Homework Schedule

📖 + 💻

Monday	Tuesday	Wednesday	Thursday	Friday
English	Maths	Science	DT	Art
Music	Drama	PE	History	Geography
Sparx	Computing	RPE	French	Reading Plus
Free Choice Reading – see recommendations on the back of the booklet				

Week beginning	Box Number
8th September	1
15th September	2
22nd September	3
29th September	4
6th October	5
13th October	6
20th October	7
Half Term	
3rd November	8
10th November	9
17th November	10
24th November	11
1st December	12
8th December	13
15th December	14

sparx

Log in to 'Sparx' and spend a minimum of 30 minutes per week completing the tasks assigned to you.

dreambox® READING PLUS

Log in to 'Reading Plus' and spend a minimum of 30 minutes per week completing the reading and vocabulary tasks assigned.

My **Reading Plus** Login Details:

Site code: **rppyrlands**
Username:

Password: **qwerty**

My **Sparx** Login Details:

Complete your computing homework on a computer (in your eportfolio).

STUDY SKILLS

How to 'Self-Quiz'

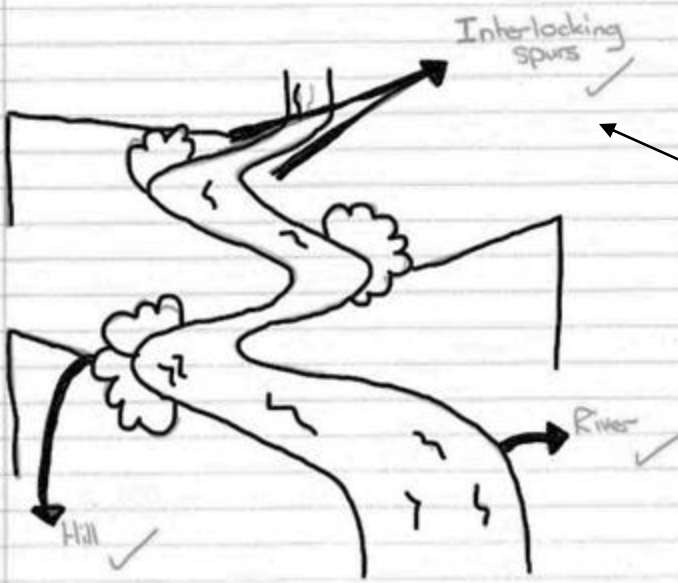**Step 1:** Read the information you need to learn.
Step 2: Generate questions for yourself from the information.
Step 3: Close your HW booklet and answer your quiz questions.
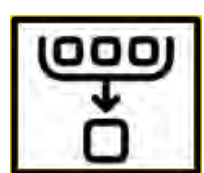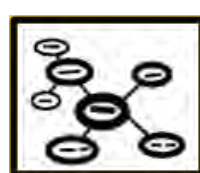**Step 4:** Check that you have answered them correctly.

Self-quizzing questions can look like labelling a diagram

Self-quizzing questions can look like written Qs and Answers

STUDY SKILLS

How to 'Define keywords'

Step 1: Read the information you need to learn.
Step 2: Look, Cover, Write, Check the spelling.
Step 3: Write out the definition of the word in your own words.
Step 4: Check you have been accurate.

Look, Cover, Write, Check the spelling

Remember to write a title for each subject

Write out a definition or use it in a sentence.

Drama – Telling of tales and fables
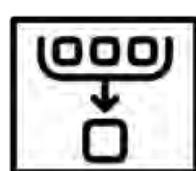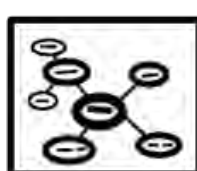
① Characterisation ✓ → Means moving around and using your voice like the character so that it is believeable

② Narration ✓ → telling the story aloud to match the action

Check you were accurate

Rule off your work to save space

STUDY SKILLS

How to 'Illustrate'

Step 1: Read and number the information you need to learn.

Step 2: Draw out a grid with a box for each number.

Step 3: Turn the information into pictures or symbols that tell the story or sequence.

Step 4: Use the images you've drawn to help you tell someone else the information.

Draw out your grid, making sure you have enough space

Number your boxes to show the sequence/story

Water and Waste in the Middle Ages and Industrial Britain

① WATER COLLECTION

② SELLING WASTE

③ POPULATION INCREASED

④ WASTE (MORE PEOPLE) RIP RIP RIP RIP

⑤ GERM THEORY – LOUIS PASTEUR

⑥ CLEAN H2O
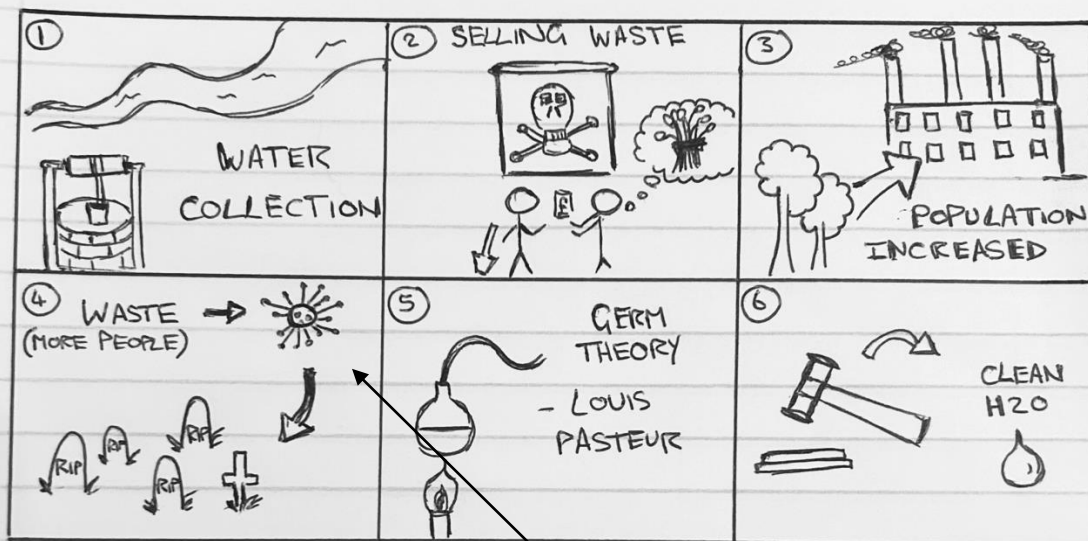
When you illustrate, you can use symbols, arrows and/or keywords

STUDY SKILLS
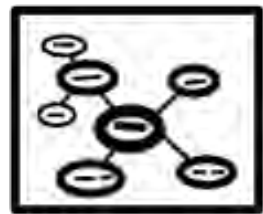
How to 'Mind Map'

Step 1: Read the knowledge in the box carefully.
Step 2: Write the main topic in the centre.
Step 3: Write 3-4 sub-topics around the main topic.
Step 4: Expand each subject developing each branch (at least twice).

Main topic in the middle
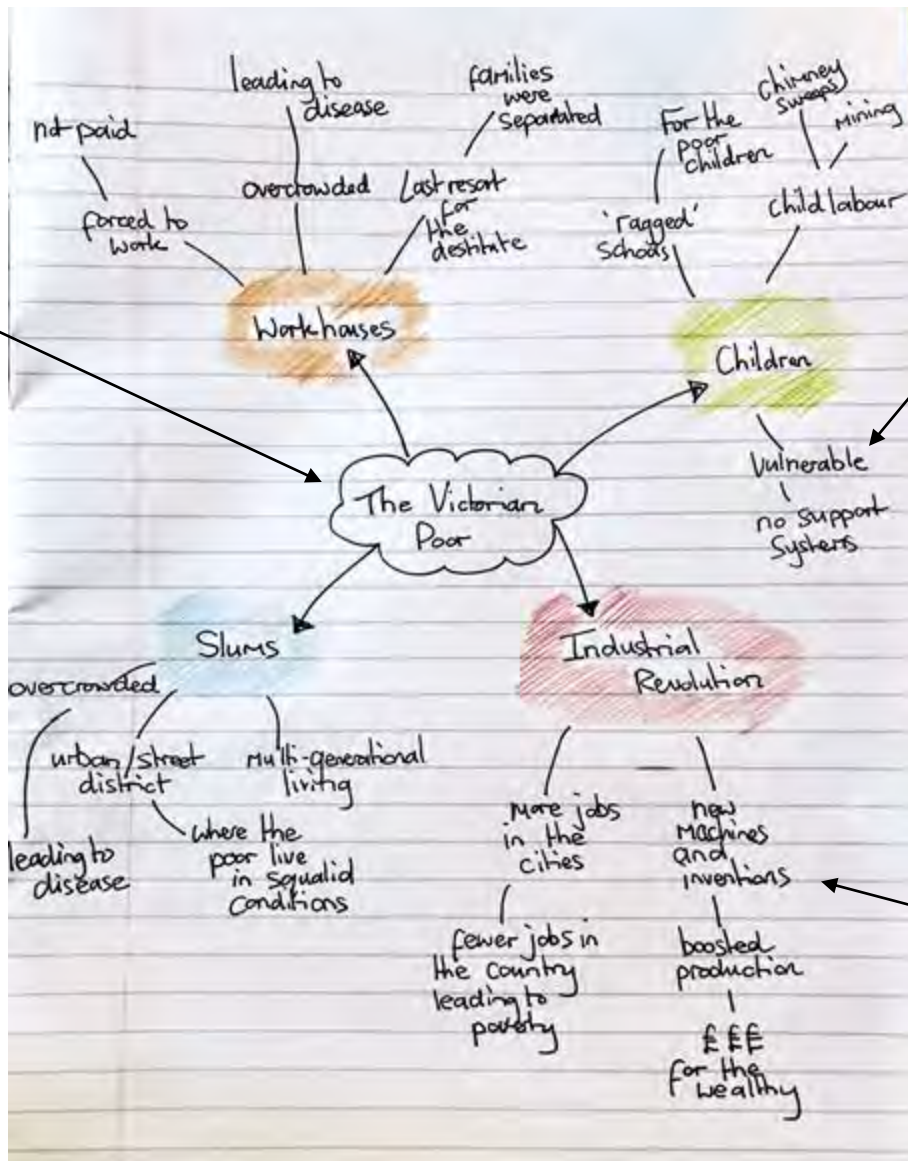
3-4 sub-topics o the first branches

Each branch might be developed by examples, more detail, the impact or effect

Develop each branch as far as you can

The mind map shown contains:

Workhouses
- not paid
- forced to work
- leading to disease
- overcrowded
- Last resort for the destitute
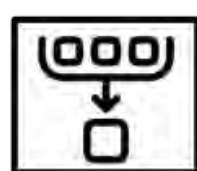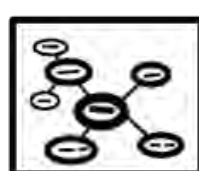- families were separated

Children
- For the Poor Children
- chimney sweeps
- mining
- 'ragged' schools
- child labour
- Vulnerable
- no support systems

The Victorian Poor (centre)

Slums
- overcrowded
- urban/street district
- leading to disease
- multi-generational living
- where the poor live in squalid conditions

Industrial Revolution
- More jobs in the cities
- fewer jobs in the country leading to poverty
- new machines and inventions
- boosted production
- £££ for the wealthy

STUDY SKILLS

How to 'Summarise'

Step 1: Read the knowledge carefully.

Step 2: Underline the key ideas and keywords.

Step 3: Using a mix of your own words and keywords in the text, reduce the text into a summary (a short paragraph or bullet points)

Summarising might look like turning a longer piece of text into bullet points of key information

Title for your subject

RPE – What is A I (Artificial Intelligence) ?

- technology that can think in a 'human' way
- Machine learning
- problem solving
- rapid processing speeds
- used in phone apps, video games and chat-bots
- cars that self-drive use AI to make decisions
- unknown potential
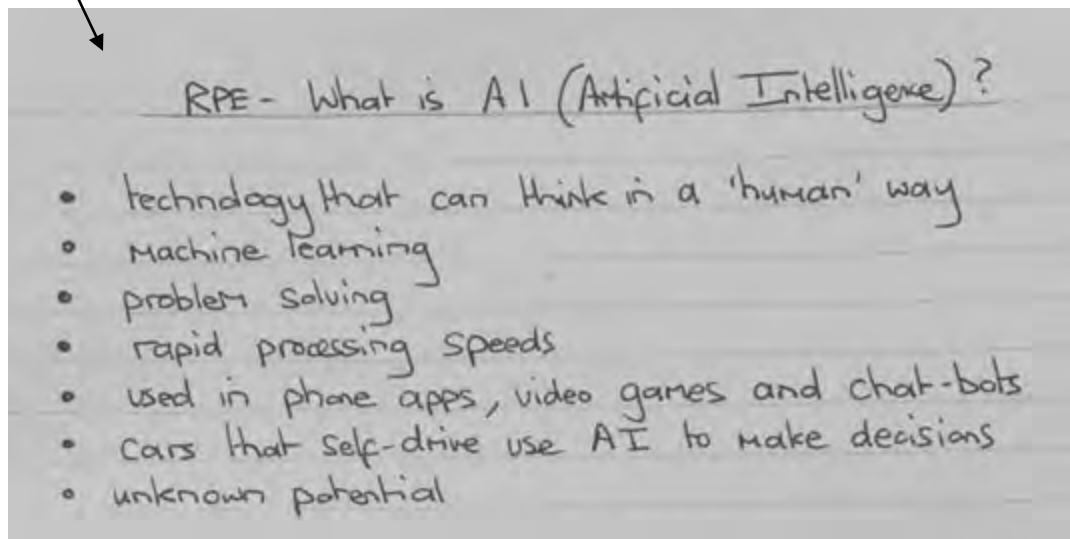
This should be a shorter version of the original, containing the most important information
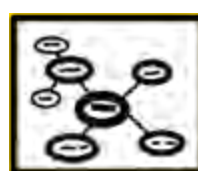
STUDY SKILLS

4 ways of transforming knowledge

3. The Globe Theatre
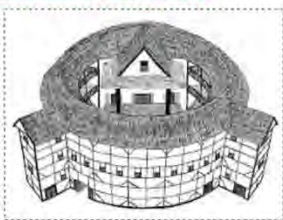
- Plays were performed during daylight hours as there was no electricity.

- The Globe could hold up to 2500 people.

- The stage at The Globe was open on three sides.

- There was a trapdoor in the stage where ghosts or witches could appear.

- The stage was called an apron stage because it stuck out into the audience.

- The balcony above the stage was used for musicians or as a balcony in plays such as *Romeo and Juliet*.

- Women and girls were not allowed to act. Female characters were played by male actors.

1

Keywords Quizzing   The Globe

The Globe → a theatre that was round in shape

Trapdoor → a wooden hole in the stage where spooky characters would appear

Apron stage → the name of the part of the stage that juts out

Balcony → a high up balcony used for romantic scenes e.g. Romeo and Juliet

Actors → women were not permitted to perform on the stage

2

Self-Quiz   The Globe

1. Why were plays performed during daylight hours?
   There was no electricity.
2. What supernatural characters would use the trap door?
   Ghosts and witches
3. Why was the stage called an 'apron stage'?
   It stuck out.
4. What famous Shakespearean play featured a balcony?
   Romeo and Juliet
5. Who was not permitted to act on the stages?
   Girls or women

4

Summarising   The Globe

The Globe theatre was given its name due to its round shape. The stage inside the theatre was an unusual shape and jutted out into the audience. This would have made the performances of Shakespeare's plays very intimate. Within the stage floor, there was a trapdoor. This was used for scary characters such as ghosts and witches to emerge. Perhaps this represented a version of Hell. A balcony was used, usually by musicians but also for key scenes. Most famously, it was used in 'Romeo and Juliet'.

3

Illustrate it   The Globe

There was a balcony.

Plays took place in the daytime.

The stage jutted out into the audience.

A trapdoor was used for spooky characters.

♀ = not permitted to act on the stage
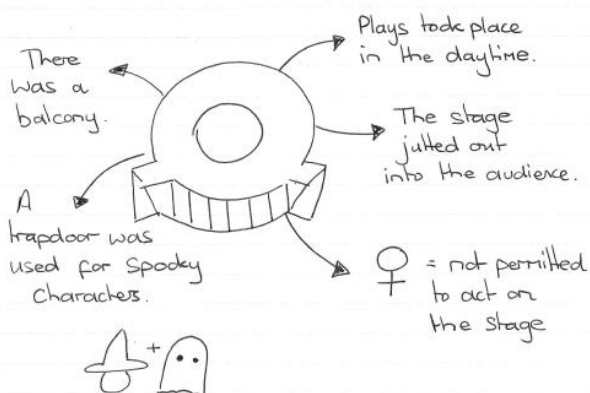
1. Conventions of a dystopia

Convention means what is typical i.e., what you would expect when reading a dystopia.

Conventions of a dystopia:

- A place of great suffering
- Ruled by an oppressive leader
- Lack of freedom
- Harsh punishments
- High levels of surveillance
- People living in fear
- Poor living conditions
- Environmental disasters
- Bleak settings
- Can be the illusion of a perfect world

Often, protagonists are on a journey to escape or overthrow the oppressive government.

Self-quiz on the information above.

e.g. How might people living in a dystopia feel? Fear.

2. Vocabulary
Learn the words below and their definitions.

|	
Dystopia	An imagined place of great suffering. E.g. poverty, environmental disaster, oppressive leadership.
Utopia	An imagined place where everything is perfect.
Authoritarian	Where a government or leader is controlling and restricts the people's freedom.
Surveillance	Being watched and monitored. Often in dystopias, protagonists are heavily monitored.
Oppressive	Harsh or cruel behaviour used to control others and reduce their freedoms.
Inequality	The unfair treatment and distribution of wealth or opportunities.

Challenge!
Make a list of five dystopian novels.
Make an information sheet about one of them.
What is dystopian about it?

3. Identifying conventions in the extract

Read the extract. **Where are dystopian features present?**
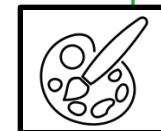
Whispers of the Resistance

The sky was always a dull grey, like ash after a fire. It had been that way for as long as Amina could remember. The trees, once green and full of life, were now twisted, blackened skeletons, barely clinging to the poisoned earth. Every day, the loudspeakers would blare the same message: "Obey the Law. Keep the Peace. No Questions." Amina had learned long ago not to ask questions. Those who did were taken away, never to return.

The city was divided into Zones. Amina lived in Zone 4, where people worked long hours in the factories. No one complained. It was safer that way. The Enforcers patrolled the streets, faceless in their black helmets, watching for any signs of rebellion. Amina's older brother, Tariq, had once whispered about leaving the city, finding a place where the sky was blue, and people were free. But that was before he disappeared.

One evening, while returning from the factory, Amina found a small piece of paper folded tightly in her pocket. It had just four words written on it: "The Resistance is real."

4. Comprehension

Answer the questions based on the extract in box 3.

1. What colour is the sky in the world Amina lives in?

2. How are the trees described in the story?

3. What message is repeated over the loudspeakers every day?

4. What happens to people who ask questions in Amina's world?

5. In which Zone does Amina live?

6. What type of work do people in Zone 4 do?

7. How are the Enforcers described?

8. What did Amina's brother, Tariq, want to do before he disappeared?

9. What does Amina find in her pocket one evening?

10. What might the phrase "The Resistance is real" suggest about the world Amina lives in?

Challenges!

Using your knowledge of dystopian fiction, the conventions and examples of dystopian texts, **write a blurb for a dystopian story of your own creation**. *A blurb is the section on the back of a book that gives an overview of the storyline.*

Design the cover for your dystopian story.

5. George Orwell's '1984'

Context
Orwell was born **Eric Arthur Blair** on 25 June 1903 in eastern India, the son of a British colonial civil servant. He was educated in England and, after he left Eton, joined the Indian Imperial Police in Burma, then a British colony. He resigned in 1927 and decided to become a writer.

The rise to power of dictators such as Adolf Hitler in Germany and Joseph Stalin in the Soviet Union inspired Orwell's mounting hatred of **totalitarianism** and political **authority.** Orwell devoted his energy to writing novels that were politically charged, first with '**Animal Farm**' in 1945, then with '**1984**' in 1949.

Key Information
The setting of *1984* is a *dystopia*: an imagined world that is far worse than our own.

When George Orwell wrote *1984*, the year that gives the book its title was still almost 40 years in the future. Some of the things Orwell imagined that would come to pass were the *telescreen*, a TV that observes those who are watching it, and a world consisting of three megastates rather than hundreds of countries

Another of Orwell's creations for *1984* is **Newspeak**, a form of English that the book's totalitarian government uses to discourage free thinking. Orwell believed that, without a word or words to express an idea, the idea itself was impossible to understand. Newspeak has eliminated the word "bad," replacing it with the less-harsh "ungood." The author's point was that government can control us through the words.
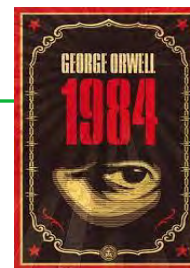
6. The Hunger Games

The first book in the ground-breaking Hunger Games trilogy. Set in a dark vision of the near future, a terrifying reality TV show is taking place. Twelve boys and twelve girls are forced to appear in a live event called *The Hunger Games*. There is only one rule: kill or be killed.

When sixteen-year-old Katniss Everdeen steps forward to take her younger sister's place in the games, she sees it as a death sentence. But Katniss has been close to death before. For her, survival is second nature...

Helpful vocabulary for *The Hunger Games*:

Propaganda: misleading information used to promote a particular point of view.

Mutation: something that has been genetically altered.

Poacher: a person who hunts illegally.

Mentor: somebody who helps and guides you.

7. Techniques we can use in our creative writing.

Simile	A comparison between two things that uses 'like' or 'as' (e.g. Zeus's voice boomed like thunder).
Metaphor	A comparison where you state something **is** something else (e.g. Juliet is the sun).
Personification	Giving human qualities to an animal or object (e.g. the pen danced across the page).
Pathetic Fallacy	A type of personification where the weather is given human characteristics to reflect the mood of the story.
In Media Res	When the story begins in the middle of the action.
Juxtaposition	Creating a deliberate contrast by placing two things side by side
Sensory Imagery	Where a writer references what can be heard, seen, smelt, felt or tasted in their story.
Polysyndeton	Where a writer joins parts of their sentence by repeating 'and'.
Monosyllabic Vocab	Words of one syllable like 'dull' or 'dark'.
Characterisation	How writers construct and create their characters

English

8. Key Vocabulary

Word	Definition
Draconian	An adjective to describe hard and severe laws.
censorship	The banning of books, films or news that are considered unacceptable by the government.
anachronism	An object that comes from a different time than that in which it exists.
dystopia	an imagined state or society in which there is great suffering or injustice (usually futuristic)

9. Key Vocabulary

Word	Definition
adrenaline	A chemical produced by the body when somebody is frightened, angry or excited.
vaccination	A simple and effective way of protecting you against harmful diseases.
authoritarian	Enforcing strict obedience to the government and allowing very little personal freedom.
rewilding	The restoration of eco-systems where nature can take care of itself.

10. Context

Global Warming: this book looks at the impact humans are having on the environment and our relationship with nature.

Pandemic: this novel starts by telling us that there is an epidemic that came from nature and killed a lot of the human race. Now Bear and Juniper are 'trapped' in a walled city with no nature and no freedom.

Identity and Mental Health: we see Juniper and Bear being treated badly at school because they seem to be different from everybody else. Can we consider the impact of exclusion and confinement on our mental health?

The Importance of writing and books: links to *Once* and Hitler burning books. Throughout the story we see the importance of documentation.

Lynx: Lynx are a keystone species that we are missing in this country, since we hunted lynx and wolves to extinction hundreds of years ago. Lynx would be a natural predator of deer, and controlling deer numbers would be beneficial for our woodlands.

11. Main Characters

Juniper Green – is the main character in our story. She is brave and intuitive, and she believes in finding her parents. She is always looking after her little brother Bear and keeps him safe at school and in the wild – but which is worse?

Bear Green – is always in trouble at school, but he is brave and determined to keep up with everything Juniper is doing. He keeps Juniper safe and is creative in his ideas of survival.

Ghost – is Bear and Juniper's guardian angel in a way. She is a black Lynx cat and does everything she can to care for Bear and Juniper in the wild. Is she named appropriately?

Portia Steel – The controller of the city. She doesn't like anybody who doesn't agree with her ideas.

Annie-Rose – Juniper and Bear's grandmother who takes care of one of the glasshouses in the city. She is blind.

Etienne – A close friend of Juniper who helps them escape the city.

Violet – a lady who lives in the forest. She used to live in the city. She attempts to kidnap Juniper and Bear.

English

12. The Settings.

The City
Where the World Turns Wild is, in the first half, about a city without nature. It's a bleak, sterile landscape, and this has become a state of mind. The city is ruled by a cruel, authoritarian leader, and it's a miserable, crowded, restricted existence.

The Lake District
Although the journey Juniper and Bear take is only roughly based on real geography, one place that's real is the cave Bear finds when Juniper is injured. This cave is incredible! It's nestled into the side of Loughrigg Fell, above Rydal Water.

Ennerdale
Juniper and Bear are travelling to their parents in Ennerdale. "A faraway valley called Ennerdale in a land of lakes and mountains,"
Juniper says. It's where she and Bear were born. Ennerdale is a real place. It's in West Cumbria and is one of the most remote valleys and lakes in the Lake District. It's the site of an exciting rewilding project.

13. Key Quotations

1. "Once upon a time, almost fifty years ago, climate changed and humans ransacking everything good and beautiful..." Ch.1

2. "How could a piece of writing get you in so much trouble?" Ch.3

3. "Most of the books are forbidden now." Ch.6

4. "And every morning I'm waking from my dreams of an altogether different kind of canopy of branches and leaves, and I think I can't stand it anymore. Another day in this city." Ch.8

5. "A murder of crows. It was our dictionary in this strange list right at the back of the book. Collective nouns. Like the dictionary was warning me." Ch.28

6. "Ticks are like vampires – they drink blood and hate the sun." Ch.32

14. Key Motifs
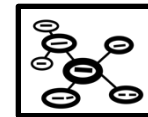
Glasshouses: The cities in *Where the World Turns Wild* have locked out the natural world, save for a few limited plants in glasshouses.

Books: In the city in *Where the World Turns Wild*, any books containing descriptions or pictures of the natural world are banned. Juniper and Bear's grandmother has managed to keep a secret stash of old books in their kitchen however, and the books give the children a connection to the wild.

Toys: Bear plays with plastic animals and Juniper keeps an old ragdoll that used to belong her mum. Toys and play seemed an important part of Bear's character in particular, allowing him to imagine his way out of his bleak city existence.

Art
Juniper loves to draw. In the city, she draws plants from the glasshouse. In the wild, on her and Bear's journey, she sketches portraits of some of the people important to her.

Fractals
Fractals are infinitely repeating patterns, with self-similar patterns repeating at different scales. Fractals are amazing, not least because they commonly appear in nature. It's thought that fractals may be soothing for our brain and in *Where the World Turns Wild,* computer-generated fractals are used around the city.
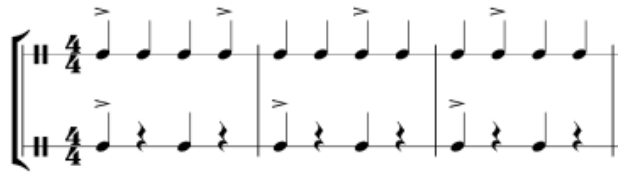
Music

1. RHYTHM

REPETITION and **CYCLIC RHYTHMS** are used to organise music.

A repeated rhythm pattern (**OSTINATO** or **TIMELINE**) is used as a basis for **IMPROVISATION.**

Use of **SYNCOPATION, POLYRHYTHMS, CYCLIC RHYTHMS** and **CROSS-RHYTHMS.**

MASTER DRUMMER can give musical 'cues' to performers to change rhythms during a performance and can also choose to **ACCENT** different beats within a **RHYTHM CYCLE**.

2. AFRICAN SINGERS

African singers often create vocal harmony by singing in thirds, fourths or fifths.

UNISON and **PARALLEL OCTAVE** harmony is also common.

The basic form of African Vocal Music is **CHORAL SINGING** known as **CALL AND RESPONSE** where one singer (**SOLOIST**) or small group of singers sings a line and the whole group (**CHORUS**) makes a reply (often a fixed **REFRAIN**) – like a "musical conversation" – in alternation with the "lead singer".

Challenge!
Write out the meanings of cyclic, ostinato, polyrhythm and improvisation.

3. MASTER DRUMMER

The **MASTER DRUMMER** can elaborate and decorate his solo drum part with **ACCENTS** and playing in a technically demanding style to "show off" to the rest of the drum ensemble and audience.

A **MASTER DRUMMER** often leads giving signals to the rest of the group to change rhythms or sections of the piece and can also control the **TEMPO**. He often **IMPROVISES** highly complicated rhythms and can indicate the ending of a piece of music as well as playing the "**CALL**" to **CALL AND RESPONSE** SECTIONS which are 'responded' by the drum ensemble.

4. ELEMENTS

Drummers play interlocking rhythms. This creates a **THICK** and complex **POLYPHONIC** texture (2 or more rhythms at the same time).

Since African Drumming is often performed outside and at social gatherings and celebrations, the dynamics are generally **LOUD (FORTE – *f*)** or **VERY LOUD (FORTISSIMO – *ff*)**.

The tempo is **FAST** – designed for dancing and social gatherings.

5. CULTURAL CONTEXT

African Drumming is 'traditional' and handed down via the **ORAL TRADITION** (not written down).

Not performed 'at a concert', rather everyone joins in by dancing or playing an instrument, singing or clapping.

Combines other art forms and is heard at special occasions and celebrations. Many Africans believe that music serves as a link to the spirit world.

6. INSTRUMENTS AND THE IMPACT OF TECHNOLOGY

Traditional drums such as the **DJEMBE**, **TALKING DRUM** and **DUNDUN** remain popular in African music today, often combined with a number of percussion instruments, stringed instruments and woodwind instruments. **RHYTHM** remains a key feature of African drumming.

African music has been a major influence on the development of popular music contributing rhythms, structures, melodic features and the use of improvisation to such styles as blues, gospel and jazz, brought over to America by slaves. High-quality recordings of traditional African music are now possible with advanced recording techniques.

7. INSTRUMENTS

Other percussion instruments such as clappers, maracas, scrapers, gongs and xylophones (called **BALAFONS**) produce their sound by vibration and are known as **IDIOPHONES**.

Stringed instruments (**CHORDOPHONES**) such as bows, lyres, zithers, harps and the **KORA** are popular as well as some woodwind instruments (**AEROPHONES**) such as whistles, flutes, reed pipes, trumpets and horns.

Challenge!
Draw and label these African instruments.

BALAFON   MBRIA   FLUTE   GOURD   MARACAS   KORA

8. Jazz and blues Keywords

RIFF/OSTINATO – Short, repeated musical patterns often used in SOLOS.

IMPROVISATION – music created 'on the spot' (previously unprepared performance)

SWING/SWUNG RHYTHM – performing a regular 'straight' rhythm with a 'lilt'

9. Blues Scale

A series of notes often used within improvisations in blues music. BLUE NOTES – additional or extra sharpened or flattened notes in a melody.
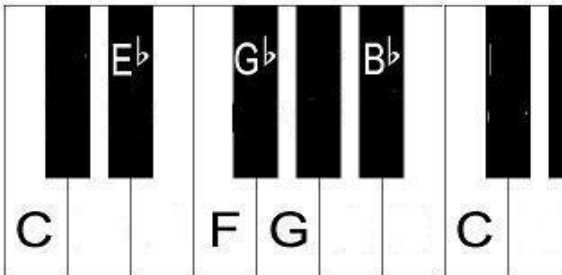
10. Work-songs, Spirituals

WORK-SONGS & SPIRITUALS

Combined African SYNCOPATIONS and POLYRHYTHMS with hymn-tunes from the white settlers from Europe.

Based on African CALL AND RESPONSE pattern with a leader (UNISON) singing the "call" answered by a chorus (HARMONY) singing the "response".

Lots of repetition and a steady, constant pulse to reflect the nature of the monotonous work being done.
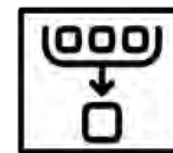
Challenge!

Listen to famous pop songs.

Make a list of any that you think use the Blues scale.

11. Ragtime

Performed on a solo piano with a leaping VAMP accompaniment in the left hand against SYNCOPATED offbeat and CHROMATIC melodies in the right hand.

Scott Joplin was the most famous ragtime composer whose works include: "The Entertainer" and "Maple Leaf Rag".

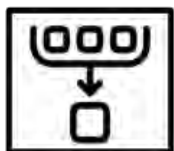VAMP – An accompaniment figure consisting of a bass note followed by a chord

CHROMATIC – When a melody moves in steps of a Semitone, E.g. using both the black and white keys on a keyboard.

12. The 12 Bar Blues

Built on the chord progression using chords I, IV & V with SEVENTH CHORDS used. Uses the BLUES SCALE for vocal and instrumental IMPROVISATIONS.

Melodies are often SYNCOPATED with instrumental BREAKS at the end of each line.

Three lines of LYRIC in each VERSE usually with an AAB structure.

13. The 12 Bar Blues

Typical 12 Bar Blues

CHORD I	CHORD I	CHORD I	CHORD I
CHORD IV	CHORD IV	CHORD I	CHORD I
CHORD V	CHORD IV	CHORD I	CHORD I

14. The 12 Bar Blues

Typical 12 Bar Blues in C Major

C	C	C	C
F	F	C	C
G	F	C	C

Mathematics

1. Writing and Standard Algebraic Notation

Write an expression for each of the following descriptions

Find the key word in the description that tells you what operation to use

$+17$
(a) 17 more than a
$a + 17$

$- b$
(b) b less than 23
$23 - b$

$\times 6$
(c) 6 lots of c
$c \times 6 = 6c$

$\div$
(d) d divided by e
$d \div e = \dfrac{d}{e}$

Simplify these expressions so they are in **good algebra**

Bad Algebra	Good Algebra
$g7$	$7g$
$9 \times g$	$9g$
$g \div 5$	$\dfrac{g}{5}$
$1g$	g

The number will always come in front of the letter when they are multiplied like this.

We do not need to include the × between a number and letter

We write divisions as fractions.

If you have 1 lot of something you do not need to include the 1.

2. Simplifying Expressions

Simplify expressions by **collecting like terms**

$a = 1a$

Only collect like terms.

Simplify

i) $2a + a + 3a + 2b - b$ → $6a + b$
$6a$ $+b$

a and b are **not like terms** so leave the answer as as $6a + b$.

$3a - a = 2a$

ii) $3a + 2b + b - a$ → $2a + 3b$

Remember that this is $-a$ not just a

$+2b + b = +3b$
$10a^2 + 2a^2 = 12a^2$

iii) $10a^2 - 2ab + 2a^2 - ab$ → $12a^2 - 3ab$

$-2ab - ab = -3ab$

First collect the a^2 terms and the ab terms

Simplify expressions by multiplying **terms**

(a) $m \times b \times p$

The letters go in alphabetical order → $= bmp$

We don't need the multiply signs between them

(b) $3f \times 5f$

First multiply the two numbers together. → $= 15f^2$

... then $f \times f = f^2$

(c) $3w^2 \times 4w^3$

First multiply the two numbers together. → $= 12w^5$

... then
$w^2 \times w^3$
$= w \times w \times w \times w \times w$
$= w^5$

3. Index Laws

Indices also called **powers**, this the number of times a term (number or letter) is **multiplied** by **itself**.

The powers of x:

$x^1 = x$
$x^2 = x \times x$
$x^3 = x \times x \times x$
$x^4 = x \times x \times x \times x$

Using the **three index laws** to simplify expressions

$$a^m \times a^n = a^{m+n}$$
$$(a^m)^n = a^{m \times n}$$
$$a^m \div a^n = a^{m-n}$$

Work out $4a^2 \times 3a^7$

Multiply the numbers

Add the indices

$= 12a^9$

Work out $16b^9 \div 4b^3$

Divide the numbers

$= 4b^6$

Subtract the indices

Work out $\left(4c^5\right)^3$

You must cube the 4 as well

$= 64c^{15}$

Multiply the indices

4. Solving Equations and Substitution

Solving equations formally by using 1 or 2 **inverse operations**

Solve for x $3x - 2 = 31$

The same must always be done to both sides of the equation

You must do the opposite (+2) to remove the -2.

$3x - 2 = 31$

$+2 \qquad +2$

$3x = 33$

This means ×3 so the opposite is ÷3

$÷3 \qquad ÷3$

$x = 11$

Solve for x $12 - x = 7$

Because x is negative

$12 - x = 7$

$+x \qquad +x$

$12 = 7 + x$

$-7 \qquad -7$

$5 = x$

Substitute positive and negative, whole or decimal values into **expressions** or **formulae** and **evaluate**

Given that $p = 5$, $q = 4$ and $r = -2$
Work out the value of $pq - 5r$

Replace each letter with the number given in the question.

$pq - 5r$

...then use BIDMAS to work out the answer.

$= 5 × 4 - 5 × -2$

$= 20 + 10$

A negative multiplied by a negative will make a positive.

$= 30$

Work out the value of $\frac{p(q-3)}{4}$ when $p = 2$ and $q = -7$

This means 2 multiplied by the bracket

$= \frac{2(-7-3)}{4}$

$= \frac{2(-10)}{4} = \frac{2 × -10}{4}$

A negative and a positive give a NEGATIVE answer

$= \frac{-20}{4} = -5$

5. Expanding Brackets and Solving Equations with Brackets

Expand single **brackets**

Expand $4(3x + 5)$

Expand means to multiple out the brackets

$4(3x + 5)$

$4 × 3x = 12x$

$4 × 5 = 20$ $12x + 20$

Expand and simplify $2(y - 2) - 5(2y - 1)$

Expand each bracket

$2(y - 2) - 5(2y - 1)$

The second bracket is being multiplied by '– 5'

$2y - 4 - 10y + 5$

... then simplify

$-8y + 1$

Solve equations with **brackets**

Solve

$4(3y + 5) = 44$

Expand (multiply out) the brackets. Revisit **40a** if you need a worked example.

$4(3y + 5) = 44$

$-20 \quad | \quad 12y + 20 = 44 \quad | \quad -20$

$÷12 \quad | \quad 12y = 24 \quad | \quad ÷12$

$y = 2$

Balance the equation by using **inverse** operations. Revisit **32a** if you need a worked example.

Solve

$2(20 - 2f) = 45$

$2(20 - 2f) = 45$

$-40 \quad | \quad 40 - 4f = 45 \quad | \quad -40$

$÷-4 \quad | \quad -4f = 5 \quad | \quad ÷-4$
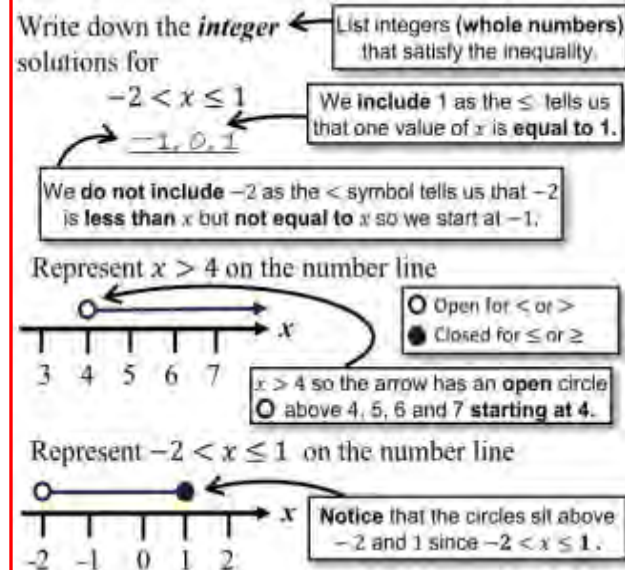
$f = -\frac{5}{4}$

A common error is forgetting that it is $-4f$ not $4f$.

6. Inequalities

Listing **integers** that satisfy **inequalities** and representing inequalities on a number line.

An **integer** is a **whole number**.

Write down the *integer* solutions for

List integers (whole numbers) that satisfy the inequality.

$-2 < x \leq 1$

$-1, 0, 1$

We **include** 1 as the $\leq$ tells us that one value of x is equal to 1.

We **do not include** -2 as the $<$ symbol tells us that -2 is **less than** x but **not equal to** x so we start at -1.

Represent $x > 4$ on the number line

○ Open for $<$ or $>$
● Closed for $\leq$ or $\geq$

3 4 5 6 7

$x > 4$ so the arrow has an **open circle** above 4, 5, 6 and 7 **starting at 4.**

Represent $-2 < x \leq 1$ on the number line

-2 -1 0 1 2

Notice that the circles sit above -2 and 1 since $-2 < x \leq 1$.

7. Solve Equations with x on Both Sides

Solve **equations** and **inequalities** with **x on both sides** of the equal sign

Solve for x $3x + 3 = 18 - 2x$

> Find the smallest number of x's

$3x + 3 = 18 - 2x$

+2 ... +2x

$5x + 3 = 18$

-3 ... -3

> Now the x's are on one side - 3

$5x = 15$

÷5 ... ÷5

$x = 3$

$$d - 12 \leq -18$$

$$d - 12 \leq -18$$
$$+ 12 \quad\quad + 12$$
$$d \quad \leq \quad -6$$

Add 12 to both sides.

8. Expressions with Brackets and Forming and Solving Equations From Worded Problems

Expand and **simplify** expressions with **multiple single brackets**

Expand and simplify $2(x + 7) + 3(x + 1)$

$2(x + 7) + 3(x + 1)$

> Expand each bracket

$2x + 14 + 3x + 3$

> ... then simplify

$5x + 17$

Expand and simplify $2(y - 2) - 5(2y - 1)$

$2(y - 2) - 5(2y - 1)$

> Expand each bracket

> The second bracket is being multiplied by '- 5'

$2y - 4 - 10y + 5$

> ... then simplify

$-8y + 1$

Form and **solve equations** arising from shape, measure or word problems

The perimeter of this rectangle is 52cm.
Form an equation to find the value of x.

Perimeter =
$x + 2x + 5 + x + 2x + 5$
$= 6x + 10$
So $6x + 10 = 52$
$6x = 42,$ so $x = 7$

(rectangle labelled: x, 2x + 5)

Bob is 2 years older than Anna.   Anna : x
Chris is twice as old as Anna.   Bob: x + 2
Their total age is 18.   Chris 2x
How old is Anna?

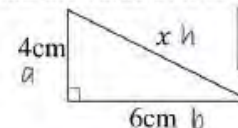Total age = $x + x + 2 + 2x = 4x + 2$
So $4x + 2 = 18$
$4x = 16$ so $x = 4$ Anna is 4

9. Pythagoras

Use **Pythagoras' theorem** to find the **hypotenuse** or **short side** or check if a triangle is right-angled.

Find the value of x to 2 d.p

> Pythagoras
> $a^2 + b^2 = h^2$
> h = Hypotenuse

(triangle: 4cm = a, 6cm = b, x = h)

> Label the sides
> Substitute into the formula and solve

$h^2 = 4^2 + 6^2 = 16 + 36 = 50$
$h = \sqrt{50} = 7.07$

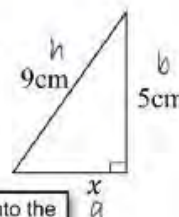Find the value of x to 2 d.p

(triangle: 9cm = h, 5cm = b, x = a)

$a^2 + 5^2 = 9^2$
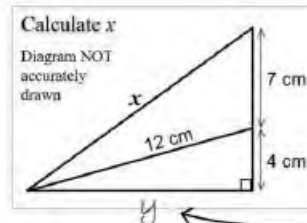$a^2 + 25 = 81$
$a^2 = 81 - 25 = 56$
$a = \sqrt{56} = 7.48$

> Label the sides
> Substitute into the formula and solve

Solve problems requiring either multiple steps of **Pythagoras** or amending a diagram to find a **right-angled triangle**.

Calculate x
Diagram NOT accurately drawn
(triangle: 7 cm, 4 cm, 12 cm, x, y)

> Pythagoras
> $a^2 + b^2 = h^2$
> h = Hypotenuse

> Give information missing a letter

Small triangle:
$y^2 = 12^2 - 4^2$
$y = 11.31cm$

Large triangle:
$x^2 = y^2 + (7+4)^2$
$x = 15.78cm$

> 2 d.p.

10. Factors and Multiples

Find the **HCF (highest common factor)** by listing **factors** or **LCM (lowest common multiple)** by listing **multiples**

Find the **highest common factor** of 12 and 18.

12 – 1, 2, 3, 4, (6), 12 — List all of their factors, then find the biggest number in both lists.

18 – 1, 2, 3, (6), 9, 18

Highest common factor of 12 and 18 is 6

Find the **lowest common multiple** of 12 and 18.

12 – 12, 24, (36), 48, 60, 72 — List their multiples until you find the smallest number in both lists.

18 – 18, (36), 54,

Lowest common multiple of 12 and 18 is 36

Use **HCF** or **LCM** in **context**

Helen has to take a green tablet every 6 hours and red tablet every 5 hours.
At 10:00 am on Monday she takes both tablets together. When will she next have to take both tablets together?

5	6
10	12
15	18
20	24
25	(30)
(30)	36
35	

30 hours = 1 day and 6 hours

Tuesday 4:00 pm

11. Product of Primes

Product means **multiply** so we use a multiplication sign (x)

A **prime number** is a number that only has **two factors** (1 and itself)

Write a number as a **product of prime** numbers using a **factor tree**

Write 72 as a product of its prime factors

Circle each prime number

These 2 multiply to make 72

These 2 multiply to make 36

$72 = 2 \times 2 \times 2 \times 3 \times 3$
$= 2^3 \times 3^2$

Write as powers

All of the prime factors multiplied together

12. Using a Venn Diagram for LCM and HCF

Given that:
$72 = 2 \times 2 \times 2 \times 3 \times 3$
$180 = 2 \times 2 \times 3 \times 3 \times 5$
Find the Highest Common Factor of 72 and 180

$HCF = 2 \times 2 \times 3 \times 3 = 36$

HCF is all of the numbers in the middle multiplied together

Given that:
$72 = 2 \times 2 \times 2 \times 3 \times 3$
$180 = 2 \times 2 \times 3 \times 3 \times 5$
Find the Lowest Common Multiple of 72 and 180

$LCM = 2 \times 2 \times 2 \times 3 \times 3 \times 5 = 360$

Use each number in the Venn diagram once each

13. Standard Form

Converting small and **large numbers** to and from **standard form**

(a) Write these in standard form:

There are 4 digits after 6

(i) $60\,000 = 6 \times 10^4$

Must be between 1 and 10

(ii) $756\,000\,000 = 7.56 \times 10^8$

(b) Write these as normal numbers

(i) $4 \times 10^6 = 4\,000\,000$

Multiply 4 by 10 six times

(ii) $3.456 \times 10^4 = 34\,560$

Multiply 3.456 by 10 four times

Write 1.4×10^{-6} as an ordinary (decimal) number

Start with the decimal

1.4×10^{-6}

1.4

...now move the decimal point. The index part is -6 so move 6 places **left**, filling in with zeros

0.0000014

Write 0.00056 in standard form

First find the number at the start, it must be less than 10

0.00056

...then work out how many times the decimal point needs to move to make it 5.6 and that is the index.

5.6

5.6×10^{-4}

14. Symmetry

Draw all the **lines of symmetry** on 2D Shapes

Watch out for **diagonal** lines of symmetry!

Try turning the paper to find all the lines

A parallelogram might look symmetrical but it has **no lines of symmetry**

State the order of **rotational symmetry** of a 2D shape and show what a shape would look like rotated by 90 or 180 degrees.

1   2   3   4

The **order of rotational symmetry** is the number of part turns a shape can make and still look the same.

Put a **dot** on one corner to act as your **point of rotation**.

The order of rotational symmetry is 4.

1

The **minimum** order of rotational symmetry a shape can have is 1.

The order of rotational symmetry is 1.

Drama

1. Known to original tales

In year 7, you were given stories to make characters for and perform those already made stories.

In year 8, we are going to begin looking at making our own stories with our own characters.

Elements needed in a story:

- Characters
- Setting
- Plot
- Action/Conflict
- Theme
- Style
- Ending (Solution)

Think about how these can make a story arc.

2. Building an original story

To make your own story, it helps to start by knowing the themes you are going to use and how the story should end. (WORK BACKWARDS IN THE STORY!)

Theme – An idea or subject topic that comes up constantly during a performance or piece of writing.

Once you know the theme and ending you want, you need to think about the journey you want to show for the characters. The way you do this could be by following a genre and/or style.

Style – **The way work is performed**. Is it through mime or through a story book style?

Genre – The type of story that follows the normal parts of the genre. Fiction vs non-fiction.

3. Techniques linked to improvisation

Improvisation – Making something up on the spot without planning it.

Improvisation can become slow, and difficult, but there are ways to help you make a story with sentence starters.

Fortunately/Unfortunately – Starting each sentence with fortunately (or unfortunately), continuing the story on until a natural end.

Yes, and… - Each sentence begins with yes, and. You build on from what the previous sentence says. This allows a story to be made about the same story.

REMEMBER, you cannot plan out or change what has already been done. It is **improvisation**.

4. Drama techniques and acting skills

Techniques

Define these drama techniques
Eye-witness
News report
Flashback + Flashforward
Fortunately/Unfortunately

Type of acting skill	Examples		
Voice	Emphasis	Volume	Pace
Movement	Gesture	Posture	Eye Contact
Showing Emotion	Facial Expression	Tone	Body language

5. Given Circumstances

The six major questions in any story we ask ourselves is:

WHO? – Which characters are speaking. And which characters are they speaking to?

WHAT? – Knowing the events and action happening. The story being clear.

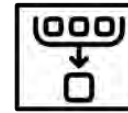**WHEN?** – Knowing what time the story is taking place. What year is it? How do we know?

WHERE? – What is the setting. Which location are we at?

WHY? – Is the reason clear for the action happening? Do we know the reasons?

HOW? – What is the way you show the events? What is the solution to the story?

6. Purpose and style

What are you trying to get your audience to feel and think **during** and **after** the performance?

If you are being factual, you should:
- Directly addressing the audience in character
- Create a stern character who is focused on the facts, and stay in that character
- Be certain on the given circumstances
- Try to avoid being funny, otherwise the point of the performance becomes confusing

If you are being entertaining, you should:
- Adding moments of sound effects (poor signal with the studio)
- Using exaggeration with your acting skills
- Make the given circumstances unusual
- Be serious, this can make the situation so much funnier
- Stay in character

Juxtaposition - two things being seen or placed close together that are opposites

Planning your performance with the audience in mind is important for an effective performance.

7. Assessment

In Drama **we mark you on three skills – Create, Perform, Respond.**

In these three areas we give you an overall mark out of **20 for each half-term**.

Things that will **help** you do well in lessons and get those top marks is:

1. **Working well with others and listening to ideas.**
2. **Being on task and trying to make sure the performance is what the task is asking for.**
3. **The bigger and more exaggerated your acting is, the better. If it follows 2.**

Tips to get maximum marks:

Face the audience
Stay in character
Focused working
Use of the performance space
Clear characterization
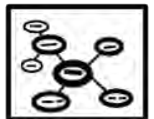
Challenge!
Write an advice column about how to perform an original story.

Drama

8. 'Macbeth'

Macbeth is a **tragedy**, following the story of a Scottish warrior who chooses to follow **guidance** from **Witches**.

A **brave** and **loyal warrior** turns into a **murderous tyrant** to become King.

Theme – Main topics or focuses in a story

Tragedy – A play with an unhappy ending. Focused on the downfall of a main character

9. Main characters

Macbeth - A **brave Scottish general** in King Duncan's army. With his wife's help and encouragement, he **kills King Duncan**. This fills him with deep **regret** and **guilt**.

Lady Macbeth – **Encourages** Macbeth to **commit murder**. Her guilt soon turns her **mad**. She sleepwalks as she **tries to wash out the invisible bloodstains on her hands**.

The Witches – A **trio** of **supernatural** women who **tell the future**.

10. Drama techniques

Monologue – A long speech from one character

Soliloquy – A speech where a character speaks aloud the thoughts they have

Choral speaking – A group of people speaking together at the same time.

Stage layouts – How the stage and audience are positioned.

11. Acting skills

Intensity – Acting to show deep emotion. Extremes of acting skills

Clarity – Clearly saying the words

Emphasis – Putting pressure on words to highlight them

Extreme reactions – Responding to something exaggeratively

12. Reading Shakespeare

Shakespearean language can be a challenge to read and speak, at first. But the poetry makes the dialogue memorable:
e.g. *By the pricking of my thumbs, Something wicked this way comes.*

Circling or highlighting **new words** can be a useful way to understand the basic ideas in sentences.
Using synonyms alongside difficult words can help you perform with the old language more effectively.

Thy	Your	Hail	Worship / Respect
Thou / Thee / Ye	You	Thane	Military rank
Ere	Before	Treason	An attack on the king

13/14. Tips for performing while making the story clear

Character Profiling – Make sure you **know** enough about **the character you are playing**.

Check the language – If you do not know what you are saying, **how can you perform effectively with acting skills**.

Tragic theme – This is an **extreme** play with a **sad ending**…make the murders and **death negative and exaggerated**. THIS IS NOT A COMEDY!

Be obvious with your acting so it is **easier to follow as an audience member**. If there is a dagger…, where is it? Use eye contact, gestures, directions…

Computing

2. Vector and Bitmap graphics

Keywords

Node	Anchor point
Stroke	PDF
Fill	Illustrator
Outline	SVG
Control handle	

4. Graphic Techniques

Keywords

DPI (Dots per inch)	Magic wand
PPI (Pixels per inch)	Eyedropper
Image compression	Brush tool
Lossless	Eraser tool
Lossy	Colour picker

1. Types of graphics

Keywords

Vector	Analogous
Bitmap	Pixel
Properties	Bit
Scalable	Byte

Monochromatic colour scheme
Complimentary colour scheme

3. Graphic Techniques

Keywords

Gradient fill effects	Layer
Saturation	White space
Brightness	Raster
Contrast	Colour depth
Resolution	

5. Graphic Techniques

Keywords

Spot healing brush	Hue
Blur tool	Colour balance
Clone tool	Invert
Type tool	Photofilter
Brightness	Adjustment layer

Computing

7. Spreadsheet basics

Keywords

Model	Importing
Simulation	Cell
Spreadsheet	Cell reference
Sheet	Formula
Template	Row
Duplicating	

9. Developing Spreadsheet skills

Keywords

VLOOKUP function	Validation
Relative reference	Spreadsheet macro
Absolute reference	COUNTIF function
Profit	Hyperlinks
IF function	Sheet protection
SUMIF function	

6. Graphic Techniques

Keywords

White balance	Polygon lasso
Levels	Layers
Shape tool	Raster mask
Clipping mask	Render
Magic cut tool	Pen tool

8. Formulas and Functions

Keywords

Column	SUM function
Format	Merge
Format painter	Autofill
Decimal	Pie chart
Integer	Spreadsheet range
Currency	

10-14. Using spreadsheets

Please complete the following tasks using your **ePortfolio booklet**.

Task 1 – Ensure any **worksheets** you started in class this week are complete (use the class presentation to support you).

Task 2 – Finish any **retrieval tasks** which are incomplete from the week's lesson. (Use the presentation from the previous lesson).

Task 3 – Complete any **purple pen** improvements you have been advised to do using the purple font. (Use the Google classroom to support you).

1. Keywords

Keyword	Meaning
Buoyancy	The force pushing an object upwards when placed in a fluid.
Surface Pressure	The pressure pushing down on a surface. Affected by the size of the force and the size of the contact area.
Air Pressure	Pressure created by the force of air particles hitting a surface.
Speed	How quickly an object moves.
Moment	A force moving around a pivot. Moving further from the pivot increases the size of the moment.

2. Pressure

The pressure applied on a surface is affected by the size of the force and the size of the area.

Pressure = Force / Surface Area

The weight of the person does not change

Snowshoes increase contact area.

Surface pressure decreases.

3. Speed and Acceleration

Speed is a measure of how far an object moves in a certain time, the units we normally use are metres per second (m/s).
To calculate speed we use the formula **SPEED = DISTANCE/TIME**

Acceleration tells us how quickly the speed of an object is changing. We calculate it using the formula **ACCELERATION = CHANGE IN SPEED/TIME**

Example Question
Q: A cyclist travels **3600m in 20mins** and a runner travels **160m in 30 seconds**, who has the greater speed?
A: Runner (160/30= 5.33m/s), Cyclist (3600/(20*60) = 3m/s) - **UNITS!!**

Make two drawings, one to remember SPEED and one to remember ACCELERATION

4. Distance-Time Graphs

What does a straight line (diagonal) mean on a distance-time graph?
A straight line shows that an object is travelling at a constant speed
What does a horizontal line on a distance-time graph mean?
A horizontal line shows that an object is stationary
How can you calculate the speed of an object from a section of a line on the distance-time graph?
The gradient of the line is the speed of the object - link to maths skills
If you were shown a distance-time graph for two objects, how could you quickly tell which one was moving quicker?
The object with the steeper line (meaning more distance has been covered every second)
What does it mean if the line on a distance-time graph is going down rather than up?
It means that the object is returning towards the start point (the distance between them is decreasing)
How can you show increasing speed (acceleration) on a distance-time graph?
Acceleration is shown by a curved (upwards) line.

Science – Biology

5&6 . Keywords

Key word	Definition
Respiration	Chemical reaction inside all living cells that <u>releases</u> energy
Aerobic Respiration	Respiration that requires <u>oxygen</u>. Occurs in the mitochondria.
Anaerobic Respiration	Respiration that occurs when sufficient oxygen isn't present. Releases less energy than aerobic.
Fermentation	Anaerobic respiration that occurs in yeast. Produces ethanol and carbon dioxide. Used in baking and brewing.
Mitochondria	Organelle where aerobic respiration occurs.
Lactic Acid	Product of anaerobic respiration in animals. Causes soreness in muscles resulting in fatigue.
Photosynthesis	Process that occurs in plants which produces glucose and oxygen.
Chloroplast	Organelle where photosynthesis occurs.

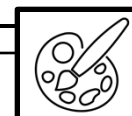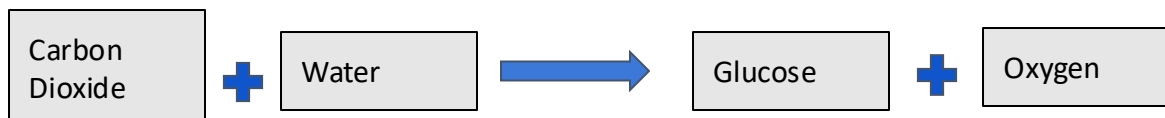## 7&8. Chemical Equations

Aerobic Respiration

Glucose ✚ Oxygen → Carbon Dioxide ✚ Water

Anaerobic Respiration (animals)

Glucose → Lactic Acid

Anaerobic Respiration (yeast)

Glucose → Ethanol ✚ Carbon Dioxide

Photosynthesis

Carbon Dioxide ✚ Water → Glucose ✚ Oxygen

9. Testing for Starch

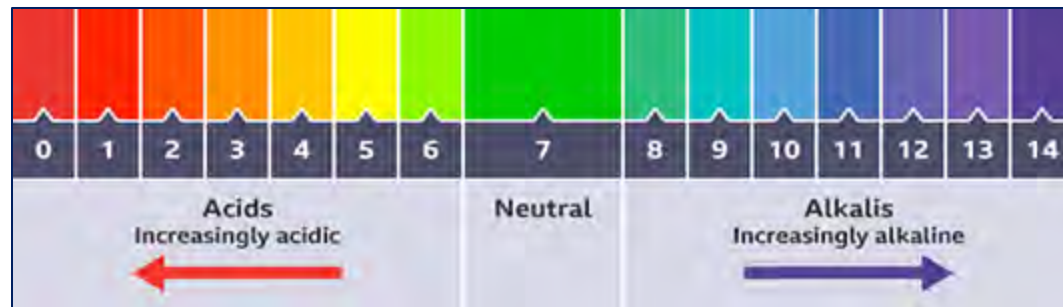| 1 - Place leaf into hot water	2 - Add leaf to warm ethanol	3 - Return leaf to hot water	4 - Drop iodine on to the leaf.
Why? To breakdown the cell walls	Why? To remove the chlorophyll	Why? To remove the ethanol	Why? To show the presence of starch.

10. The pH Scale

The pH scale is a scale to show how acidic/ alkali a substance is.

Acid = 0 – 6

Neutral = 7

Alkali = 8 - 14

11. Indicators

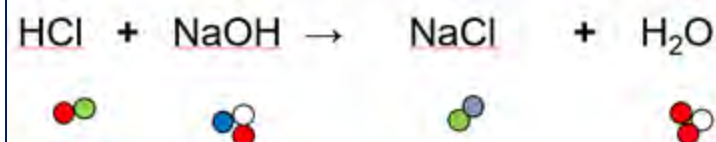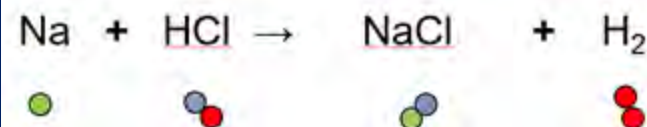| Litmus Paper	Acid – Red Alkali – Blue
Universal Indicator	Strong acid - Red Weak acid – Orange / yellow Neutral - Green Weak Alkali - Blue Strong Alkali - Purple
Phenolphthalein	Acid – Colourless Alkali - Pink

12. Neutralisation

Acid + Alkali → Neutral salt + Water

$$HCl + NaOH \rightarrow NaCl + H_2O$$

13. Metals Reacting with Acids

Metal + Acid → Salt + Hydrogen

$$Na + HCl \rightarrow NaCl + H_2$$

14. Carbonates Reacting with Acids

Metal Carbonate + Acid → Metal salt + Water + Carbon Dioxide

$$CaCO_3 + HCl \rightarrow CaCl_2 + H_2O + CO_2$$

PE

1. Muscles

Anterior view of the body

Area of the body	Muscle name
Shoulder	Deltoid
Front of arm	Bicep
Stomach	Abdominals
Front of thigh	Quadriceps
Chest	Pectorals

Key word **Anterior** = Front

Challenge!
Research more anterior muscles.

2. Muscles

Posterior view of the body

Area of the body	Muscle name
Upper back	Trapezius
Back of arm	Tricep
Mid back	Latissimus Dorsi
Posterior	Gluteals
Back of upper leg	Hamstring
Back of calf	Gastrocnemius

Challenge!

Research more posterior muscles.

Keyword **Posterior** = Back

3. How muscles work

Muscles create all movement in the human body.

- **Tendons** attach muscles to bones.
- Muscles **contract** and **pull** bones to make the skeleton move where **bones** meet to form a **joint**.
- Muscles work in pairs.
- Muscles cannot push.
- Muscles use **energy** from the food we consume to contract.

Challenge!
Label your picture from memory.

4. Types of Muscle Contraction

Muscle Contractions	
Term	Description
Isotonic	Muscle action where the muscle changes length – causes movement.
Isometric	Muscle action where the muscle stay the same. Eg. Balances.
Concentric	Isotonic contraction where muscle shortens.
Eccentric	Isotonic contraction where muscle lengthens.

5 & 6 Antagonistic Muscle Pairs

Muscles work in pairs to create movement. This is known as antagonistic pairs.

One muscle of the pair **contracts** to move the body part, whilst the other **relaxes**. They then swap roles to return the body part back to the original position.

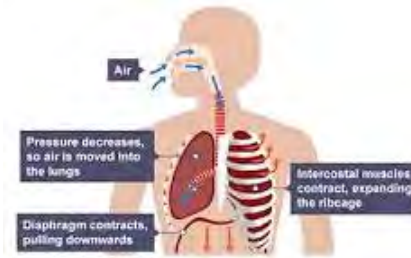Contracted biceps muscle

Relaxed triceps muscle
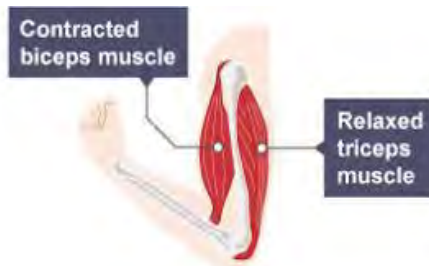
Agonist = muscle that is contracting

Antagonist = muscle that is relaxing

7. Inhalation

Inhalation is the process which draws oxygen into our bodies.

Air

Pressure decreases, so air is moved into the lungs

Intercostal muscles contract, expanding the ribcage

Diaphragm contracts, pulling downwards

The diaphragm contracts and moves down

The external intercostals contract to

Lift and rotate the ribs

Lift the sternum

Lift the thoracic vertebrae

The lungs stretch out following the movement of the diaphragm and ribcage

The pressure inside the lungs is now lower then the pressure outside

Air gets pulled into the lungs

The diaphragm pushes down on abdominal contents

The abdomen expands

8. Exhalation

Exhalation (or expiration) is the flow of the breath out of an organism.

The lungs recoil (the elastic lung tissue returns to its normal size after being stretched on inhalation)

The rib cage gets pulled inward

The diaphragm gets pulled upward

The pressure inside the lungs is now higher than the pressure outside

The air is forced out of the respiratory tract

The diaphragm no longer pushes on the abdominal contents

The abdomen pulls in

9. Respiratory System: Pathway of Air

1. Air enters the body through the **nose** or **mouth**.

2. It then enters the **trachea.**

3. The **trachea** then divides into two **bronchi**. One **bronchus** enters each lung

4. Each **bronchus** branches out into small tubes called **bronchioles**, which the air travels through.

5. At the end of the **bronchioles** are tiny air sacks called **alveoli.**

6. This is where the **gaseous exchange** happens.

Composition of air
Breathed in:
21% oxygen
0.03% carbon dioxide.
Breathed out: 16% oxygen
4% carbon dioxide.

10. Cardiovascular system

The cardiovascular system consists of the heart, arteries, veins, and capillaries.

The four major functions of the cardiovascular system are:

To transport nutrients, gases and waste products around the body.

To protect the body from infection and blood loss.

To help the body maintain a constant body temperature ('thermoregulation')

To help maintain fluid balance within the body.
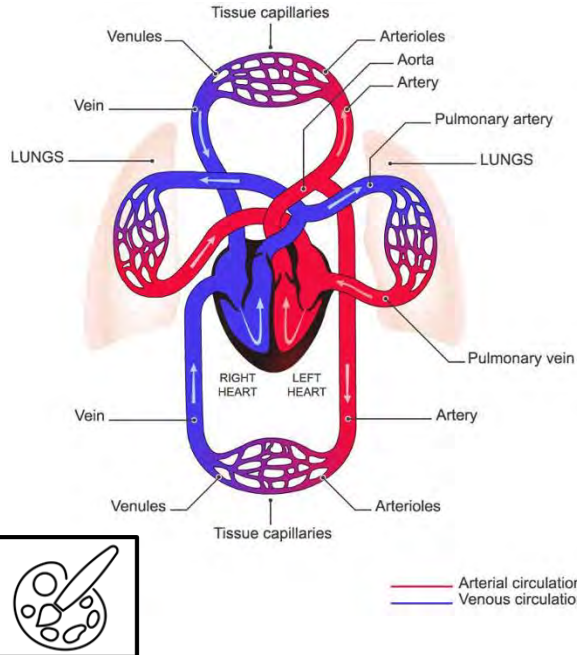
11. Effects of Exercise on the body

Immediate Effects (start of exercise)
- **Increased Heart Rate:** The heart beats faster and more forcefully to pump more blood to the muscles.
- **Increased Stroke Volume:** Each heartbeat pumps more blood, increasing the efficiency of the heart.

12. Effects of Exercise on the body

- **Increased Breathing Rate:** The body breathes more quickly and deeply to take in more oxygen and expel carbon dioxide.
- **Increased Body Temperature:** Muscle contractions produce heat, raising the body's temperature.

13. Effects of Exercise on the body

Short Term Effects (0-36 hours after)

- **Tiredness and Fatigue:** Muscles may feel fatigued due to the build-up of waste products.
- **Aching and Delayed Onset Muscle Soreness (DOMS):** Small tears in muscle fibers can cause soreness and stiffness, especially in the days following exercise.
- **Muscle Cramps:** Involuntary muscle contractions can cause cramps.

14. Effects of Exercise on the body

Long Term Effects (long term adaptions through regular exercise)

- **Hypertrophy:** Your muscles will increase In size and strength
- **Change body shape:** either by losing body fat or gaining muscle

*Fatigue = tiredness

*DOMS = delayed onset muscle

Challenge!
Write an advice leaflet on how best to care for your muscles before, during and after exercise.

1. How large is Islam?

Islam is the second largest religion in the world with over 1.8 billion followers worldwide.

2. Islam

Islam is one of the three monotheistic religions – this means followers of Islam only believe there is one God.

Followers of Islam are called Muslims. There are two main denominations of Muslims they are called Sunni and Shi'ah Muslims. The Arabic word for God is Allah.

There are some similarities between Islam, Christianity and Judaism such as the belief in certain prophets, such as Moses. As well as there being a chapter in their Holy book about Mary. It is disrespectful to draw or depict Allah or the Prophet Muhammad (pbuh). A religious leader in Islam is called an Imam.

3: Importance of the Mosque

The mosque is the Muslim place of worship. This is where Muslims will gather with others to pray and worship Allah. Muslims believe worshipping with other believers is very important "worship with the congregation is 27 times better than by oneself" Any building can be a mosque – it just needs to be a clean place for people to pray. As well as praying to Allah, the mosque is an important place for building and developing the ummah. Lots of activities will take place at a mosque: - teaching about Islam - Arabic lessons - learning the Quran - weddings – funerals.

4. The Five Pillars of Islam.

The Five Pillars of Islam are the obligations that Muslims must satisfy to live a good and responsible life and to bring them closer to God.

They are; Shahadah - Declaration of faith. Salat - performing set prayers five times a day at specific times. Zakat - giving a portion of one's income, to charity. Sawm - fasting during the month of Ramadan, Hajj - annual pilgrimage to Mecca made during the twelfth month of the Islamic calendar.
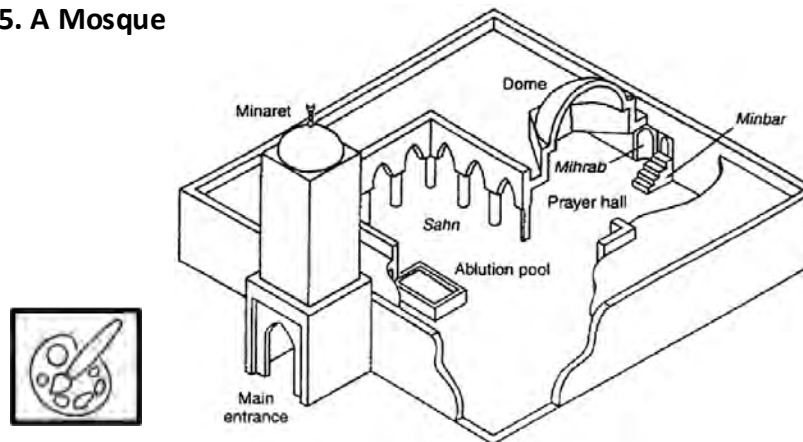
5. A Mosque

6. Features of a Mosque

A Mosque is the Holy building for Muslims. It is where Muslims come together to pray, worship and celebrate as a community.

- Wudu room: Ritual washroom. Prayer Hall.
- Dome: Represents the universe and Allah's power as creator of all.
- Mihrab: a niche in a mosque qibla wall, to show the direction of Mecca.

7. Islamic Festivals

Id-ul-Adha: Festival of sacrifice. Celebrated after Hajj to Mecca.

Ramadan: Ninth month of the Islamic calendar where fasting and prayer take focus.

Id-ul-Fitr: This festival occurs at the end of Ramadan. It is a joyful festival. It is a day of thanksgiving to Allah.

RPE

8. Food Laws

Halal is food that is allowed to be eaten, as it is lawful and has been prepared correctly, Haram is products that are forbidden such as pork and alcohol.

9. The Qur'an

Muslims believe that the Qur'an is the direct word of Allah revealed to Muhammad (PBUH) by the Angel Jibril. Due to this, it is completely different to any other book. The Qur'an is written in Arabic.

The Qur'an (sometimes spelt Koran) must be treated with respect as it is seen as the word of Allah.

To show the Qur'an respect it must be kept on a high shelf, anyone who touches it must be clean and any damaged copies must be buries in a cloth not thrown away.

10. Key words

Islamophobia: A dislike, discrimination or prejudgment against Islam or Muslims

PBUH: Peace be upon him - This term is used as a sign of respect after the Prophet Muhammad's name.

Jihad: Personal struggle against evil and following Allah's way.

Wudu: Ritual washing before prayer.

11. Key words

Salah: Five daily prayers – night prayer, dawn prayer, after midday prayer, late afternoon prayer, and after sunset prayer.

Adhan: The Call to Prayer. Rak'ahs: Set pattern of movements and postures/ prostrations for prayer.

12. Prophet Muhammad

Born around the year 570 AD, in Mecca.

He was raised by his grandfather and uncle.

He is the final Prophet in Islam and is the messenger of Allah.

Prophet Muhammad (pbuh) received special messages from God these messages were brought to him by the archangel Jibril over a twenty-year period.

Muhammad taught others that worshiping many statues was bad and that they should only worship one God, Allah.

Challenge!
Justify the reasons why Muhammad (Pbuh) changed Islam.

13. Ramadan

Ramadan is the ninth month of the Islamic calendar and a period of fasting, worship, reflection, and community for Muslims worldwide.

It's a time for spiritual development, strengthening one's connection with God, and practicing self-discipline and empathy.

Key aspects of Ramadan include fasting from dawn to sunset, increased prayer, reciting the Quran, and celebrating the breaking of the fast with Eid al-Fitr.
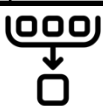
14. Religious clothing

Many Muslim women chose to wear certain types of clothing as a sign of respect and modesty. This may include a headscarf called a hijab. Some women might wear a long loose dress called a jilbab, or a face covering called a niqab. Men will sometimes wear a cap called a topi, especially when they're praying.

1. Keywords spelling/definition test.

C.A.D	C.A.D stands for **Computer Aided Design**, this means that a design is drawn in either 2D or 3D using a computer program such as 2D design, AutoCAD, Onshape or any other software that allows you to create a drawing using a computer.
C.A.M	C.A.M stands for **Computer Aided Manufacture**. Computer aided manufacture (CAM) involves using computers to control machines to produce 3D parts or products. By using CAM, designs can be created using CAM machines such as laser cutters, 3D printers and milling machines.
C.N.C	**Computer Numerical Control** (CNC) machining is a manufacturing process in which pre-programmed computer software tells computer operated machinery what to do and what to cut or engrave. This means that the computer does all the work rather than a person. This can save time and money but takes skilled users to write the computer program. The process can be used to control a range of complex machinery, from grinders and lathes to mills and CNC routers.

2. Advantages and disadvantages of C.A.D

AutoCAD
SolidWorks
CATIA
SOLID EDGE
AUTOCAD
INVENTOR
Creo Elements

Advantages of CAD	Disadvantages of CAD
Ideas can be drawn and developed quickly	Expensive to set up
Designs can be viewed from all angles and with a range of materials	Needs a skilled workforce
Some testing and consumer feedback can be done before costly production takes place	Difficult to keep up with constantly changing technology
It becomes easier to design and test a range of ideas	Computers can fail

3. Advantages and disadvantages of C.A.M

Advantages of CAM	Disadvantages of CAM
Fast and accurate production	Expensive to set up
Machines can run constantly on repetitive tasks	Needs a skilled workforce of engineers
Good for producing on a mass/flow production line	Downtime required for maintenance
Less material wastage	Computers and machines can fail
Machines can run 24/7	Errors can happen if they are not monitored.

Challenge!
Nasa wants to use 3D printers to design and make houses on other planets – Design a house that could be 3D printer for families to live in on the moon. Colour and label your design.

4. The laser Cutter

A laser cutter is a high-precision CAM machine that cuts a wide variety of materials using an extremely powerful laser beam directed onto the material using angled mirrors. The power setting can be varied - if the power is reduced or the speed is too high, then the laser beam will not cut completely through the material and will engrave it instead.

6. The CNC router

A CNC router is a type of computer-controlled machine created for milling, drilling and cutting materials.
The main functions of a CNC router are to cut, engrave and carve objects out of a work piece, such as Wood, plastic or metal.

5. The 3D Printer

3D printing, also known as additive manufacturing, is a method of creating a three-dimensional object which is made by adding layer-up on-layer of a specific material such as plastic. (PLA) using a computer created design. (CAD)
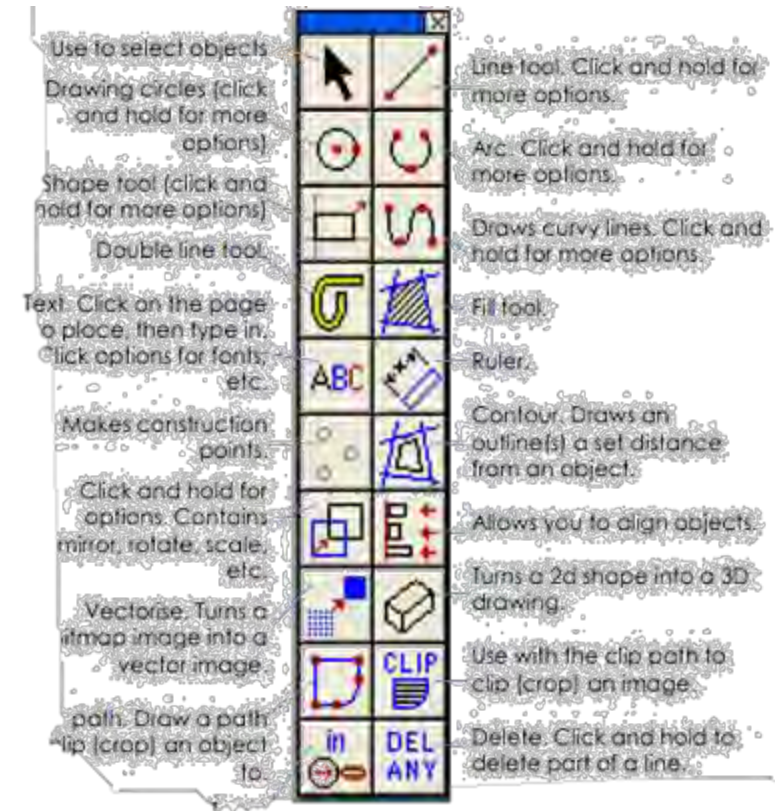
7. The 3D Printer
What are x,y and z axes?
Definition of x-y-z matrix The x-axis and y-axis represent the first two dimensions; the z-axis, the third dimension. In a graphic image, the x and y denote width and height; the z denotes depth.
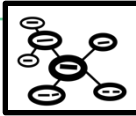
8. 2D Design – Computer Aided Design Software.

The software that you will use to design and make your work in your Computer Aided Design and Manufacture lessons will be 2D Design (made by Techsoft)
This is an easy-to-use software that can produce drawings that can be cut using CAM equipment.

These are the drawing tools that will help you draw your product.

Use to select objects
Drawing circles (click and hold for more options)
Shape tool (click and hold for more options)
Double line tool
Text. Click on the page to place, then type in. Click options for fonts, etc.
Makes construction points.
Click and hold for options. Contains mirror, rotate, scale, etc.
Vectorise. Turns a bitmap image into a vector image
path. Draw a path lip (crop) an object to.

Line tool. Click and hold for more options.
Arc. Click and hold for more options.
Draws curvy lines. Click and hold for more options.
Fill tool.
Ruler.
Contour. Draws an outline(s) a set distance from an object.
Allows you to align objects.
Turns a 2d shape into a 3D drawing.
Use with the clip path to clip (crop) an image.
Delete. Click and hold to delete part of a line.

## 1. Keywords spelling/definition test.

Blister packaging	a clear pocket on the front of a card package that will contain a product.
Injection moulding	a process used to create products out of plastic.
Product analysis	Looking at existing products to establish their strengths and weaknesses.
Vacuum forming	A way of created a clear plastic pocket/ shape using a mould with the plastic forced over it when heated.
Net	A flattened piece of packaging that shows the cut lines, fold line and tabs.
Display stand	A way of displaying a product..
silicon	A flexible material used to create the moulds for our Lego people

2. What is Lego made from and how is it produced?

Most LEGO® pieces are made from a high-quality plastic called ABS. It provides the unique connective grip, high gloss, and the colour stability our LEGO bricks are known for. It meets a long list of safety, durability and quality rules and they have been using it ever since 1963.

LEGO bricks are plastic injection moulded and so the process starts with tiny plastic granules. Inside the moulding machine these granules are superheated to around 230 degrees Celsius and are fed into moulds inside the machine.
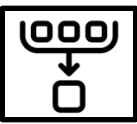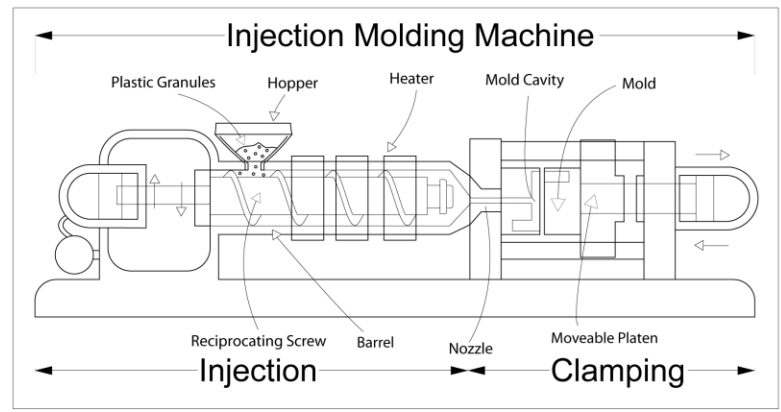
3. Facts about Lego

The History of Lego

The name 'LEGO' is an abbreviation of the two Danish words "leg godt", meaning "play well". The LEGO Group was founded in 1932 by Ole Kirk Kristiansen. The company has passed from father to son and is now owned by Kjeld Kirk Kristiansen, a grandchild of the founder

The first LEGO logo was introduced in 1934. It was a rather uninspiring design, though, with the words LOGO spelled out in an ordinary, black font. Over the years, the logo would undergo a few changes before the company settled on the logo, we are now familiar with.

4. Net construction lines

A NET needs different types of lines to turn the 2D shape into a 3D shape.

—————— Cut lines are seen as solid lines

- - - - - - - - Fold lines are seen as dashed lines
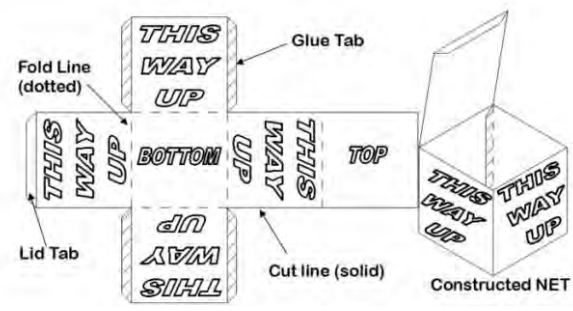
5. Blister package

Blister packaging' is often used for hygiene, cosmetics, DIY, stationery, food and many other products. They are always used wherever products ought to be almost completely visible, but protected at the same time, hence why they are also frequently referred to as 'visibility packaging'.


6. Die cutting

Die-cutting is a process whereby a die is used to cut through materials such as paper and card on a die press. The process allows you to make an identical cut into material numerous times. How die cutting machines work. For each job, a die, which is a shaped blade, is custom made for the item being created.
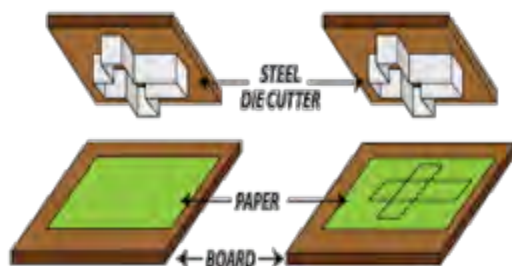
7. Vacuum forming

Vacuum forming is a simplified version of thermoforming, where a sheet of plastic is heated to a forming temperature, stretched onto a single-surface mould, and forced against the mould by a vacuum. This process can be used to form plastic into permanent objects such as turnpike signs and protective covers


HOW IT WORKS
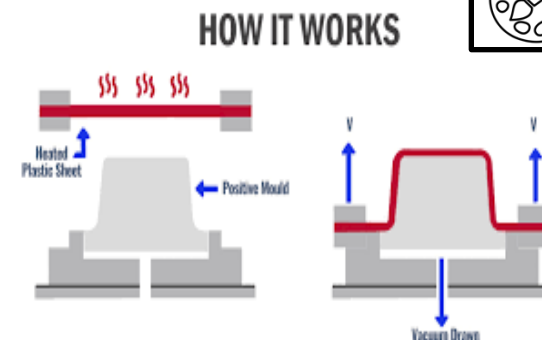
8. Facts about different Boards

Corrugated Card
Corrugated card, often referred to as corrugated cardboard, is a versatile packaging material composed of three layers of paper. Its central layer features a wavy or corrugated structure, with two flat outer layers. This construction gives it strength and rigidity while remaining lightweight.
What is it Used For? Corrugated card is primarily used for packaging and shipping purposes. It provides excellent cushioning and protection for items during transportation.
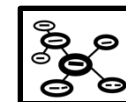
Laminated Card
Laminated card consists of paperboard covered with a layer of plastic film or coating. This lamination process adds durability, moisture resistance, and a polished finish to the cardstock.
What is it Used For? Laminated card is commonly used for items requiring enhanced durability and visual appeal. It finds applications in making business cards, identification cards, menus, book covers, and promotional materials. The plastic layer protects against wear and tear and gives the material a professional look.

Challenge!
Design a blister package for a new Apple smart watch.

You will need to design the front and back of the packaging and include important items such as the Name, logo, price, description of the product etc

1. Sustainability

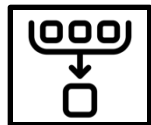**Three pillars of sustainability:**
environmental, social and economic.

Sustainability is an essential part of facing current and future global challenges, not only those related to the environment.

Environmental sustainability is the ability to preserve and protect the natural environment over time through appropriate practices and policies, meeting present needs without compromising the availability of resources in the future.

Social sustainability involves a focus on the well-being of people and communities. It's about promoting equity, human rights, access to education and health care, and decent work.

Economic sustainability is the approach whereby economic activities are conducted in such a way as to preserve and promote long-term economic well-being. In practice, it aims to create a balance between economic growth, resource efficiency, social equity and financial stability.

2. The six R's of Sustainability

The 6 Rs of Sustainability

Rethink
Refuse
Reduce
Reuse
Repair
Recycle

Priority level

4. Repair

Definition: When a product breaks down or does not work properly, try to fix it.

Fewer than one in 10 people in the UK attempt to repair or restore items if they are broken, according to new research.

Throw away or repair?

Yes, flat-screen TVs can be repaired, but the repair cost will depend on the extent of the damage. Some common problems with flat-screen TVs include a malfunctioning backlight, a damaged mainboard, or a failing power supply.

3. Recycle

Definition: Reprocess a material or product and make something else.

An ordinary plastic bottle can be broken down into a t-shirt or sweater, a fleece jacket, or jacket insulation.

In fact, about 10 bottles are enough to make a t-shirt.

63 to make a sweater.

Recycled plastic also makes sleeping bags,

100% Recycled Down, 100% Recycled Fabrics

D&T - Textiles

5. Reuse

Definition: Use a product to make something else with all or parts of it.

The difference between reuse and recycle is that when you reuse you can still see what the product was in the beginning.
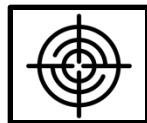
Reused   Recycled

MAKE A TOTE BAG FROM OLD JEANS
When was the last time you wore *that* pair of jeans? Declutter your wardrobe, dust off your old denim and bag yourself a handmade tote, and don't worry – even beginner stitchers can make one of these.

6. Reduce

Definition: Cut down the amount of material and energy you use as much as you can.

For example;

\<Bottle\>

Resin of container: 39% reduction

CO₂ emissions: 66% reduction (per on load)

\<Refill\>

Resin of container: 56% reduction

↓

CO₂ emissions: 58% reduction (per on load)

By boosting the performance of concentrated liquid laundry detergent *Attack ZERO* and reducing packaging size, we have been able to greatly reduce use of packaging material resources.

Compared to *Attack 3X*, our existing liquid detergent, the weight of plastic resins used has been reduced by about 39% for the plastic packaging and by about 58% for the refill pack (per one use).
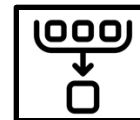
7. Refuse

Definition: Do not use a material or buy a product if you do not need it or if it is bad for people or the environment.
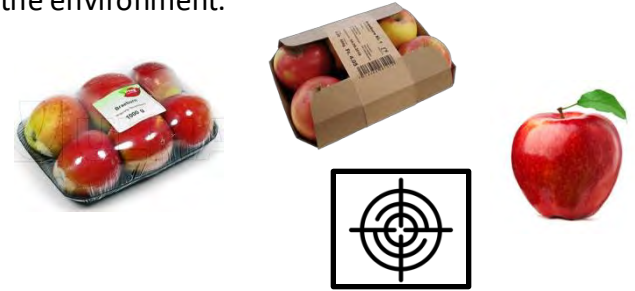

8. Rethink

Definition: Do we make too many products? Design in a way that considers people and the environment.

Burfeind designed Sneature is a sustainable sneaker alternative for the eco-conscious sneakerheads.
The shoe is crafted from many waste materials.
The yarn made of dog hair (Chiengora) is a biological waste being upcycled.
The membrane is a protein-based 3D knit made from dog hair.

D&T: Cooking & Nutrition
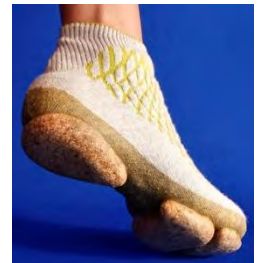
1. Key Words

Eatwell Guide

Eatwell Guide – the guide which helps us eat the right sort of foods in the correct quantities.

Consistency – how thick or runny a sauce is in cooking (add liquid to make it runnier, boil longer or add something like cornflour to thicken).

Coagulation – when an egg becomes solid by cooking. The eggs in the Savoury Flan coagulate when it cooks in the oven. You know it is cooked when it is no longer runny.

2. Making Shortcrust Pastry

This is the easiest pastry to make from scratch. It can be used to make meat pies, fruit pies, quiches, flans and sweet tarts.

Method:
1. rub-in plain flour and butter (twice as much flour as butter)
2. add tablespoons of water to form into a dough
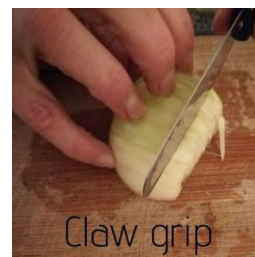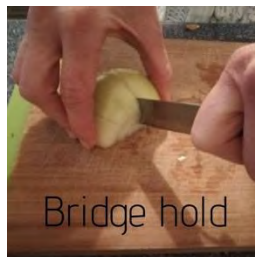3. Roll out, fill dish, bake in oven

Its best if you have cold hands when rubbing-in.

Chill the pastry in the fridge for 10+ minutes if you have time before rolling out.
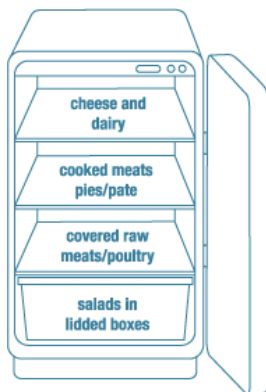
3. How to chop an onion

1 – Trim off the root (hairy bottom!)
2 – Cut the top where the stalk used to be
3 – Cut in half through the root end
4 – Peel the dry skin off the outside
5 – Cut the Hawaiian skirt – lots of cuts towards the root end
6 – Cut across to make lots of small pieces of onion

Knife grips:

Bridge hold   Claw grip

4. Storing foods in the fridge

cheese and dairy

cooked meats pies/pate

covered raw meats/poultry

salads in lidded boxes

High-risk foods should be stored in the fridge. Raw meat should be covered and stored BELOW cooked meat. The fridge should be between 1 and 5°C.

5. Foods links to celebrations
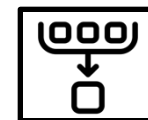
ANZAC Biscuits are linked to an important event in history find out what it is! Other foods that are linked to historical events are:
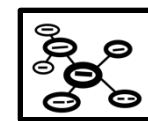
The Victoria Sandwich Cake:

Supposedly a favourite of Queen Victoria for her afternoon tea when entertaining guests.

Coronation Chicken Sandwich Filling:

For the coronation of Queen Elizabeth II in 1953 - diced chicken with a creamy sauce and touch of curry powder

6. Traffic Light Labels

The traffic light labelling system will tell you whether a food has high, medium or low amounts of fat, saturated fat, sugars and salt. It will also tell you the number of calories and kilojoules in the product.

Challenge! Find some foods at home with these labels. How healthy are they?

7. The Nutrition Program

Y8 NUTRITIONAL ANALYSIS

Task 1: You will need access to the internet. I would like you to do a Nutritional Analysis of a recipe using The Nutrition Program (link below). Nutrition Program : Login : by Jenny Ridgwell

The Login and Password are both PyrlandY8

Below are ingredients to make Bolognese (or use another recipe that you have ingredient quantities for)

- 1 onion
- 1 clove of garlic
- 1 carrot
- 1 celery stick (optional)
- 250g minced beef (or turkey, pork, lamb - or vegetarian alternative)
- 1 tin chopped tomatoes (400g)
- 1 tablespoon tomato purée (or ketchup)
- 1 teaspoon mixed dried herbs

Choose 'Create A New Recipe'. Enter the recipe name with your initials and the number of portions (how many people it serves).

Then search for the ingredients and enter the quantity used in the recipe – it will give help on how many grams a normal portion is. Once done click on the **NUTRITION** tab at the top of the page to show the traffic light label. Change the selection (at the top) to 'SHOW 8'. Screen print & copy into a Word document or print this page. This shows the same information that you see on food labels on food packaging to help you decide if a food is healthy.

Task 2: Now use the website of a supermarket to find a similar ready meal (eg: Bolognese ready meal for one). For example - Tesco: Tesco Groceries or ASDA: ASDA Groceries

Find the details of the ready meal so it shows the Traffic Light Label with the green/orange/red nutritional label. Screen print it & paste into the same Word document or print out the page.

Task 3: Now write a paragraph on paper or in your Word document saying which is a healthier meal and why. Remember that we need to reduce Saturated Fat, Sugar and Salt in out diet and increase Fibre. The number of calories depends on whether you are an active person or not.

8. Utensils and Equipment

grill pan – to place under the grill

palette knife – to lift pastry off the worktop

rolling pin – to roll out pastry

Quiche dish – porcelain dish to cook quiche in

Wok – for stir-frying

Fish Slice – for lifting food off trays or frying pans

History

1) Learn the following key terms.

1) Catholic
Roman catholic church, the head of Catholicism is the Pope.

Protestant
Christian Churches that are separate from the Roman Catholic Church.

Martin Luther
Was a German professor of theology, composer, priest, monk, and a significant figure in the Protestant Reformation.

Early Modern Period
The early modern period is a time from the 1500's – 1800's.

2: Learn the following key terms:

Reformation
A movement in the 16th century which led to the founding of Protestantism.

Pilgrimage
A journey, especially a long one, made to some sacred place as an act of religious devotion: a pilgrimage to London.

Heir
A person legally entitled to the property or rank of someone else after that person's death.

Act of Supremacy
An act passed by parliament in 1534 which made Henry and his successors Supreme Head of the Church of England.
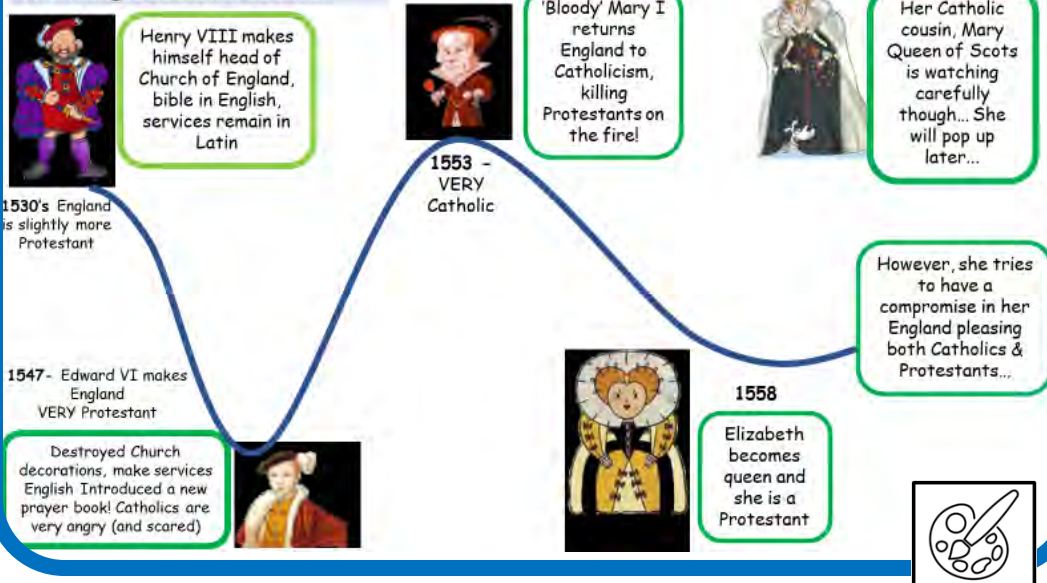
3) Why did Henry want to break from Rome?

Power: Henry resented how the Pope in Rome could tell him what to do. He wanted to be in charge of his own church so that the Pope had no control over him.

Money: The Roman Catholic Church had land and property that Henry could sell if he owned it.

Love: Henry wanted to **divorce** his wife, Catherine of Aragon and marry **Anne Boleyn**. The Catholic church did not allow divorce. Henry could make his church allow him to get a divorce.

4) Who had the biggest impact on religious reform?

The Religious Rollercoaster

1530's England is slightly more Protestant

Henry VIII makes himself head of Church of England, bible in English, services remain in Latin

1547- Edward VI makes England VERY Protestant

Destroyed Church decorations, make services English Introduced a new prayer book! Catholics are very angry (and scared)

1553 – VERY Catholic

'Bloody' Mary I returns England to Catholicism, killing Protestants on the fire!

Her Catholic cousin, Mary Queen of Scots is watching carefully though... She will pop up later...

However, she tries to have a compromise in her England pleasing both Catholics & Protestants...

1558

Elizabeth becomes queen and she is a Protestant

5) Why did Henry want to break from Rome?

Elizabeth wanted to **compromise** between Catholics and Protestants. She wanted to reach an agreement to keep both Catholic happy. By doing this, she hoped to avoid a **war** between Catholics and Protestants. She decided to...
- Allow church services in *English*.
- *Some* decorations in Churches.
- Elizabeth would be the supreme **governor** rather than the supreme **head** of the church.

6) Key Concept – Historical interpretations:

Convincing: Whether something is believable.
Interpretations: How somebody chooses to present the past after an event.
Examples of Historical interpretations...
- **Books** written by historians.
- **Museums** that present historical artefacts.
- **Films** that are made about history.

7) Learn the following key terms:
Absolutist
An absolutist ruler is one who has supreme authority and power.
Divine Right of Kings
The belief that God put the King on Earth to rule and no one can challenge that power.
Puritans
Extreme protestants. They believe that the Protestant religion must be strictly followed.
Parliament
A group of people who help make the laws of the country.
Tyranny: A cruel ruler.

8) Learn the following key terms:
Ship money: A tax that is paid by towns with harbors.
Republic A country that has no monarchy (King or Queen), and in which power over the whole country is held by an elected body like a parliament.
Republican
A person living in, or wanting to live in, a republic.
Monarchy
Where a country has a king or a queen.

9) Why did Charles fall out with Parliament?

Charles believed he should rule without Parliament. He believed in the **Divine Right of Kings**. Charles closed Parliament for 11 years and ruled without Parliament ("the eleven years of tyranny). This angered Parliament, who's views were being ignored.

People were angry that Charles changed **ship money** so that the whole country had to pay this tax, rather than just harbour towns.

Charles changed the churches, so they were more decorated. This upset Protestants, particularly **puritans**.

10) **Using evidence**

Evidence: Something from the time you are studying that gives a view of what happened in the past.

 What could historical evidence include?

 - Diaries.

- Government records.
- Paintings/art.
- Photos.
- Films.
- Letters

Evidence can be anything as long as it is from the time you are studying!

11) What happened after Charles?

Charles lost the **civil war** against Parliament. He was replaced by Oliver Cromwell, who called himself the **Lord Protector**.

He was a **puritan** and turned England into a Puritan country. He ruled without Parliament and had a group of **major generals** who would help him control England.

Monarchs after Charles…

After Cromwell died, the monarchy was **restored**. Charles II returned in 1660. He had *less power* than his father and had to work with Parliament. However, they argued about how much power he could have…

12) Revise the following key terms:
Catholic
Roman catholic church, the head of Catholicism is the Pope.
Protestant
Christian Churches that are separate from the Roman Catholic Church.
Martin Luther
Was a German professor of theology, composer, priest, monk, and a significant figure in the Protestant Reformation.
Early Modern Period
The early modern period is a time from the 1500's – 1800's.

13) Revise the following key terms:
Reformation
A movement in the 16ᵗʰ century which led to the founding of Protestantism.
Pilgrimage
A journey, especially a long one, made to some sacred place as an act of religious devotion: a pilgrimage to London.
Heir
A person legally entitled to the property or rank of someone else after that person's death.
Act of Supremacy
An act passed by parliament in 1534 which made Henry and his successors Supreme Head of the Church of England.

14) Revise the following key terms:

Absolutist
An absolutist ruler is one who has supreme authority and power.
Divine Right of Kings
The belief that God put the King on Earth to rule and no one can challenge that power.
Puritans
Extreme protestants. They believe that the Protestant religion must be strictly followed.
Parliament
A group of people who help make the laws of the country.
Tyranny:
A cruel ruler.
Ship money: A tax that is paid by towns with harbors.
Republic A country that has no monarchy (King or Queen), and in which power over the whole country is held by an elected body like a parliament.
Republican
A person living in, or wanting to live in, a republic.
Monarchy
Where a country has a king or a queen.

French

1 – Holidays – Where and how long?

J'habite …
en Angleterre / Écosse / Irlande (du Nord).
au pays de Galles.

I live…
in England/Scotland/(Northern) Ireland/Wales

J'ai / On a …
une semaine / deux semaines de vacances
en janvier / février (etc.).
à Noël / à Pâques.

I have/we have…
one week / two weeks of holidays
in January/February
at Christmas / at Easter

Je suis / Nous sommes en vacances …
au bord de la mer.
à la montagne
à la campagne
en colo (en colonie de vacances)
chez mes grands-parents

I am / We are on holiday…
by the sea
in the mountains
in the countryside
at a holiday camp
at my grandparents house

2 – Holidays – what's it like?

C'est …
assez
très
trop
un peu
complètement
nul / sympa
ennuyeux / intéressant
triste / marrant

It is….
quite
very
too
a bit
completely
rubbish / nice
boring / interesting
sad / funny

C'était …
fantastique / génial / super!
amusant / marrant / sympa.
intéressant / ennuyeux / nul.
Ce n'était pas mal.

It was …
fantastic / great / super
funny/ funny/ nice
interesting / boring/ rubbish
It wasn't bad

3 – What did you do on holiday? – Regular verbs

Pendant les vacances …
J'ai joué au tennis
j'ai mangé des glaces
j'ai retrouvé mes amis
j'ai écouté de la musique
j'ai acheté des baskets
j'ai regardé des clips vidéo
j'ai nagé dans la mer
j'ai traîné à la maison

During the holidays…
I played tennis
I ate icecream
I met up with my friends
I listened to music
I bought trainers
I watched video clips
I swam in the sea
I hung out at home.

4 – What did you do on holiday? – Irregular verbs

J'ai visité un parc d'attractions.
J'ai bu un coca au café.
J'ai pris beaucoup de photos.
J'ai vu un spectacle.
J'ai fait une balade en bateau.
J'ai vu mes personnages préférés.
J'ai fait tous les manèges.
d'abord
ensuite / puis
après
finalement

I visited an attraction park
I drank a coke at the café
I took lots of photos
I saw a show
I did a boat trip
I saw my favourite characters
I went on all the rides
at first
next / then
afterwards
finally

French

5 – Where did you go on holiday? – Verbs with être + Nous/on

Je suis allé(e) en vacances avec … — *I went on holiday with…*
ma famille / mes parents / mes copains. — *my family / my parents / my friends*
On est allé(e)s / Nous sommes allé(e)s … — *We went …*
en Espagne / France / Grèce. — *to Spain / France / Greece*
au Maroc / aux États-Unis. — *to Morocco / to the United States*
Tu as voyagé comment? — *How did you travel?*
J'ai voyagé … — *I travelled…*
On a / Nous avons voyagé … — *We travelled …*
en avion / en bateau. — *by plane / by boat*
en bus / en car. — *by bus/ by coach*
en train / en voiture — *by train / by bus*

6 - What a disaster! – Talking about a disastrous holiday

J'ai oublié mon passeport. — I forgot my passport
J'ai cassé mon portable. — I broke my phone
J'ai perdu mon porte-monnaie. — I lost my purse
J'ai choisi le poisson. — I chose the fish
J'ai beaucoup vomi. — I threw up a lot
Je suis tombé(e) sur la plage. — I fell on the beach
Je suis resté(e) au lit. — I stayed in bed
On a raté l'avion. — We missed the plane
On est arrivés en retard. — we arrived late
Je n'ai pas acheté de souvenirs. — I didn't buy souvenirs
Je n'ai pas pris de photos. — I didn't take any photos
Je ne suis pas sorti(e). — I didn't go out

Quel désastre! — **What a disaster!**
Quelle horreur! — **How horrible!**

7 – Comparing normal and past holidays

Normalement, pendant les vacances … — *Normally during the holidays…*
je vais en colo, à la campagne. — *I go to a camp in the country*
je voyage en car. — *I travel by coach*
je nage dans la piscine. — *I swim in the sea*
je fais du sport. — *I do sport*
je mange des hamburger-frites. — *I eat burgers and chips*
C'est un peu ennuyeux. — *It is a bit boring*
Mais l'année dernière, …
j'ai gagné un concours.
je suis allé(e) à Vanuatu.
j'ai voyagé en avion.
j'ai nagé dans la mer.
j'ai fait de la voile.
j'ai vu des dauphins.
j'ai mangé des fruits de mer.
C'était vraiment génial!

8 – Key festivals

Noël — Christmas
Pâques — Easter
le 14 juillet — Bastille Day
le Nouvel An — New Year
la Toussaint — All Saints
la Saint-Valentin — Valentine's Day
L'Aïd — Eid

C'est … — **It's**
marrant / ennuyeux. — funny / boring
bête. — stupid
trop militaire. — too militaristic
trop commercial — too commercial

French

9 – What's your favourite festival? (1)

j'attends la fête avec impatience — *I'm looking forward to the festival*
je rends visite à … — *I visit …*
j'entends la musique — *I hear music*

chaque année — ***every year***
le matin — ***in the morning***
l'après-midi — ***in the afternoon***
le soir — ***in the evening***

10 – What's your favourite festival? (2)

une parade / un défilé — *a parade*
un groupe de gens / filles / garçons / musiciens / d'enfants — *a group of people / girls boys / musician / children*
Ils/Elles sont … — ***They are …***
dans la rue. / en ville. — *in the street / in town*
Ils/Elles … — ***They***
marchent / applaudissent — *are walking / clapping*
dansent — *dancing*
jouent d'un instrument. — *playing an instrument*

11 – Ordering food at a market

Vous désirez? — ***What would you like ?***
Je voudrais … — ***I would like …***

100 grammes de … — *100 g of ….*
un kilo de … — *a kilo of …*
un demi-kilo de … — *half a kilo of …*
une tranche de … — *a slice of…*
un morceau de … — *a piece of …*

12 – Traditional dishes

C'est un plat typique de … — ***It's a typical dish from …***
C'est une spécialité de … — ***It's a speciality from …***
le fromage blanc — *soft white cheese*
le beurre — *butter*
le vin blanc — *white wine*
la pâte — *pastry*
la crème fraîche — *crème fraiche*
l'ail — *garlic*

C'était … — ***It was …***
délicieux / savoureux/ léger. — *delicious / tasty / light*

13 – School trips

Qu'est-ce que tu vas faire? — ***What are you going to do?***
je vais … — ***I am going …***
aller en Alsace — *to go to Alsace*
visiter les marchés de Noël — *to visit the Christmas markets*
choisir des cadeaux — *to choose presents*
admirer les maisons illuminées — *to admire the lit-up houses*
écouter des chorales — *to listen to choirs*
goûter du pain d'épices — *to taste gingerbread*
acheter une boule de Noël — *to buy a Christmas bauble*
manger une tarte flambée / de la choucroute — *to eat a tarte flambée / sauerkraut*
boire un jus de pomme chaud — *to drink a hot apple juice*

14 – New Years Resolutions

Je vais … — ***I am going…***
aller au marché. — *to go to the market*
aider dans le jardin. — *to help in the garden*
être patient(e) avec … — *to be patient with*
faire du sport. — *to do sport*
laisser mon smartphone dans ma chambre. — *to leave my smartphone in my bedroom to finish my homework*
finir mes devoirs le soir.

1. Animals in Art

- Animals have been a source of inspiration for many artists. Some of the oldest known artworks that are around 45,500 years old, depict animals.

- From art about rural life and growth, to myths and legends, animals are used in art in many ways.

2. Drawing Keywords

Tone - The lightness or darkness of something.

Hatching - Straight or curved lines drawn close to each other, used to create tone.
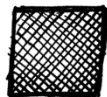
Cross-hatching - Flat area surrounded by a line.

Shape - Flat area surrounded by a line.

Form - Illusion of 3D shape, such as a cube or sphere.

Hatching

Cross-Hatching

3. Leonardo da Vinci (1452-1519)

- Born in Italy 1452.

- Lived during the **Renaissance era** (a period in which important developments and discoveries in areas such as art and science were made).

- Da Vinci wasn't just an artist, he was a sculptor, architect, poet, composer, scientist, mathematician and an inventor.

- Da Vinci combined science and art in his studies, as seen in his animal sketches.

- To gain a detailed understanding of the animal body, Da Vinci would often dissect animals and compare them with human body parts.

Leonardo da Vinci's self-portrait.
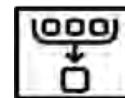
# 4. Leonardo da Vinci's Animal Studies

Da Vinci sketched animals using chalk and metal point. He used drawing techniques such as 'hatching'.

Try drawing one of Da Vinci's studies in your exercise books. Begin with simple shapes, and slowly build tone form by hatching.

Art

5. Sarah Esteje (1987-present)

- Sarah Esteje is an illustrator and photographer, who studied art in Paris at both LISAA and Gobelins School of the Image, Paris.

- Her series of animal portraits is drawn entirely in ball point pens.

- She uses a range of **mark-making** techniques to create texture and tone.

- Her works show creatures out of their natural habitat and present them in a more graphic, modernised style.

- Her works are **hyper-realistic**.
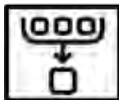
6. Drawing Keywords

Hyperrealism - Art characterized by depiction of real life in an unusual or striking manner.

Texture - The way something feels or looks like it feels.

Mark Making - describes the different lines, dots, marks, patterns, and textures we create in an artwork.

7. Artist study

Mark Making - Looking closely at the image recreate the tiger using a pen.

8. Creating Animal Textures With Pen

Try re-creating these animal textures in your books using pen. Or, if you have a pet at home, take a close-up photo and try to drawing from that.

9+10. Collograph Printmaking
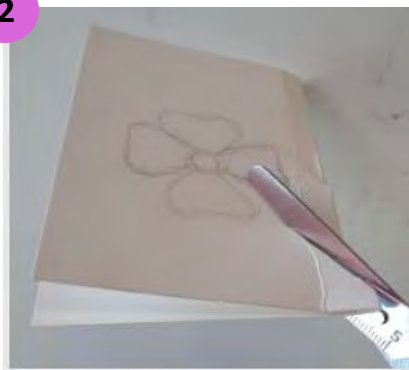
Illustrate the step-by-step in your books.

Making the Collograph Plate:

Printing the Collograph:

Art

1

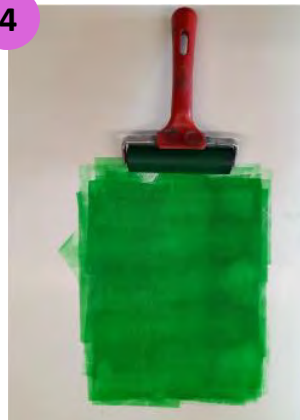Get a backing piece of card, this will be your 'plate'.

2

Cut out your shapes and motifs.

3

Glue motifs onto plate.

4

Roll ink out onto clean surface.

5

Roll an even layer of ink onto plate.

6

Turn over plate and print onto paper – apply even pressure using clean roller.

7

Remove plate and admire your print!

Art

11 + 12. Mark Hearld (1974-present)

- A painter and printmaker based in York.

- Studied at Glasgow College of Art before completing an MA in natural history illustration at the Royal College of Art.

- His works are mainly observations of the natural world.

- He is inspired by local surroundings, drawing textures and patterns to create artworks.

- He works in a variety of mediums, such as paint, collage, ceramics, sculpture and print.

- Influences by mid 20th century Neo-Romantacism and 1930s Modernism. He was inspired by British artists such as Eric Ravilious, John Piper and Edward Bawden.

13. Keywords

Printmaking – Making pictures or designs by printing them from specially prepared plates or blocks.

Pattern – A design created by repeating lines, shapes, colours or tones.

Collage – Art made by sticking various different materials such as photographs and pieces of paper or fabric on to a backing.

Motif – Recurring image, theme or pattern that appears in a work of art.

14. Collograph Printmaking
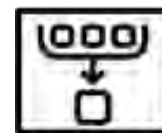
- Collograph is an intaglio printmaking process.
- Essentially a collage of materials of various textures glued on to a printing plate, often a thin wood or cardboard.
- The plate is inked up, usually by hand, and then printed on to paper either manually or via a press.

Geography

1. Geological Timescales

Geologic time is the **billions** of years since the planet Earth began developing.

The scale of geologic time starts around 4 billion years ago, when Earth's crust was formed.

We are currently in a period of time known as the **Cenozoic era**, which began 66 million years, during this time we have seen the evolution of humans.

Through the process of evolution, different kinds of **fossils** occur in rocks of different ages, meaning that geologists can understand geological history.

Challenge!
Scan this QR code and make a poster of the different geological time scales. There is also a video for further research.

SCAN ME

2. The Rock Cycle

The rocks on Earth are constantly changing due to many different processes.

There are three types of rock found on Earth with rocks changing between each type over millions of years.

1. **Igneous rock**: Formed from molten rock (magma or lava) that cools and solidifies.
2. **Sedimentary rock**: Formed from layers of sediment that are compacted and cemented together.
3. **Metamorphic rock**: Formed from existing rock that undergoes changes due to heat and pressure.

This recycling of rocks is a process called <u>the rock cycle</u>.
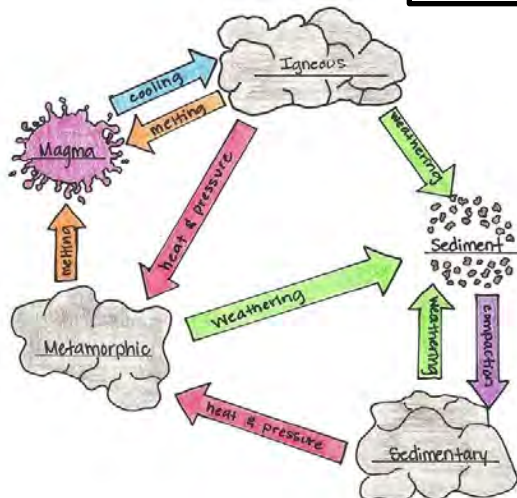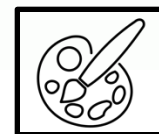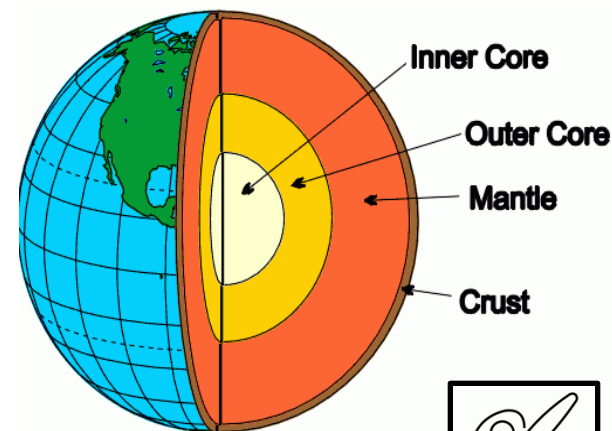
3. Structure of the Earth

The Earth is a planet and is roughly the shape of a sphere. There are **three layers that make up the Earth's structure.**

The three layers, starting from the outside, are:

1. **Crust:** the rocky outer layer
2. **Mantle:** the semi-solid middle layer
3. **Core:** the innermost layer which is divided into an inner core and outer core

Inner Core
Outer Core
Mantle
Crust

Challenge!
Scan the QR code and test your knowledge.

SCAN ME

4. Continental Drift

In 1912, Alfred Wegener published a theory to explain why the Earth looked like a huge jigsaw. He believed the continents were once joined, forming a **supercontinent** he called **Pangaea**.

Over 180 million years ago, this supercontinent began to "**break up**" due to **continental drift**.
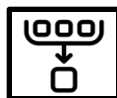
Evidence for Continental Drift:

✓ The same types of fossilised plants and animals are found in South America and Africa.
✓ The east coast of South America fits the west coast of Africa like a jigsaw puzzle.
✓ Rock formations and mountain chains match in South America and Africa.

5. Plate Boundaries

Destructive plate margins

A destructive plate boundary occurs when an oceanic plate is forced under (or subducts) a continental plate.
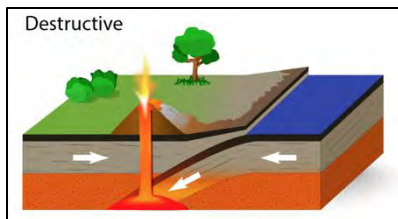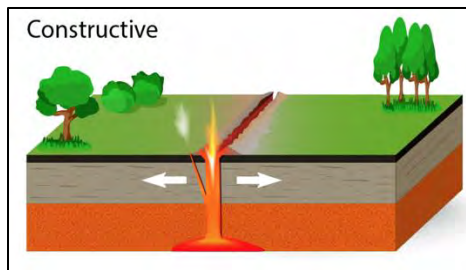
Landforms: Fold Mountains and Oceanic trenches
Example: Pacific Plate and the Eurasian Plate

6. Plate Boundaries Continued

Constructive plate margins

A constructive plate boundary occurs when two plates move away from each other.
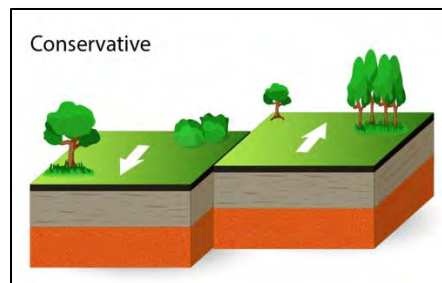
Landforms: Ocean ridge and volcanic islands
Example: Iceland lies on the Mid Atlantic Ridge, where the North American and Eurasian plates are moving away from each other.

Conservative plate margins

A conservative plate boundary occurs when two plates slide past each other.

Landforms: There are no volcanoes at a conservative plate boundary. A large-scale landform found along a conservative plate boundary is a fault line.
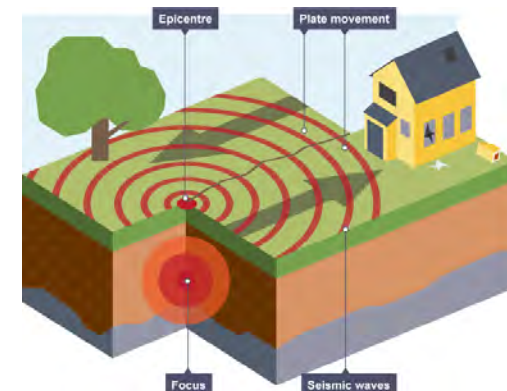**Example:** One of the most active fault lines in the world is the San Andreas fault line in California, USA.

7. Earthquakes

Definition: An **earthquake** is a sudden and sometimes violent movement of the **Earth's crust**.

Earthquakes occur due to a **release of energy** that causes the Earth's crust to **move suddenly**.

Focus: The point inside the Earth's crust where the earthquake originates from.
Seismic Waves: The earthquake's energy is released in seismic waves and they spread out from the focus.
Epicentre: Is the is the point on the Earth's surface directly above the focus. This is where the seismic waves are the most powerful.

Challenge!
Scan this QR code and take the plate boundary quiz.

SCAN ME

Geography

8. Factors affecting settlement

Definition: Settlements are **places** where **people live** and sometimes **work**. They can be small or large, such as a village or a city.

The factors that affect the site of a settlement include:

✓ **Relief** – the shape of the land, e.g. flat land is better for building.

✓ **Quality of the soil** – if the soil is fertile a settlement is more likely to develop.

✓ **Trading point** – often settlements developed where natural training points meet such as along rivers or natural routeways.

✓ **Resources** – many settlements developed close to where natural resources could be found.

✓ **Accessibility** – such as roads and railway lines.
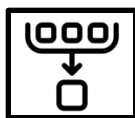
Challenge!
Scan this QR code, scroll to the bottom and complete the settlement quiz.
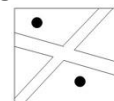
9. Settlement Patterns

Settlements take on a range of shapes when they form. **Dispersed, linear and nucleate**d are the most common.
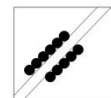
A **dispersed** pattern is where isolated buildings are **spread out**. Features include:
- Remote or mountainous regions.
- Land is mostly used for farming.
- Few job opportunities

A **linear** settlement pattern occurs in a **line** or arc shape. Features include:
- Often follows a road or river.
- Usually grow along a narrow valley (between steep hills) where there is little space.

A **nucleated** settlement occurs in a circular shape with buildings mainly concentrated around a common centre such as a road.

Most large cities are nucleated. Features include:
- Flat relief which is easy to build on.
- Good water supply
- Plenty of job opportunities
- Many public services. E.g. schools.
- Good transport links.
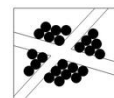
10. Rural versus Urban

In the UK, around 80% of the population live in urban areas and 20% in rural areas.
All the land in the UK can be divided into three categories:
Rural areas are found in the countryside, surrounded by open land. Most of the land in the UK is rural.
Suburban settlements are usually located outside of large cities and towns and the land here is used for housing.
Urban settlements are towns and cities with a high population.

11. Megacities

Mega-cities are an **urban** area with a total population of **ten million** people or more.
In **1975**, there were only **four** megacities – New York, Tokyo, Mexico City and São Paolo. Today, there are estimated to be **35**.

Largest Cities by Population:
1. Tokyo (Population: 37,435,191)
2. Delhi (Population: 29,399,141)
3. Shanghai (Population: 26,317,104)
4. Sao Paulo (Population: 21,846,507)
5. Mexico City (Population: 21,671,908)
6. Cairo (Population: 20,484,965)
7. Dhaka (Population: 20,283,552)
8. Mumbai (Population: 20,185,064)
9. Beijing (Population: 20,035,455)
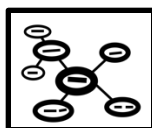10. Osaka (Population: 19,222,665)

12. Sustainable Living

Definition: **Sustainable urban living** is living in a way that **meets our needs** today and the **needs of future generations without damaging the environment** or using too many resources.

BedZED claims to be the **UK's largest sustainable community**. Built in 2002, it has 100 homes designed to provide ordinary people with a **high quality of life** while living within their share of the earth's resources.

BedZED Features:
✓ 100 homes that use renewable energy.
✓ South facing, meaning it has the advantage of natural sunlight.
✓ Building materials from renewable or recycled sources within 55km of the site.
✓ Rainwater is collected and reused
✓ Small allotments built with houses so food can be grown and consumed locally.
✓ Car share scheme.

Challenge!
Scan the QR code, watch the video and find out more about BedZED.

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13. Urban Poor – Kibera Slum, Nairobi

- **Slums** are built from whatever materials can be found and are **temporary homes**.

- Kibera is the **largest urban slum in Africa**, housing around 250,000 people.

Challenges in Kibera:

- Most people only have access to **water** that is **polluted** with **diseases** such as cholera and typhoid.
- There are **no toilets**. One hole in the ground **(latrine)** is shared by up to **50 shacks.**
- There is **no rubbish disposal**, so rubbish is piled in the streets. This encourages **rats** which spread **disease**.
- Most people live in **extreme poverty**, which means they live on less than $1 per day.

Nairobi

Kibera

Challenge!
Do your own research to find out how they have improved the living conditions of the people living in Kibera.

14. Opportunities for urban poor – Kibera Slum, Nairobi

Definition:
Poverty is a **lack of money** for basic needs such as food, water and shelter.

Most Kibera slum residents live in extreme poverty, earning less than $1 a day.

Opportunities in Kibera:

- Children can go to **school** but sometimes the classroom is very full and some have to stand.

- **No hospitals** in Kibera but small health centres have been set up by charities.

- 50% of people are able to get a **job** near to the industrial area.

- **Sports** development programme to help give the **children** something to do.

Challenge!
Scan the QR code, watch the video to see what life is like in Kibera.

SCAN ME

READING Log

Book and Author	Next page	Comments and signature

READING Log

Book and Author	Next page	Comments and signature

RECOMMENDED READS!

Rebel Voices
THE RISE OF VOTES FOR WOMEN
EVE LLOYD KNIGHT   LOUISE KAY STEWART
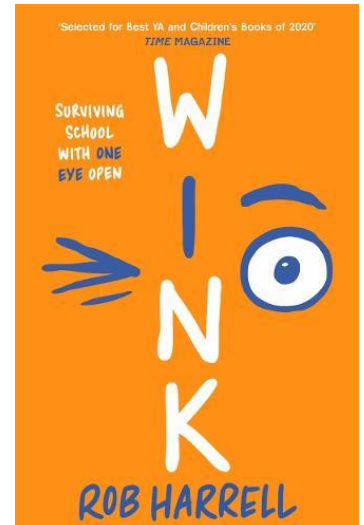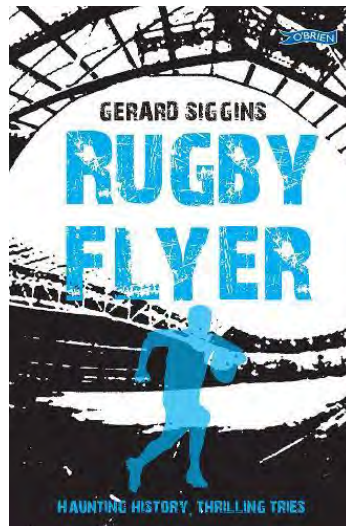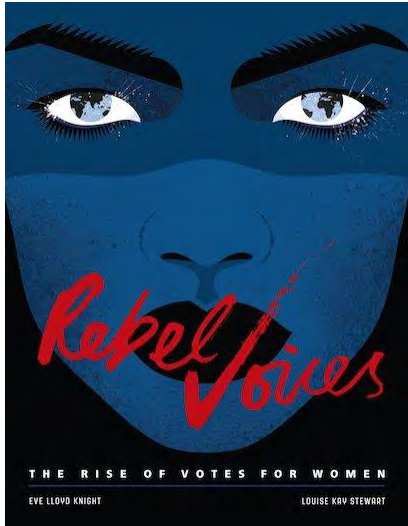
How did women get the vote? They didn't keep quiet. They didn't behave. They didn't play nice. They had to stand up. They had to shout loud. They had to say Time's Up. But who were the rebel women who did those things?

GERARD SIGGINS
RUGBY FLYER
HAUNTING HISTORY, THRILLING TRIES

Recommended for less confident readers, this sports story thriller will engage anyone with an interest in rugby or ghosts....or both.
Vividly drawn, engaging characters and short, sparky chapters keep the action fast-paced in this absorbing story.

WINK
'Selected for Best YA and Children's Books of 2020'
TIME MAGAZINE
SURVIVING SCHOOL WITH ONE EYE OPEN
ROB HARRELL

A hilarious and heart wrenching story about surviving middle school - and an unthinkable diagnosis - while embracing life's weirdness. 'Wink' is semi-autobiographical as the author draws o n his own experiences.

ASPIRE
Challenge. Achieve. Succeed.
PYRLAND SCHOOL

CORAM BOY
JAMILA GAVIN
WINNER OF THE WHITBREAD CHILDREN'S BOOK AWARD

George ORWELL • Chris MOULD
Animal Farm

Starfish
This book is a gem
BOOK RIOT
AKEMI DAWN BOWMAN

ASPIRE
Challenge. Achieve. Succeed.
PYRLAND SCHOOL

The Pyrland Way
Ready, Respectful, Responsible