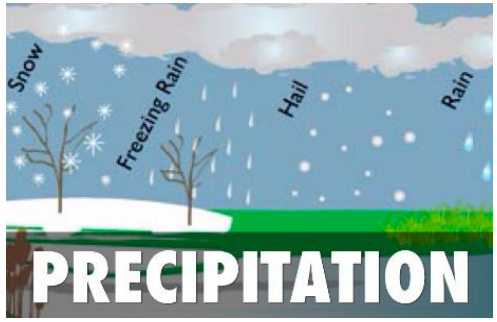
The early atmosphere	
Gas	% in atmosphere
Carbon dioxide	92
Nitrogen	4
Methane	2
Ammonia	2

The gases in Earth's early atmosphere came from volcanoes.



C: THE WATER CYCLE





D: WHAT ARE FOSSIL FUELS?

A combustible substance made from dead organisms that take millions of years to form

Remember the three fossil fuels are:

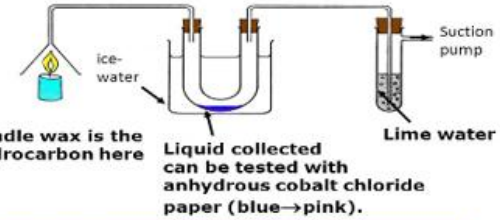
coal

crude oil

natural gas

What happens when fossil fuels burn?

The apparatus below is used to test what is made when the hydrocarbon wax burns...



any hydrocarbon + oxygen → water + carbon dioxide

E: WHAT IS AN ATMOSPHERIC POLLUTANT?

Pollutants are harmful substances in the environment

TYPES OF POLLUTION

Acid rain forms when sulfur and nitrogen dissolve in water.

Acid rain causes:

Death of aqueous life forms, death of plant life and damage to buildings

Oxides of sulfur and nitrogen can cause respiratory (breathing) problems

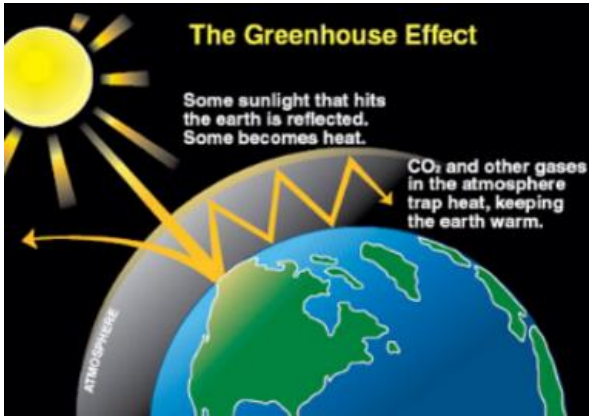
Carbon monoxide, a toxic COLOURLESS, ODOURLESS gas, is formed in incomplete combustion.

F: WHAT IS THE GREENHOUSE EFFECT?

The main greenhouse gases are:
Carbon dioxide (From burning fossil fuels and deforestation)
Methane (from livestock and growing rice)
Water vapour

The greenhouse effect: when greenhouse gases trap heat from the Sun. It is important as it maintains high enough temperature to support life on Earth.

The additional greenhouse effect: additional heat trapped through the increased amount of greenhouse gases.



The term '**climate change**' is used to refer to current changes in the climate. This is because recent scientific records show that the global climate is warming up more rapidly than usual.

The main effects of global climate change include:

- extreme weather (Flooding or drought)
- disrupted agriculture
- decreasing ice cover
- changing sea level

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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

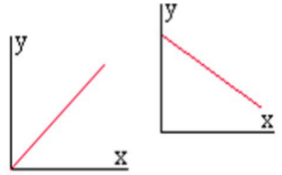
Numerical data can be **discrete** or **continuous**.

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.

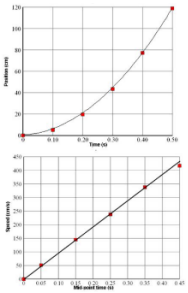
For example, the weight of a banana,
the time it takes for pupils to get to school,
the height of 13 year-olds.

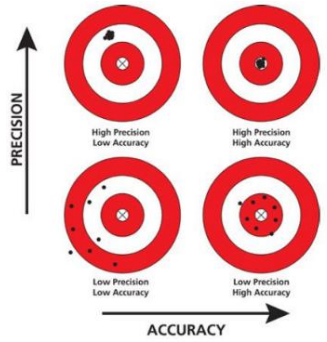


Relationship is Directly Proportional (both values increase or decrease at the same rate – line is straight)

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

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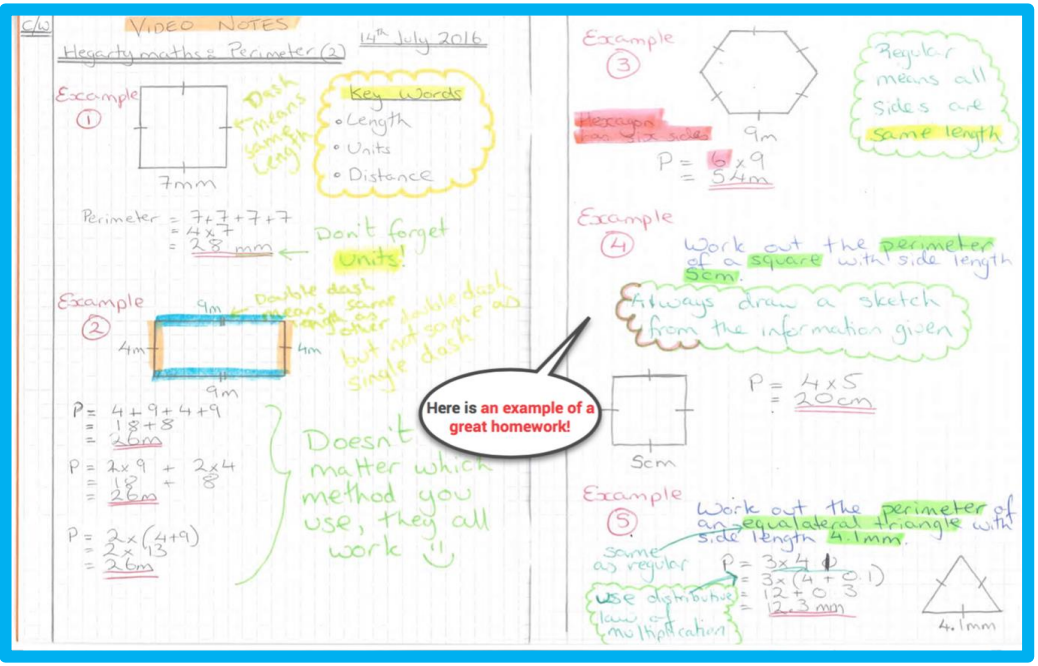
MATHS
Hegarty Maths

hegartymaths

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.**

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SPANISH

Opinions

1

hablo *por teléfono* – **I talk** on the telephone

BUT

me gusta hablar *por teléfono* – **I like talking** on the telephone

lo bueno es que ... – a/the good thing is that ...
lo malo es que ... – a/the bad thing is that ...
Me gusta ver las telenovelas. Lo bueno es que son divertidas. Lo malo es que son tontas.
I like watching TV soaps. The good thing is that they're fun. The bad thing is that they're silly.

2

		singular (one thing *owned*)	plural (two or more things *owned*)
singular (1 owner)	my	mi	mis
	your	tu	tus
	his/her/your (formal)	su	sus
plural (2 or more owners)	our	nuestro (*what is owned is masculine*) nuestra (*what is owned is feminine*)	nuestros (*what is owned is masculine*) nuestras (*what is owned is feminine*)
	your (plural)	vuestro (*what is owned is masculine*) vuestra (*what is owned is feminine*)	vuestros (*what is owned is masculine*) vuestras (*what is owned is feminine*)
	their/your (formal plural)	su	sus

3

Numbers 100–3000	*Los números 100–3000*		
100	cien, ciento	700	setecientos
101	ciento uno	800	ochocientos
110	ciento diez	900	novecientos
200	doscientos	1000	mil
300	trescientos	1001	mil uno
400	cuatrocientos	1215	mil doscientos quince
500	quinientos	2000	dos mil
600	seiscientos	3000	tres mil

4

To say 'somebody likes ...' put *a* in front of the person's name, followed by *le gusta:*
A *Tomás le gusta leer libros de vez en cuando.*

Remember:

me gusta – I like (it)	*nos gusta* – we like (it)
te gusta – you like (it)	*os gusta* – you (pl) like (it)
le gusta – he / she likes (it)	*les gusta* – they like (it)

Connectives	*Conectores*
because	*porque/pues/ya que*
but	*pero*
although	*aunque*
however	*sin embargo*
in addition	*además*

Sequencing	*Adverbios de secuencia*
before	*antes (de)*
later	*más tarde/luego*
afterwards/after	*después/después de*
then	*entonces*

A *Ayer, hoy y mañana*

Putting it all together! Here's how you talk about what you **do**, what you **did** and what you are **going to do**.

Normalmente desayuno a las siete. Ayer desayuné a las siete y cuarto. Mañana es sábado – ¡voy a desayunar a las diez!

Normally I eat breakfast at 7 o'clock. Yesterday I ate breakfast at a quarter past seven. Tomorrow is Saturday – I'm going to eat breakfast at 10 o'clock!

Normally / today – present tense
Yesterday / last week – preterite tense
Tomorrow / next week – immediate future tense

5

hablo – I speak
hablas – you speak
leo – I read
lees – you read

KO Quizlet link
https://quizlet.com/_6rvitz

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HISTORY

Elizabethan England

Early Life

Elizabeth I was the daughter of Anne Boleyn, second wife of Henry VIII. When she was only three years old, her mother was beheaded, after being accused of witchcraft. Therefore, she spent most of her childhood as 'Lady Elizabeth' – not even a princess. She was very intelligent and very keen to learn new things: she was an avid reader, and learnt how to speak several languages and place different musical instruments, as well as become a skilled horse rider. However, her childhood was probably very lonely and she had very few friends.

Elizabeth's portraits

Elizabeth is one of the most iconic monarchs of England, mainly because of her portraits. She used the portraits to show the country 'an image' of herself – it was a form of propaganda. Her portraits always showed her as being wealthy, beautiful and powerful. She always has luscious red hair and perfect, pale skin in her portraits – even after she had suffered from scarlet fever and so lost all her hair and had blemishes on her face.

The Spanish Armada

Elizabeth had an arch-enemy: King Philip II of Spain (previously married to Elizabeth's sister, Bloody Mary!). He was Catholic, whilst Elizabeth was Protestant. Philip wanted to turn England back into a Protestant country and so he sent a fleet of 130 warships in May, 1588, to invade. However, Elizabeth's vice-admiral of the fleet, Francis Drake) defeated the Armada by setting some of his own ships on fire and sending them towards the Spanish Armada. The Spanish fleet broke their formation, and then the English forced them to retreat up the north sea. The north sea is very rough and much of the fleet was shipwrecked off the islands close to Scotland.

Elizabethan Explorers

In 1492, Spanish explorer, Christopher Columbus, discovered America. This inspired many explorers in Europe to go and explore this continent, which was called the 'New World'. During Elizabeth's reign, there were two main explorers: Frances Drake and Walter Raleigh. Drake was the first person to circumnavigate (travel around) the whole globe in 1577 (it took him three years). When he returned, he presented Queen Elizabeth with a potato from the New World! Walter Raleigh founded the Roanoke Colony on the east coast of America, which was the very first colony of the British empire.

Elizabethan Theatre

During Elizabeth's reign, theatre became very popular. Shakespeare wrote some of his famous plays during Elizabeth's reign, such as Romeo and Juliet and Midsummer Night's Dream. The globe theatre was built in 1599 but it didn't last long – it burnt down in 1613. Women were not allowed to play female parts and so they were all played by young men. Performances usually began about 3.30 and lasted until the evening, with not just a play but 'circus acts' such as bear-baiting too!

YEAR 7
HOMEWORK
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GEOGRAPHY

Microclimates Investigation

A: Investigation

Title:
How do microclimates vary across the University Park?
Hypothesis (a theory) to investigate:
The closer a site is to the lake, the cooler it will be.
Microclimate:
A small area with a different set of average climatic conditions to wider norm.
Equipment Used:
Thermometer

B: Geographical Theory

Concrete, brick and asphalt absorb the sun's energy and heat up the atmosphere.

Tall buildings create shadows and channel wind making streets cooler than the air above.

The closer a site is to the lake, the cooler it will be. As the water absorbs heat radiation.

C: Methodology

- We selected 5 sites around the University Park to show a variety of locations/climates so we could compare the results against the geographical theory.
- We went to each location and held the thermometer away from our bodies so that our heat did not affect the results
- We recorded the temperature every minute for a total of 5 minutes so that we could take an average (mean average). This also allowed for the thermometer to adjust to the temperature of that location.
- We wrote the results in a table then moved to the next site and repeated the same steps to make our results more reliable

D: Data Presentation

We used a bar graph as this clearly showed our data in a way that could be easily compared. It was easy to draw and accurate.

E: Results

Site	Temp
Lake Side Arts	26.3
The Boathouse	22.7
The Dell	22.4
The Dragons	28.5
The Island	18.7

F: Analysis

The Dragons site had the highest temperature. This was because it was an open space and with concrete ground. This heated up the area. The coolest site was The Island. This is because it had shade and was surrounded by water.

G: Conclusion

I can see that the warmest places were the sites with the open spaces and larger concreted areas. This concrete heated up the area increasing the temperatures.

H: Evaluation

Problem	Solution
Not measuring each site at the same time. This led to different results and conditions at different times of day.	Measure all the sites at exactly the same time to make the investigation fairer
Hand over the thermometer which gives a reading which is too warm	Check before measuring the temperature that hands are not placed over the sensor
An average was not taken so the results were influenced by human error mistakes in the method	Take 5 readings at each site and average the results. This would reduce the impact of any mistakes in the method

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PHILOSOPHY AND ETHICS

Jesus (Part 2)

A: What did Jesus say?

Jesus was famous for his teachings. One of his most famous teachings is The Sermon on the Mount. Jesus tackled many issues of time in this speech for example "blessed are the peacemakers" and "love your enemies". Jesus also taught in parables. One of the most famous is the parable of the good Samaritan which explains that you should treat others as you would like to be treated. In class you will look at the parable of the lost son.

B: What did Jesus do?

When Jesus arrives in a deserted and remote area to preach to a crowd of 5000, he is told that the people are hungry. They discuss whether to go back to the villages to get food, but it's getting late, so instead Jesus asks the disciples to order the crowd to sit and to gather what food is available. All they manage to collect is five loaves and two fishes. But Jesus works a miracle and there is enough to feed everyone, so much so there are twelve baskets full of leftovers. The meaning of this miracle would have been clear to the disciples and the crowd. Jesus had acted with the power of God. Miracles like this proved that Jesus was God as he possessed power over nature.
Jesus also walked on water which you will learn about in class.

C: Who was he?

C.S Lewis famously said that Jesus was either mad, bad or good.

Mad	Bad	God
Jesus told his disciples to leave their families, friends and all their possessions behind to follow him	Jesus broke all the laws that the Jewish people had to follow.	Jesus told people how to live a good life- not to be greedy, to respect each other and look after the poor.
When Jesus was arrested and put on trial he refused to stand up for himself and prove his innocence.	Jesus went into the Temple shouting at the traders, throwing the tables and everything on them on the floor.	Jesus was able to drive out demons/ the devil from people.

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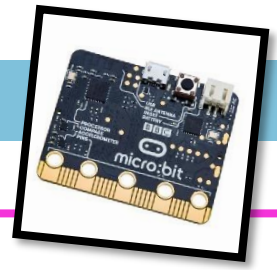
COMPUTER SCIENCE

Micro-Bits Computational Thinking



A: Definition

Computational thinking this is the thought processes involved in formulating a problem and expressing its solution(s) in a way that a computer – human or machine – can carry out effectively. Through thinking computationally, you can formulate a problem and will conceptualize a solution. With the use a code editor, such as Microsoft Touch Develop, you can compile and run your program on the BBC micro:bit.

B: The basic coding concepts

VARIABLES TYPES

PROCEDURES ITERATION

CONDITIONALS

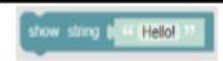
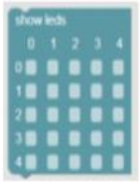
C: Process of compiling code from the micro on your PC

1. Click on Compile
2. This will save into your downloads
3. Then insert the USB from your Micro Bit
4. Go to computer and drag the file from your downloads to the micro bit drive
5. Then press the button on your Micro Bit to see if it works

D: Key vocabulary and words

Key vocabulary	
Micro:bit	A small computer designed by the BBC for use in computer science education.
Processor	Receives inputs from the computer and produces outputs.
USB	The form of power supply used by the Micro:bit – power is transmitted from the computer via a micro-USB cable.
Buttons	Input devices used within the Micro:bit to control or alter programs whilst running.
LED	Light emitting diodes (LEDs) – used on the Micro:bit as a screen in a 5x5 grid to display information.
Accelerometer	An input device within the Micro:bit to control or alter programs by tilting or moving the device.
Microsoft Block Editor	The visual programming language used to create programs that can be run on the Micro:bit.

Algorithm Key Words	
Algorithm	A set of instructions to be followed to complete a given task or solve a problem.
Program	A sequence of instructions used by a computer.
Sequence	The order which the computer will run code in, one line at a time.
Selection	A decision made by a computer, choosing what code should be run only when certain conditions are met.
Condition	Checking to see whether a statement or sum is true or false.
Iteration	When a section of code is repeated several times – also known as looping.
Variable	Something which can be changed in a computer. Made up of a name and some data to be saved.

Key blocks	
	Used to display a string (a combination of letters, numbers or symbols) onto the screen.
	Used to display information onto the screen, controlling the LEDs that are shown based on the tick-boxes that have been selected.
	Used to loop through any code contained within the block.
	Used to run certain code contained within the block when the A button is pressed.
	Used to create a variable which can be altered to control parts of the program.

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MUSIC
Radio

A: Radio Station Facts

BBC Radio 1:
First air date: 30 September 1967
Owned by: BBC
Music: Modern popular music and current chart hits.

Capital:
First air date: 16 October 1973
Owned by: Global
Music: Modern popular music and current chart hits.

Smooth:
First air date: 4 March 1990
Owned by: Global
Music: Adult Contemporary Music.

Gem:
First air date: Tuesday 23 September 1997.
Owned by: Bauer Radio
Music: Adult Contemporary Music.

B: Careers in Radio

- DJ
- Newsreader
- News Team
- Radio producer
- Station Manager
- Runner
- Marketing
- Music researchers
- Sound Engineers
- Music Composer – Jingles etc

C: Facts about Radio

- 17,161 people are employed in this sector.
- The average income for a career in Radio is £28,667.
- 37% of workers in Radio have an undergraduate degree, certificate or diploma.
- 45% of radio stations are in London. 6% of radio stations are in the East Midlands.
- 53% of recruitment in Radio is direct from education.

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DRAMA

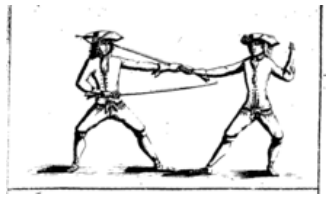
Stage Combat and Melodrama

Section A: Stage Combat

Stage combat, fight craft or **fight** choreography is a specialised technique in theatre designed to create the illusion of physical **combat** without causing harm to the performers. It is used in live **stage** plays as well as operatic and ballet productions.

Section B: Melodrama

The definition of **melodrama** is a creative performance or actions with lots of exaggerated emotion, tension or excitement. A pantomime and a TV soap (EastEnders) is an **example** of a **melodrama**.



Section C: Melodrama Stock Characters and examples

GOLDEN RULES FOR SAFE STAGE COMBAT:

1. **Know what the fight is meant to achieve**. A playwright never put fights or violence into their plays for no reason. Understand what the fight is trying to say or do and use techniques or moves that help tell that story.
2. **Keep it simple:** Keep the choreography (movement) simple and achievable.
3. **Put safety first:** Safety is paramount. All moments of combat on stage should be safe for the actors performing them, other cast members on stage at the time, anyone backstage or in the wings and for the audience. This means safe technique, safe and appropriate distance and positioning on stage.
4. **Rehearse, rehearse, rehearse:** The more time you spend rehearsing the fight scene, the more confident you will be and therefore the better the performance of that moment will be.
5. **Manage physical and emotional responses:** The characters must have a response to what is happening to them and what they are doing. Emotional responses to the combat help an audience to understand what that character is going through.

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ART

Masks and Festivals

Part A Vocab

Tone- light and darkness or 'shading' in a piece.
Form- another word for shape.
Background- the space at the back or rear of an image.
Tonal Contrast- the amount of light and dark shades in a piece.
Digital- the use of technology or a computer.
Texture- refers to the surface of a piece.
Foreground- the space at the front of an image
Mixed Media- using a variety of material
Abstract- something that doesn't look 'real' or make reference to real life.
Expressive-showing use of brushstrokes, texture, paint flicks, could also shown emotion.
Composition- the layout of a piece.
Deity- Higher being or 'God/Goddess'

Part B: Rangoli Patterns

Rangoli pattern is a traditional form of Indian Art. The purpose of Rangoli is decoration and it is thought to bring good luck. It is used as a welcome to the entrance of a home. During the Hindu festival of Light: **Diwali**, Rangoli patterns are used to welcome the Goddess Lakshmi (wealth) into Indian homes. Rangoli patterns are traditionally made by women. They use natural dyes, coloured powders, pulses, cereals, rice and flowers to create Rangoli designs. Rangoli designs can be simple geometric shapes, deity impressions or flower and petal shapes but they can also be very elaborate designs made by lots of people.
They use techniques like Reflection, Rotation & Repetition.

Part C: The Notting Hill Carnival

Largest street festival in Europe. It started in 1964 as a way for Afro-Caribbean communities to celebrate their cultures and traditions. The root of the celebration is based on the festivals from the 1800's which celebrated the abolition of slavery and the slave trade.

Back in the original carnivals after the abolition of slavery, the Trinidadians made costumes to mock European traditions to poke fun at the people who had caused them so much misery over the hundreds of years of slavery. They even whitened their faces with flour! These traditions are still used today to inspire costumes.

The festivals are so big because back when they first started in the 1800's, carnivals and festivals had been banned during the years of slavery. The carnival happens every year on the August bank holiday weekend.

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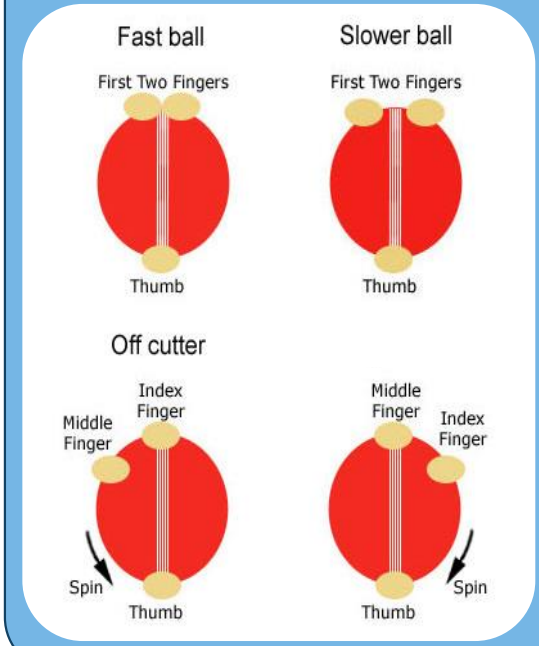
PE

Cricket

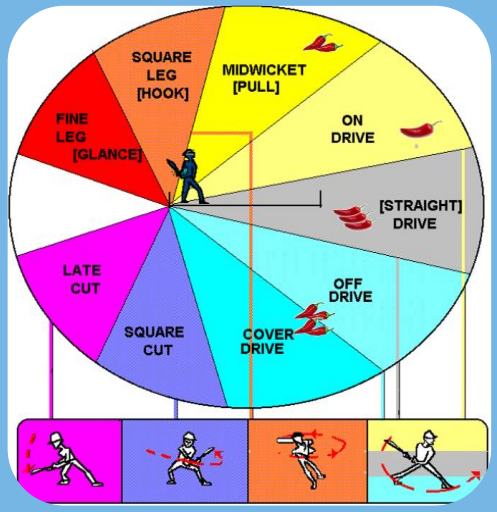
A: Key Terms

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		

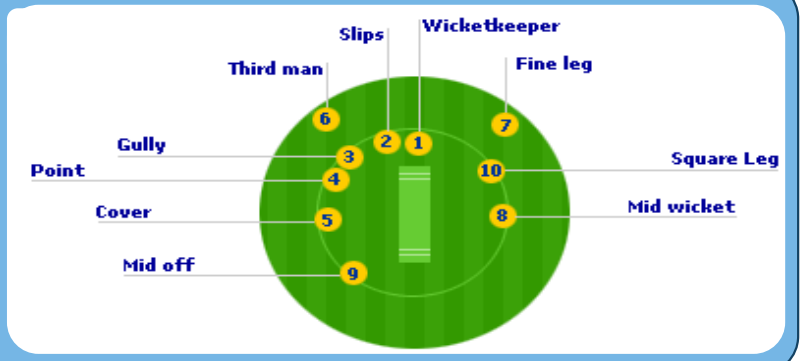
B: Bowling Grip



D: Shot Types



C: Fielding Positions



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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 bowlers' action but before they release the ball

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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

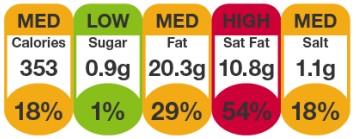
Section B- Labelling

Keep Britain Tidy

Bar code

Recycling

Fair Trade



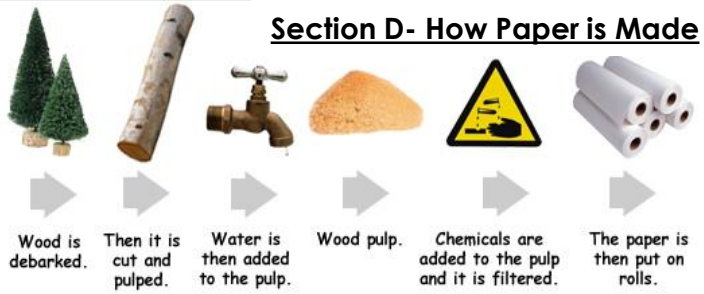
Nutritional information

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 7
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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

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.

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

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.

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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 7
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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

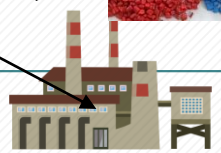
Plastic products have a long shelf life, however it also means that they are difficult to dispose of

- 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

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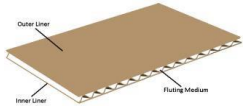
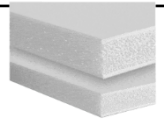
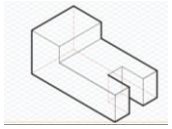
Paper and Boards

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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HARD
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