

Name: \_\_\_\_\_



**BROADOAK**  
ACADEMY

# Knowledge Organisers



Terms 3-4  
Year 7

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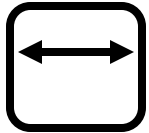
# How to learn over time

## Successful Learning Takes Place Over Time

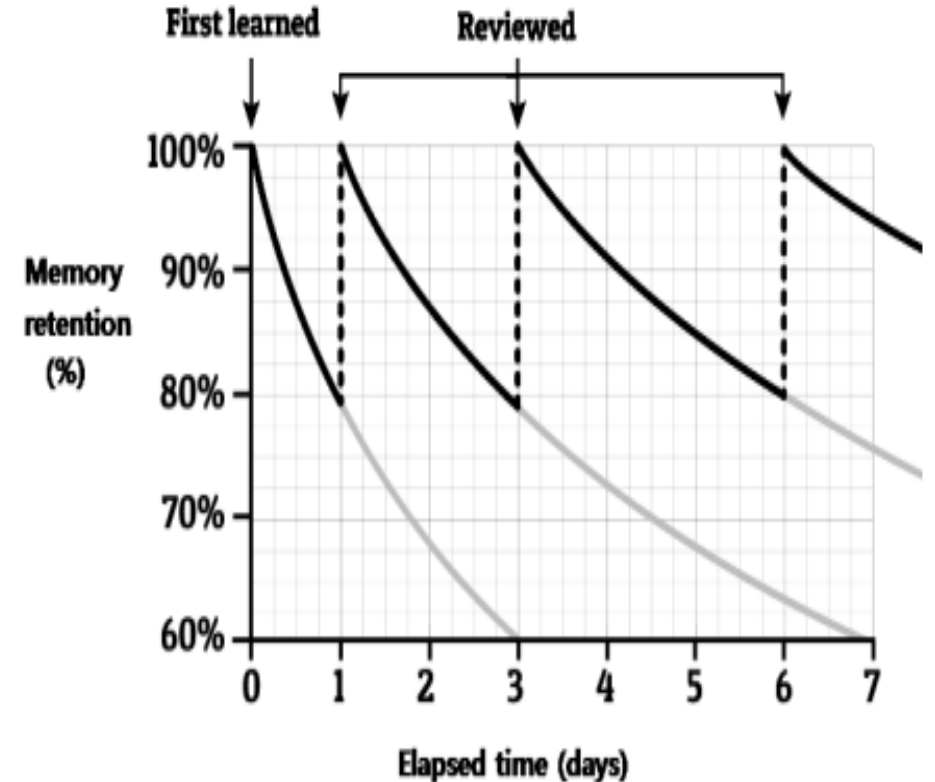


It's rare for anyone to be completely comfortable with something they learn for the first time. This could be a new piece of music, dance move, language or chemistry. We all have to practice. In most instances, the aim is to be at your optimum on the day it matters, e.g. the performance, race or exam. Everything leading up to this point is part of the process of improving. It's about the long-term rather than the short-term, which also means there are no quick fixes. During this period, it's okay to make mistakes; it's okay to feel frustrated. What matters is what you do about it.

## Space out your learning on a subject



Spacing out your learning over time is far more effective than last-minute cramming. This is based on research into how we forget and how we remember. The speed at which we forget something will depend on many factors such as the difficulty of the material, how meaningful it was to us, how we learned it and how frequently we relearn or remember it. The last factor tells us that when we learn something for the first time, we need to review it quickly afterwards. The more times we force ourselves to remember something, the longer the gap between reviews, which the diagram below illustrates nicely. The Leitner system and Cornell Notes mentioned earlier provides a wonderful way of achieving this, but the principle applies to all of the learning strategies mentioned in this booklet.



# Revision Strategies

## List It



This is a simple free recall task that is very versatile. It can feel challenging, but this is a good thing, and it provides clear feedback on what you do and don't know. Choose a topic, set yourself a time limit and...

- List as many keywords as you can
- List as many facts as you can
- List as many key events/quotes/individuals as you can
- List as many causes of X as you can
- List as many consequences of Y as you can

## Flashcards



Flashcards have the potential to be a powerful learning aid. However, how successful this is will depend on the thought you put into making them in the first place and then how they're used. It's very important to remember that they're for testing, not summarising.

## Mapping



Mapping is a brilliant way of organising and learning information, demonstrated on various pages in this booklet. It helps you break down complex information, memorise it, and see the connections between different ideas.

## Self-testing



Research has shown that every time you bring a memory to mind, you strengthen it. And the more challenging you make this retrieval, the greater the benefit. Self-testing improves the recall of information, transfer of knowledge and making inferences between information. Equally, there are many indirect effects, such as a greater appreciation of what you do and don't know, which helps you plan your next steps.



# Flashcards

Flashcards are small sheets of paper or card with matching pieces of information on either side. They are a useful tool for learning facts and allow you to quickly check whether you have remembered something correctly.

## When making and using flashcards:

Do:	Don't:
✓ ...make flashcards quickly.	X ...spend more time making flashcards than actually using them.
✓ ...put a single piece of information of each flashcard.	X ...put lots of information onto each flashcard.
✓ ...sort your flashcards according to your confidence with them (see below).	X ...revise the flashcards in the same order every time that you use them.
✓ ...test yourself on the flashcards from memory.	X ...only read through flashcards.

1861	groynes	osmosis	Where is the pharmacy?
Pasteur published his paper about germ theory.	A low wall on the coastline which slows longshore drift	Net movement of water from a high concentration to low concentration across a partially permeable membrane	Où est la pharmacie?

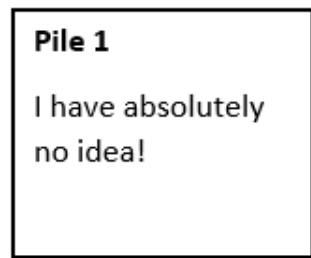
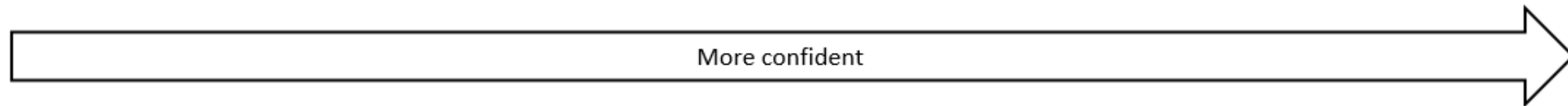
## How to make flashcards:

- You can buy a set of flashcards or use a free website such as Quizlet.
- Find the information you want to put onto flashcards using your existing revision resources (e.g. a knowledge organiser).
- Fold a piece of A4 paper into 10.
- Write the questions on the top half of the paper.
- Write the answers on the bottom half of the paper.
- Cut the paper along the dotted lines shown here.
- Fold the strips of paper so that the writing is on either side.

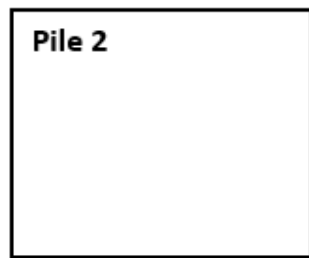
Definition 1	Definition 2	Definition 3	Definition 4	Definition 5
Answer 1	Answer 2	Answer 3	Answer 4	Answer 5

## How to use flashcards:

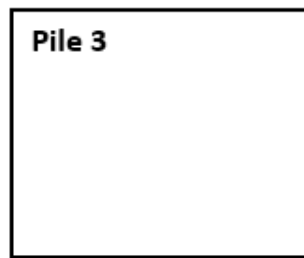
1. Test yourself using the flashcards.
2. As you test yourself, sort the flashcards into up to five piles according to how confident you are with the content.
3. Put the piles into numbered envelopes (1-5).
4. Test yourself on the different piles on different days (see below):



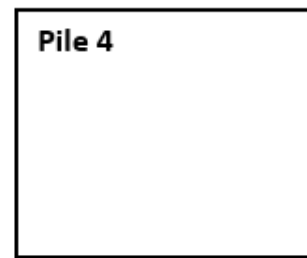
Practise **every** day.



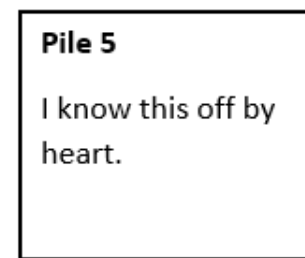
Practise every **other** day.



Practise every **three** days.

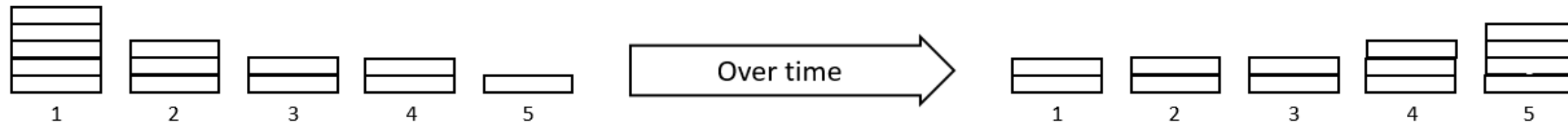


Practise every **four** days.



Practise every **five** days.

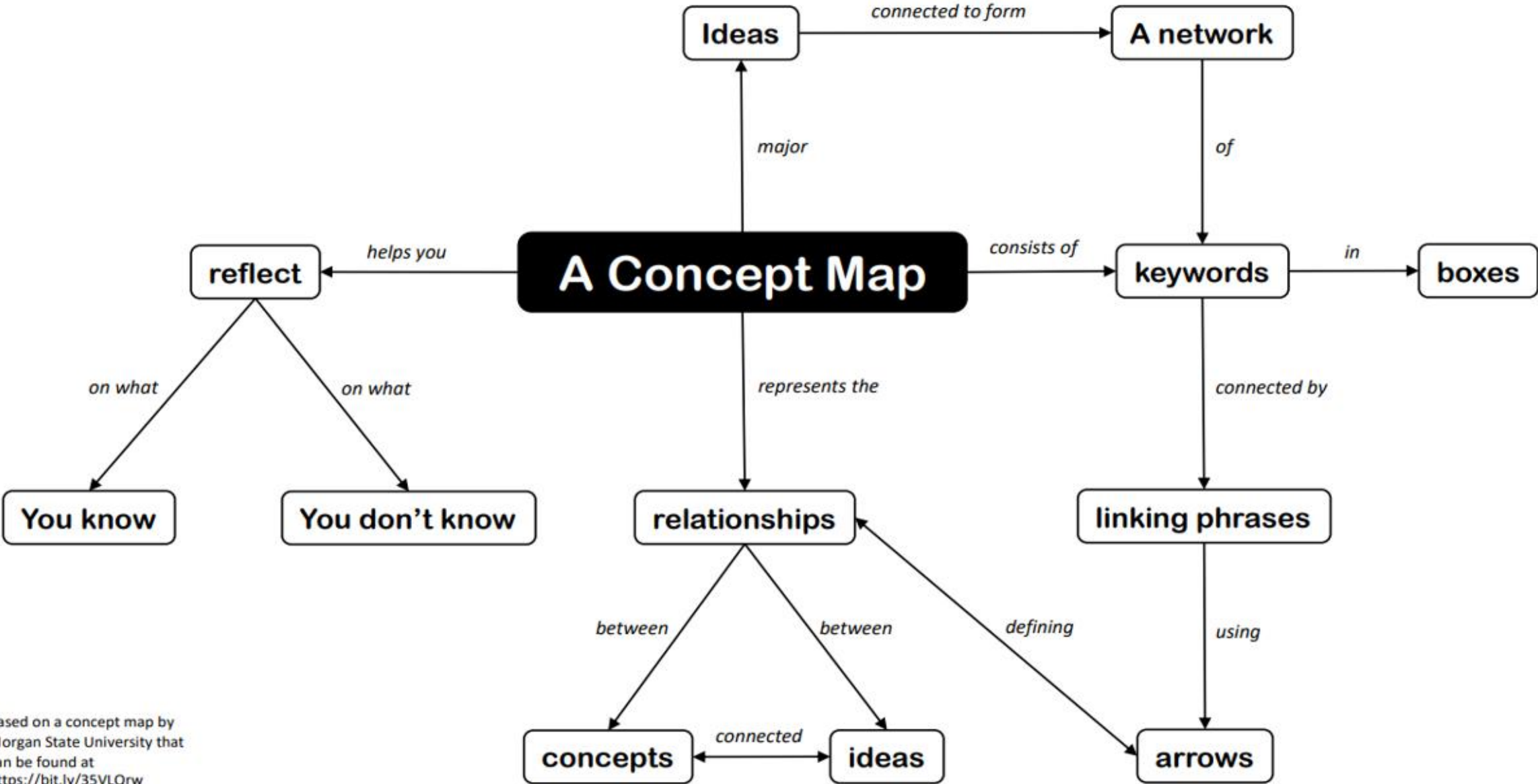
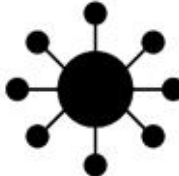
5. As you test yourself on the different piles, move the cards into different piles as you become more confident.








## Useful resources:






[www.quizlet.com](http://www.quizlet.com) – This free website allows you to quickly create flashcards which you can print, use on a computer, or use on your phone.

# Mapping




Based on a concept map by Morgan State University that can be found at <https://bit.ly/35VLQrw>


Key Words 1 	
<b>Protagonist:</b> central character, usually a hero	<b>Antagonist:</b> central character, usually the enemy of the protagonist
<b>Apprentice:</b> a person who is learning a trade from a skilled employer:	<b>Benefactor:</b> a person who gives money or other help to a person or cause. 
<b>Deceptive:</b> giving an appearance or impression different from the true one; misleading.	<b>Malicious:</b> characterized by malice; intending or intended to do harm.
<b>Tyrannical:</b> exercising power in a cruel way.	<b>Malevolent:</b> having or showing a wish to do evil to others.
<b>Sinister:</b> giving the impression that something harmful or evil is happening or will happen 	<b>Impoverished:</b> (of a person or area) made poor. 
<b>Maturity:</b> a sign/behaviour which shows growing up; seriousness	<b>Justice:</b> fair behaviour or treatment 

Techniques 			
<b>Metaphor:</b> A comparison between two things where one thing is identified as something else E.g. 'The moon is a ghostly galleon'	<b>Personification:</b> Where an inanimate object is described as having human characteristics E.g. The trees danced in the breeze	<b>Symbolism:</b> Where an image represents an idea E.g. the dawn of a new day represents hope	<b>Imperative verbs:</b> Words which are used to issue commands
Reading Terms 			
<b>Inference:</b> An inference that comes from identifying clues in a text 		<b>Deduction:</b> An understanding based on clues in a text 	
<b>Connotation:</b> An idea or meaning suggested by a word. Sometimes there may be several connotations to a word		<b>Prediction:</b> Clues in the text suggest a possible ending or next step 	











<b>The plot</b> 	
1-6	Christmas Eve, afternoon: Pip meets the convict (Abel Magwitch) who asks him to steal a file and wittles for him. Joe and Mrs Joe are introduced. Joe is lovely and Mrs Joe is shown to hit Pip for no reason. Guns signal escaped convicts; Pip steals food and equipment and suffers from “wild fancies” caused by his guilt. When Magwitch is caught fighting with Compeyson, he confesses Pip’s crime.
7-13	Pip and Joe’s limited education is compared. Miss Havisham requests Pip to visit. Mr Pumblechook takes Pip to meet Miss Havisham. He then meets Estella and falls in love. Estella bullies Pip and makes him cry. She highlights his poor breeding by calling him “a common labouring boy”. Pip starts an apprenticeship with Joe which he resents. Estella is sent away to learn how to be a lady. Pip confesses to Biddy that he wants to become a gentleman.
14- 19	Pip is shown to look down on Joe and his lack of education. Joe is shown to be kind and thoughtful towards Pip. Mrs Joe is assaulted by Orlick which results in Joe fighting and Mrs Joe being disabled. She becomes a nicer person and Biddy moves in to care for her. Jaggers invites Pip to become a gentleman in London with “great expectations” from a secret benefactor.
20-26	Pip lives with Herbert Pocket, Miss Havisham’s nephew and learns how to be a gentleman. He thinks Miss Havisham is his secret benefactor. He learns Miss Havisham’s wedding story. Jaggers shows Pip, Molly his housekeeper as a bullied, low woman he saved. Pip doesn’t realise Molly is Estella’s mother.
27-33	Biddy writes to Pip asking if Joe can visit him in London. Pip is condescending to Joe and looks down on him in front of Henry. Pip starts to think that Pumblechook is his patron. He visits Miss Havisham and declares his love for Estella. He waits for Estella in London where she is visiting.
34-39	Pip and Herbert accumulate large debts. Mrs Joe dies. Pip comes of age (November) and becomes responsible for his finances. Pip escorts Estella to Miss Havisham where he learns of her engagement to Bentley Drummond. He quarrels with Miss Havisham and Estella then leaves broken hearted. Pip is now 23. Magwitch returns and reveals he is Pip’s benefactor.
40-44	Magwitch stays with Pip under the name Provis to disguise his identity. Jaggers confirms that Magwitch is the benefactor. Herbert advises Pip to get Magwitch out of the country. They learn about Magwitch’s life. Pip declares his love for Estella again, but she is set to marry Drummond.
45-50	Pip feels he is being watched. Pip dines with Jaggers and learns that Estelle is married. Wemmick explains that Molly is Estella’s mother, and that Magwitch is her father. Pip reminds Magwitch of Estella which is why he decided to help him. Miss Havisham confesses all and is killed in a fire at her house.
51-59	Jaggers explains Estella’s adoption and advises Pip to keep it a secret. Magwitch’s escape is thwarted. Compeyson is drowned and Pip is reconciled to his benefactor. Pip’s wealth is forfeited to the crown. Magwitch is convicted and sentenced to death. Pip tells him of Estella. Pip becomes ill and is arrested for debt but rescued by Joe. Joe marries Biddy. Eleven years later Pip returns to Miss Havisham’s house and finds Estella.


The characters 1			
<b>Pip Pirrip</b> 	<p>The Bildungsroman's protagonist, an orphan who serves as an apprentice to a gentle blacksmith, Joe. When he unexpectedly comes into a fortune, Pip grows haughty and extravagant in pursuit of a lifestyle genteel enough to meet the refined standards of Estelle. Confusing personal integrity with public reputation, Pip is cruelly disloyal to Joe and Biddy, avoiding them because of their lower class. Still, Pip learns to judge people on their internal rather than superficial standards and redeems himself by repenting sincerely and reforming his personal values.</p>	<b>Magwitch</b> 	<p>The escaped convict that Pip meets in the churchyard as a young boy. Inspired by Pip's kindness as a young boy, Magwitch devotes his life savings to Pip. Cruelly swindled by Compeyson, he has lived in and out of prison. His criminal record is largely due to unfortunate circumstances, not character. He is kind, good-hearted and generous.</p>
<b>Joe</b>	<p>Joe is the father figure for Pip. Married to Pip's harsh sister. Joe has no formal education but possess a deep sense of integrity and an unflinching moral compass. Joe is loyal, generous and kind. He acts lovingly to Pip, even when he is ungrateful.</p>	<b>Mrs Joe</b>	<p>Mrs Joe is fiery, tyrannical and false. Obsessed with social status and reputation. Attacked by Orlick for being vile, her temperament changes and she becomes patient and docile.</p>


The characters 2			
<b>Mr Jaggers</b>	<p>A famous lawyer in London, Mr Jaggers is Pop's guardian and middle man between him and his patron. Mr Jaggers also works for Miss Havisham. He is rational, sharp-minded and intimidating. He prides himself on neither expressing nor responding to human emotion.</p>	<b>Miss Havisham</b> 	<p>The wealthy daughter of a brewer, Miss Havisham was abandoned on her wedding day by her fiancé (Compeyson) and, traumatized. She preserves herself and her house in wedding regalia, shutting out the world for over twenty years. To exact her revenge on men, Miss Havisham adopts and raises Estella to be beautiful and desirable but completely heartless. Miss Havisham is capricious, manipulative, bitter and until the novel's end unable to recognize anyone's pain but her own.</p>
<b>Estella</b>	<p>The adopted daughter of Miss Havisham, Estella is proud, refined, beautiful, and cold, raised by Miss Havisham to "wreak revenge of the male sex". Miss Havisham has raised her to lack a true human heart and she is unable to love.</p>	<b>Biddy</b>	<p>An orphan Pip meets at the village school. Biddy moves into the forge to look after Mrs Joe after the attack. Later she becomes a school teacher. She is humble, kind, moral and fiercely intelligent, absorbing knowledge without any formal education. She is also sharply perceptive and sees through everyone's pretensions, calling Pip out on his delusions and snobbery long before Pip can recognize them.</p>



Key Words 2 	
<p><b>Atmosphere:</b> the mood or tone of a place</p> 	<p><b>Lustre:</b> a gentle sheen or soft glow</p> 
<p><b>Penned:</b> to be caged in a place</p> 	<p><b>Penitent:</b> feeling or showing <u>sorrow</u> and regret for having done wrong; repentant.</p>
<p><b>Bildungsroman:</b> a novel which deals with the issue of growing up</p>	<p><b>Audacious:</b> showing a willingness to take surprisingly bold risks.</p>
<p><b>Naive:</b> showing a lack of experience, wisdom, or judgement.</p>	<p><b>Opulence:</b> great wealth and luxury</p> 
<p><b>Dilapidated:</b> a building in a state of disrepair</p> 	<p><b>Disparaging:</b> expressing the opinion that something is of little worth</p> 
<p><b>Haughty:</b> behaving in an arrogant or superior way to others</p> 	<p><b>Insolent:</b> rude or lack of respect</p>

Context
<ul style="list-style-type: none"> <li>Charles Dickens was born on February 7, 1812, and spent the first nine years of his life living in the coastal regions of Kent, a county in southeast England.</li> <li>Dickens's father, John, was a kind and likable man, but he was incompetent with money and piled up tremendous debts throughout his life.</li> <li>When Dickens was nine, his family moved to London.</li> <li>When he was twelve, his father was arrested and taken to debtors' prison.</li> <li>Dickens's mother moved his seven brothers and sisters into prison with their father, but she arranged for the young Charles to live alone outside the prison and work with other children pasting labels on bottles in a blacking warehouse (blacking was a type of manufactured soot used to make a black pigment for products such as matches or fertilizer).</li> <li>Dickens found the three months he spent apart from his family highly traumatic.</li> <li>After his father was released from prison, Dickens returned to school. He eventually became a law clerk, a court reporter, and finally a novelist.</li> <li>His first novel, <i>The Pickwick Papers</i>, became a success when Dickens was only twenty-five. He was considered a literary celebrity until death.</li> <li><i>Great Expectations</i> is set in early Victorian England, a time when great social changes were sweeping the nation.</li> <li>The Industrial Revolution of the late eighteenth and early nineteenth centuries had changed society.</li> <li>The divisions between rich and poor remained nearly as wide as ever.</li> <li>London, lit by gas lamps at night and darkened by black clouds from smokestacks during the day, formed a sharp contrast with the nation's sparsely populated rural areas.</li> <li>More and more people moved from the country to the city in search of jobs.</li> <li>Throughout England, the manners of the upper class were very strict and conservative: gentlemen and ladies were expected to have thorough classical educations and to behave appropriately in social situations.</li> </ul>

Themes 	
<p><b>Ambition and self-improvement</b>            The theme of <i>Great Expectations</i> is quite simple: affection, loyalty, and conscience are more important than social advancement, wealth, and class.</p>	<p><b>Social Class</b>            Dickens explores the class system of Victorian England, ranging from the most wretched criminals (Magwitch) to the poor peasants of the marsh country (Joe and Biddy) to the middle class (Pumblechook) to the very rich (Miss Havisham).</p>
<p><b>Crime, guilt and innocence</b>            The theme of crime, guilt, and innocence is explored throughout the novel largely through the characters of the convicts and the criminal lawyer Jaggers.</p>	<p><b>Education</b>            Education allows for personal growth in the novel. Joe and Biddy show how education can be a good thing. Pip receives an education that allows him to advance into a new social position, but Pip's education improves his mind without supporting the growth of his character.</p>
<p><b>Family</b>            Although Pip and Estella both grow up as orphans, family is an important theme in the novel. Pip grows up with love and support from Joe, but fails to see the value of the unconditional love Joes gives him. He eventually makes up with Joe after understanding his errors. Estella is exposed to damaging values from her adopted mother, Miss Havisham, and gradually learns from experience what it means to care about someone.</p>	

Key Quotes 	
<b>Magwitch</b>	<p>“Hold your noise!” called a terrible voice, as a man started up from among the graves at the side of the church porch. “Keep still, you little devil, or I’ll cut your throat!” A fearful man, all in coarse grey, with a great iron on his leg. A man with no hat, and with broken shoes, and with an old rag tied around his head.</p>
<b>Estella</b>	<p>Though she called me “boy” so often, and with a carelessness that was far from complimentary, she was about my own age. She seemed much older than I, of course, being a girl, and beautiful and self-possessed; and she was as scornful of me as if she had been one-and-twenty, and a queen.</p>
<b>Miss Havisham</b>	<p>“Look at me,” said Miss Havisham. “You are not afraid of a woman who has never seen the sun since you were born?”</p>
<b>Joe Gargery</b>	<p>“It ain’t that I am proud, but that I want to be right, as you shall never see me no more in these clothes. I’m wrong in these clothes. I’m wrong out of the forge, the kitchen, or off th’ meshes. You won’t find half so much fault in me of you think of me in my forge dress, with my hammer in my hand, or even my pipe.”</p>
<b>Pip</b>	<p>I took the opportunity of being alone in the courtyard, to look at my coarse hands and my common boots. ... They had never troubled me before, but they troubled me now, as vulgar appendages.</p>

## Algebraic constructs

### Expression

A sentence with a minimum of two numbers and one maths operation

### Equation

A statement that two things are equal

### Term

A single number or variable

### Identity

An equation where both sides have variables that cause the same answer includes  $\equiv$

### Formula

A rule written with all mathematical symbols  
e.g. area of a rectangle  $A = b \times h$

## Simple Inequalities

$<$  less than

$\leq$  Less than or equal to

$>$  More than

$\geq$  More than or equal to

$$x < 10$$

Say this out loud  
"x is a value less than 10"

$$10 > x$$

Say this out loud  
"10 is more than the value"

Note:

$x < 10$  and  $10 > x$   
represent the same  
values

$$x + 2 \leq 20$$

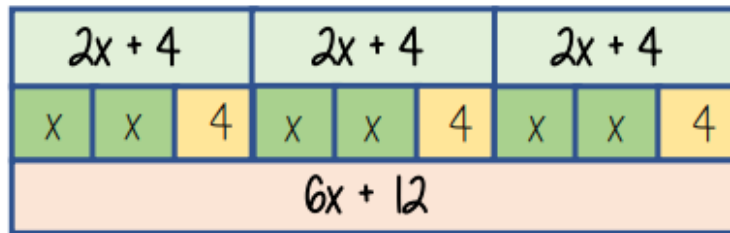
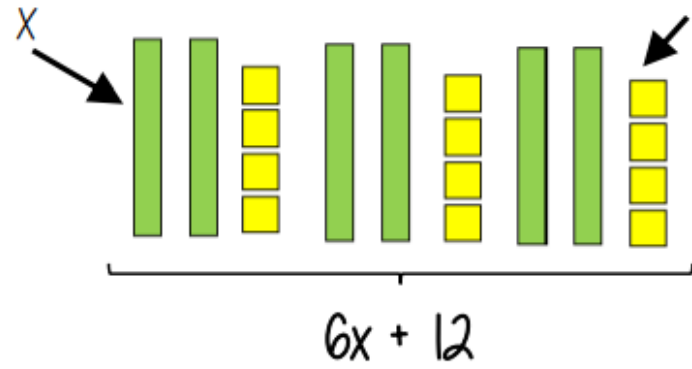
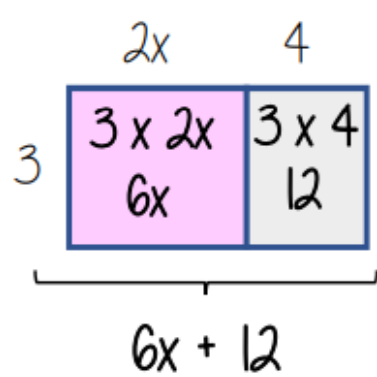
"my value + 2 is less than or equal to 20"

$$x \leq 18$$

The biggest the value can be is 18

### Multiply single brackets

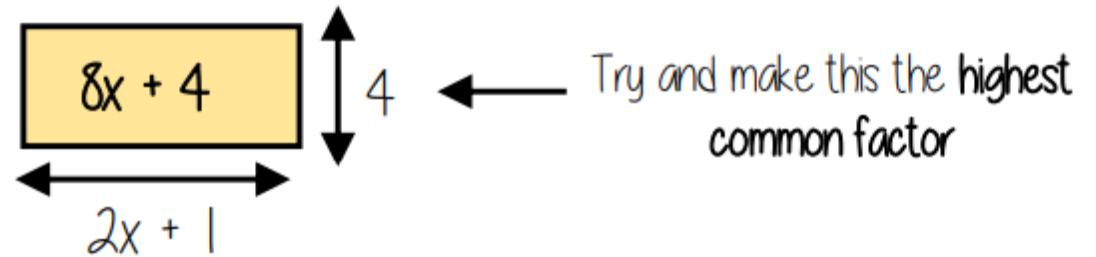
$$3(2x + 4)$$



Different representations of  $3(2x+4) = 6x + 12$

### Factorise into a single bracket

$$8x + 4$$



The two values multiply together (also the area) of the rectangle

$$8x + 4 \equiv 4(2x + 1)$$

Note:

$$8x + 4 \equiv 2(4x + 2)$$

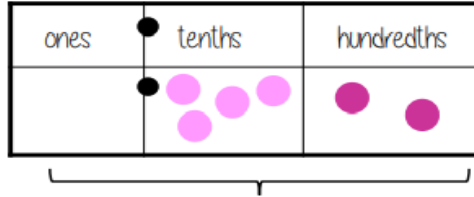
This is factorised but the HCF has not been used



### Decimals

We say  
"nought point five two"

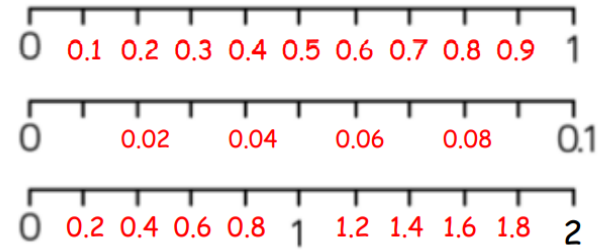
Five tenths and two hundredths



$$\begin{aligned}
 &0 \text{ ones, 5 tenths and 2 hundredths} \\
 &0 + 0.1 + 0.1 + 0.1 + 0.1 + 0.1 + 0.01 + 0.01 \\
 &= 0 + 0.5 + 0.02 \\
 &= 0.52
 \end{aligned}$$

### Decimal intervals on a number line

One whole split into 10 parts makes tenths = 0.1  
One tenth split into 10 parts makes hundredths = 0.01



### Integer Place Value

Billions			Millions			Thousands			Ones		
H	T	O	H	T	O	H	T	O	H	T	O
		3	1	4	8	0	3	3	0	2	9

Placeholder

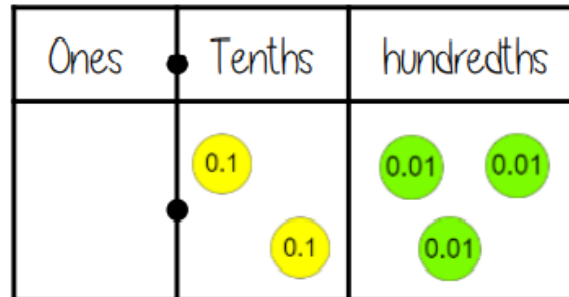
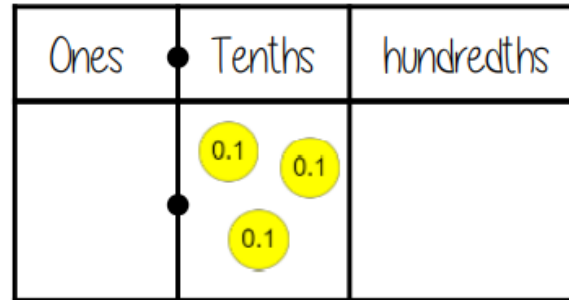
Three billion, one hundred and forty eight million,  
thirty three thousand and twenty nine

1 billion 1,000,000,000

1 million 1,000,000

### Comparing decimals

Which the largest of 0.3 and 0.23?



**0.3 > 0.23**

"There are more counters in the furthest column to the left"

0.30  
0.23

Comparing the values both with the same number of decimal places is another way to compare the number of tenths and hundredths

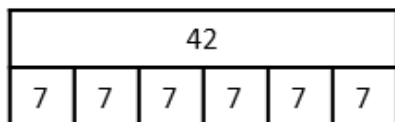
### Divisions

$$\text{Dividend} \div \text{Divisor} = \frac{\text{Dividend}}{\text{Divisor}}$$

The **dividend** is the amount being divided, the original amount.

The **divisor** is how many parts the divided is being broken into.

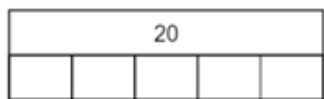
**Unit methods** find the value of one unit to find other values.



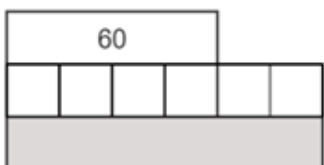
What are all the associated calculations?

$$6 \times 7 = 42 \quad 42 \div 7 = 6$$

$$7 \times 6 = 42 \quad 42 \div 6 = 7$$



How much is one small box worth?  
 $20 \div 5 = 4$



How much is the grey bar worth?

One small box =  $60 \div 4 = 15$   
Grey bar =  $15 \times 6 = 90$

### Cost per unit:

How much one unit costs.

20kg of flour costs £50. What is the cost per kg?

kg	:	£		
20	:	50		
1	:	2.5		

1kg costs £2.50

We divide to make the kg value one.

### Amount per unit cost:

How much of an item you get for £1 or 1p  
600g of sugar costs £2.40. How much sugar do you get per £?

g	:	£		
600	:	2.4		
250	:	1		

You get 250g of sugar per £1

We divide to make the £ value one.

We find which product is **best value** by comparing equivalent amounts.

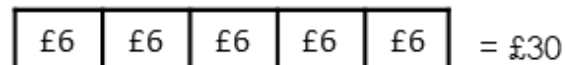
Which product is best value?

<b>Brand A</b> 3kg £3	<b>Brand B</b> 4kg £3.60
kg : £	kg : £
3 : 3	4 : 3.6
1 : 1	1 : 0.9

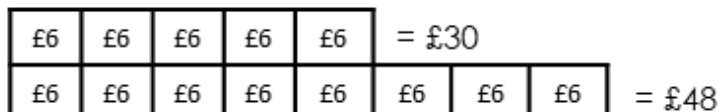
Find the cost per kg for each product.  
Brand B is best value as it costs less per kg.

A pack of 5 T-Shirts costs £30.00. How much does one T-Shirt cost?

$$30 \div 5 = 6$$



How much would 8 T-Shirts cost?



4 pens cost £3.20.

How much does one cost?



One pen costs £0.75

Two quantities are said to be **directly proportional** if they have a multiplicative relationship.

- If one doubles, the other doubles
- If one quarters, the other quarters

Quantities in a recipe are directly proportional to the number of items produced.

A recipe for 8 cupcakes uses 200g of flour.  
How much flour is needed for 56 cupcakes?

56 ÷ 8 = 7	Cupcakes	Flour
We are making 7 times as many cupcakes.	8	200
	56	1400g



### Representing a ratio

"For every 5 boys there are 3 girls"

This is the "whole" – boys and girls together

5:3

### Order is Important

"For every dog there are 2 cats"

Dogs: Cats

1:2

The ratio has to be written in the same order as the information is given.  
e.g. 2:1 would represent 2 dogs for every 1 cat **X**

### Simplifying a ratio

Cancel down the ratio to its lowest form

"For every 6 days of rain there are 4 days of sun"

6:4

+ by 2 ↓

3:2

Find the biggest common factor that goes into all parts of the ratio

For 6 and 4 the biggest factor (number that multiplies into them is 2)

"For every 3 days of rain there are 2 days of sun" – when this happens twice the ratio becomes 6:4

### Ratio 1:n (or n:1)

This is asking you to cancel down until the part indicated represents 1

Show the ratio 4:20 in the ratio of 1:n

The question states that this part has to be 1 unit. Therefore Divide by 4

4:20

1:5

This side has to be divided by 4 too – to keep in proportion

**\*\*the n part does not have to be an integer for this type of question**

### Sharing a whole into a given ratio

James and Lucy share £350 in the ratio 3:4.  
Work out how much each person earns

#### Model the Question

James: Lucy

3:4

#### Find the value of one part

Whole: £350  
7 parts to share between (3 James, 4 Lucy)

$£350 \div 7 = £50$

= one part = £50

#### Put back into the question

James: Lucy

3:4

$\times 50$   $\rightarrow$  £150:£200  $\leftarrow \times 50$

James =  $3 \times £50 = £150$

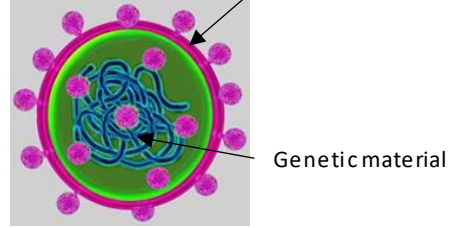
Lucy =  $4 \times £50 = £200$

## 1. What are pathogens?

A pathogen is a micro-organism that causes diseases, for example bacteria, fungi or viruses.

Not all microbes cause diseases, some can be useful, for example, Yeast is used to make bread and alcohol.

## 4. Virus particle



## 6. How pathogens spread:

The spreading of microbes and disease is known as **transmission**.

### 1. Transmission by air

A cough or a sneeze can release millions of microbes into the air which can then infect somebody else.



### 2. Transmission by water

Dirty water can transmit many diseases, e.g. cholera, which can be transmitted by drinking.



### 3. Transmission by animals

An animal can carry a microbe from one place to another, e.g. a mosquito which spreads the **malaria parasite**.



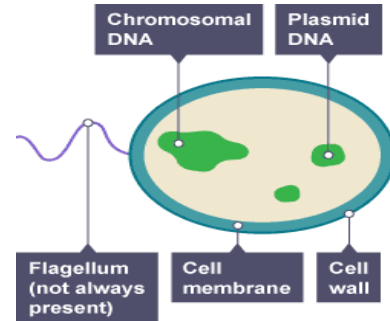
### 4. Transmission by contact

Many microbes can be exchanged from one person to another by **direct** or **indirect** contact:

- direct contact by hand;
- indirect contact, e.g. by walking on a wet floor already contaminated by someone else who has athlete's foot;
- sexual contact.



## 2. Bacterial cell:



## KS3 Science Microbes and Disease

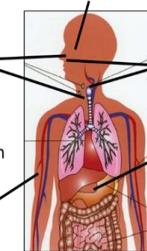


**BROADOAK  
ACADEMY**

## 7. Stopping pathogens:

**Cilia** – tiny hairs found in nose and respiratory system that wafts and traps dust

**Skin** – barrier that stops microbes entering body

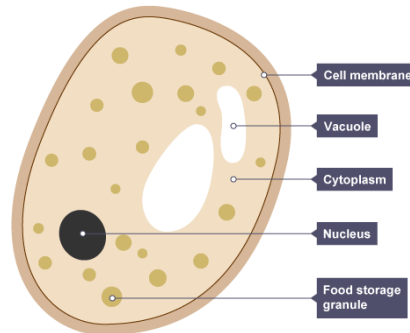


**Mucus** – in nose and respiratory tract that traps dust and microbes

**Stomach** – stomach acid kills microbes

**Platelets** – fragments in blood that form scabs to prevent microbes getting through cuts

## 3. Yeast cell (a fungus):



## 5. Microbe facts:

Bacteria	Fungi	Viruses
Unicellular organisms	Can be uni- or multi- cellular	Smaller and more simple than cells
Smaller and more simple than animal and plant cells	More similar to our cells than bacteria, larger	A protein coat surrounding some genetic material
Have not nucleus	Unicellular examples include yeast	Require a host cell to reproduce
Often have a flagellum for moving	Multicellular examples include mushrooms	

## 1. What is Energy

**Energy** is a quantity that is stored in many objects and systems.

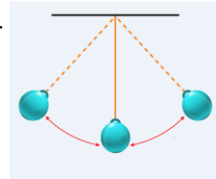
The amount of energy stored is a measure of the amount of **work** that object or system can do. It is measured in **joules (j)**.



## 4. Conservation of Energy

When energy is transferred from one store to another the **total amount of energy does not change**.

Energy cannot be created or destroyed. All that can be changed is how it is stored. This idea is called the **law of conservation of energy**.



## 2. Energy Stores.

- Energy is stored in fuels as **chemical potential energy**
- Energy is stored in anything elastic when it is stretched or squashed, as **elastic potential energy**
- Energy is stored in any object that has been lifted up, because the object stores **gravitational potential energy**
- Energy is stored in moving objects as **kinetic energy**.
- Energy is stored in any object as **heat energy**. (Obviously, if it is cold, it doesn't store much heat energy!) This is also known as *thermal energy*.

## 3. Energy Transfers

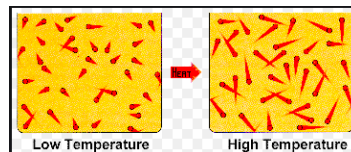
Examples to know:

- When a fuel is **burned**, energy in the chemical potential store of the fuel ends up in the thermal energy store of the surroundings
- When an object **falls** off a shelf, the energy in the gravitational potential store is transferred to the kinetic energy store while it is falling.
- When the object **hits the floor**, all the starting energy in the gravitational potential store it ends up in the thermal energy store of the surroundings
- When a spring that's been stretched is released, the energy in the elastic potential store is transferred to kinetic energy store, then to the thermal energy store of the surroundings

## 5. Temperature

The **temperature** of an object is to do with how hot or cold it is, measured in degrees Celsius (°C).

This is due to the movement of the particles in the object. When an object is heated, its particles move more vigorously and its temperature increases.



## 6. Heating.

If there is a difference in temperature between two objects, energy is transferred from the hotter object to the cooler one. When they are at the same temperature, we say that they are in **thermal equilibrium**. The methods of transfer are:

**Conduction** - Particles bump into nearby particles and make them vibrate more. This passes energy through the substance from the hot end to the cold end.

**Convection** - The particles in liquids and gases can move from place to place, particles with a lot of energy move, and take the place of particles with less energy.

**Radiation** - The transfers of energy to their surroundings by **infrared radiation**. The hotter an object is, the more infrared radiation it gives off. No particles are can work meaning radiation works in space

## 7. Conductor and Insulators

A substance that transfers energy easily from the hot end to the cold end it is called a **conductor**.

Examples - Metals, water, diamonds.



A substance that does not transfer energy easily from the hot part to the cold part is called an **insulator**

Examples - Plastics, air, wool.



## 8. Power

The amount of energy transferred is called '**work done**' and is measured in joules (j)

**Power** is the amount of work done divided by the time it took to transfer all the energy. It is measured in **watts (w)**.

To calculate the **power** we use the equation:

$$\text{power} = \frac{\text{work done}}{\text{time taken}}$$

$$P = \frac{E}{t}$$

Where:

- power (P) in watts (W)
- work done (E) in joules (J)
- time (t) in seconds (s)

# KS3 Science Energy Transfers



**BROAD OAK  
ACADEMY**

## 1. Puberty and Adolescence

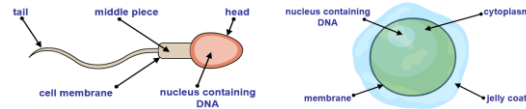
As a child develops into an adult, their body prepares for reproduction. Boys and girls begin puberty between the ages of 8-14. These physical and emotional changes are triggered by hormones released from the testes and ovaries. Girls develop much more quickly.

Some changes happen in boys only, some happen in girls only and some happen in both. Examples include underarm hair growth; facial hair growth; pubic hair growth; body odour; voice breaks; breasts develop; testes produce sperm cells; testes and penis get bigger; ovaries start to release egg cells; hips get wider; shoulders widen and growth rate increases.



## 4. Gametes

Gametes are sex cells. Sperm cells are the male gamete and egg cells (ova) are the female gamete.

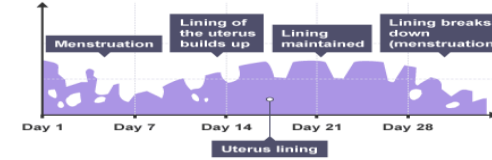


Gametes have adaptations to increase the chances of fertilisation and successful development of an embryo. For example, sperm cells are produced in large numbers to increase the chance of fertilisation. Sperm cells have these adaptations:

- a tail to move them towards an egg cell
- many mitochondria to provide energy

## 6. Menstrual Cycle

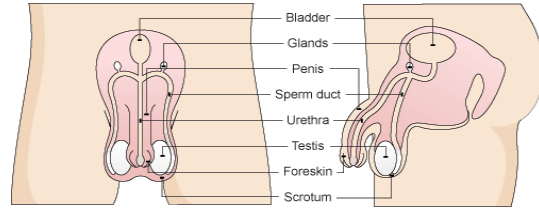
The menstrual cycle prepares the female body for pregnancy by causing eggs (ova) to mature and be released. It lasts for 28 days.



On about day 14, the mature egg cell is released from the ovary. This is called ovulation. If the egg cell does not meet with a sperm cell in the oviduct, the lining of the uterus begins to break down and the cycle repeats.

## 2. Male Reproductive System

Sperm cells are produced in the testes and these are located in a bag of skin located underneath the penis called the scrotum. Sperm cells travel out of the male penis when inserted into the vagina during sexual intercourse via the sperm duct. Sperm travel in semen; a liquid produced by glands.

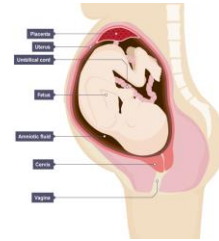


# KS3 Science Human Reproduction



## 7. Gestation and Pregnancy

A fertilised egg cell divides to form a ball of cells called an embryo. The embryo attaches to the lining of the uterus where it gets nutrients and oxygen. It begins to develop into a foetus and finally into a baby.

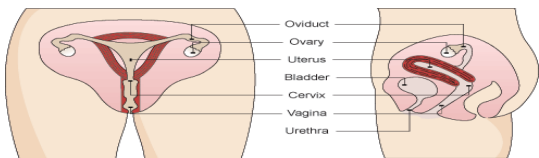


The foetus will grow an umbilical cord and a placenta. The placenta is responsible for removing waste substances, as well as providing oxygen and nutrients. The umbilical cord connects the foetus to the placenta.

The foetus is protected from bumps and knocks by the amniotic fluid sac.

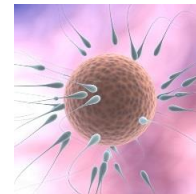
## 3. Female Reproductive System

Females have 2 ovaries where the eggs (ova) are produced and matured. When the egg (ova) is released from the ovary, it travels towards the uterus along a tube called the oviduct. Ciliated cells line the oviduct to move the egg towards the uterus. The uterus is where an embryo (multiple cells) develops into a foetus (unborn baby). The cervix is a ring of muscle between the uterus and the vagina which keeps the foetus in place during pregnancy.



## 5. Fertilisation

Fertilisation is when a sperm cell and an ovum fuse. Sperm cells are released into the female reproductive system during sexual intercourse (ejaculation). Only one sperm cell breaks through the cell membrane and enters the ovum, and only the head enters.



The nuclei fuse together, putting the mother and father's genetic information together. The fertilised ovum is now an embryo.

## 8. Birth

In humans, gestation lasts 40 weeks. This is the amount of time it takes for a foetus to develop into a baby. When the baby is ready to be born, the cervix relaxes and the muscles in the wall of the uterus contract. Muscle contractions increase in intensity and frequency, eventually pushing the baby out of the vagina.

Unfortunately a baby can enter the world unhealthy. This can be due to inheriting diseases from one of the parents or due to lifestyle choices made by the mother:

**Smoking** leads to less oxygen diffusing from mother to foetus via the placenta.



Foetal Alcohol Syndrome (FAS) is when the mother drinks excessive alcohol whilst pregnant. This damages the baby's nervous system and brain.







Key Dates

- 750** The **Abbasid** family took control of the **Muslim Empire** in the east.
- 762** **Baghdad** was established as the capital city of the Abbasid Caliphate.
- 793** **Paper** arrives in Baghdad from China.
- 800** Baghdad is the **largest city in the world**.
- 830** The **House of Wisdom** was established.
- 850** Baghdad has its own **hospital**.
- 1258** Baghdad was destroyed by the **Mongols**.







Key People

- Ibn Sina**  Doctor and scholar known in English as Avicenna (980-1037). Wrote a huge medical encyclopaedia known as the "Canon of Medicine".
- Al-Razi**  Doctor and scholar known as Rhazes (854-925). Helped identify the difference between smallpox and measles and influenced the hospital in Baghdad.
- Caliph Al-Ma'mun**  Caliph of the 'Abbasid Dynasty ruled 813 to 817 and he founded the House of Wisdom.
- Caliph Al Mansur**  Founder of the Baghdad in 762AD

**Meanwhile elsewhere. How advanced was the Islamic world?**

**Year 7 - History**

Key Places

- Baghdad** Established by the Abbasid Caliphs and was the capital of the Islamic World. It became a centre of learning during the Golden Age of Islam. 
- House of Wisdom** The Grand Library of Baghdad. Home to academic works gathered from across the known world. 
- Golden Gate Palace** The palace was the Caliph's residence and was located in the centre of the round city of Baghdad. 
- Grand Mosque** The mosque was next to the Caliph's palace so that when people bowed down to pray they were bowing down to the Caliph. 

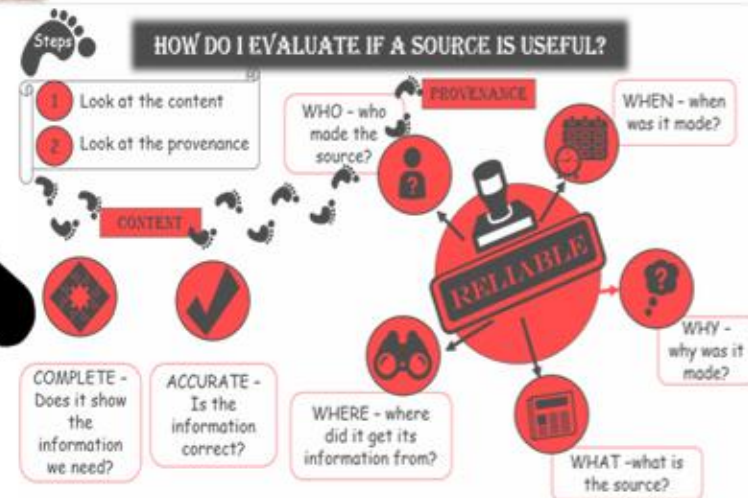


Key Words

- Abbasid** A member of the Abbas family, the ruling Caliphs of Baghdad.
- Anatomy** The scientific study of an animal or plant, or any of its' parts.
- Arab** Name given to the group of people originating from the Middle East and North Africa
- Astronomy** The scientific study of space and the universe
- Caliph** Spiritual leader of Islam, any of the former Muslim rulers of Baghdad.
- Caliphate** An Islamic state led by a Caliph
- Golden Age of Islam** A period of cultural, economic, and scientific flourishing in the Islamic World, dated from the 8th century to the 13th century.
- Scholar** Someone who has excellent knowledge of a particular subject.



**Inference** - Making an inference is working out some information from a source (an educated guess).







**Key People**

- Martin Luther** A German monk that thought that the Catholic Church was corrupt he set up the new Protestant church.
- Pope Clement II** The head of the Catholic Church that refused to give Henry VIII a divorce.
- Henry VIII** King from 1509-1547. Head of the Church of England.
- Thomas Cromwell** Henry VIII put him in charge of getting rid of the monasteries.
- Francis Drake** The first Englishman to circumnavigate the globe.
- Mary Queen of Scots** Ruler of Scotland 1542-1547 became a focus for Catholic rebellion in England.
- Mary Tudor** Daughter of Henry VIII. Queen of England between 1553-1558
- Edward VI** Son of Henry VIII. King between 1547-53.
- Elizabeth I** Daughter of Elizabeth I. Queen between 1558-1603.
- Phillip II** King of Spain married to Mary Tudor.



**What changed in the Reformation?**

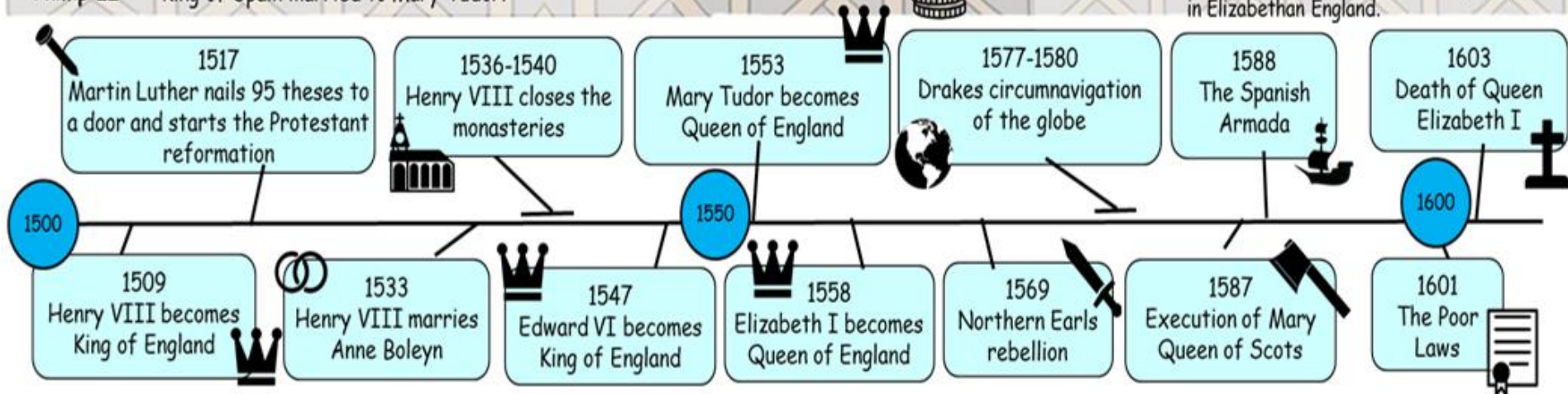
**Year 7 - History**



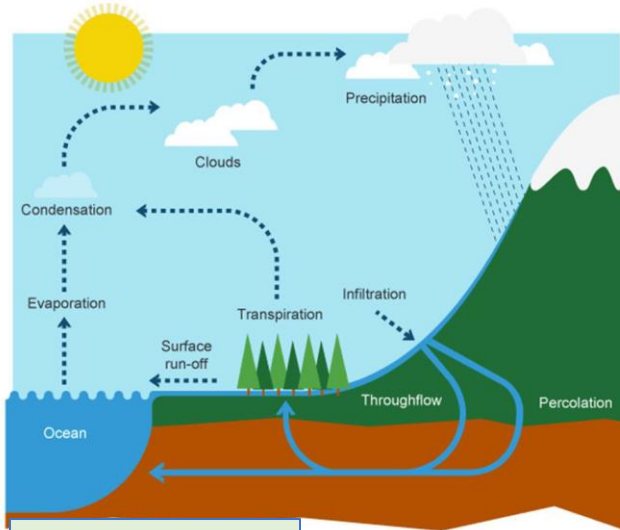
**Key Words**



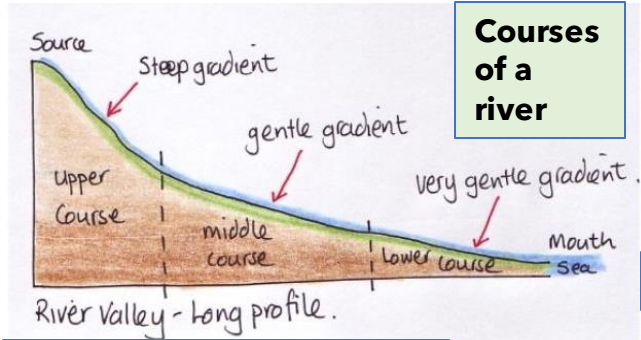
- The reformation** Attempts to reform the Catholic Church and the development of Protestant Churches in Western Europe.
- heir** Next in line to the throne.
- Roman Catholic** The Christian church of which the Pope, or bishop of Rome, is the supreme head.
- Protestant** Someone who follows Christianity using beliefs developed from the Reformation.
- Break with Rome** When Henry VIII broke away from the Catholic Church and became head of the Church of England.
- Dissolution of the Monasteries** The monasteries that were run by the Catholic Church were closed down.
- Puritans** An extreme version of Protestantism
- Circumnavigation** To go around the world
- The Spanish Armada** A fleet of ships launched to attack England by Spain.
- Poor Laws** A series of laws brought in to help the poor in Elizabethan England.



## How do rivers shape the landscape?



**The Water Cycle**



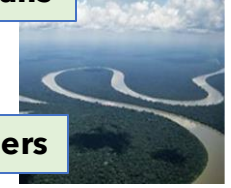
**Courses of a river**

- River Processes:**
- **Erosion:** The wearing away of land
  - **Transportation:** The movement of eroded land in the river
  - **Deposition:** The dropping of eroded material by water

**V-shaped valleys**



**Waterfalls**

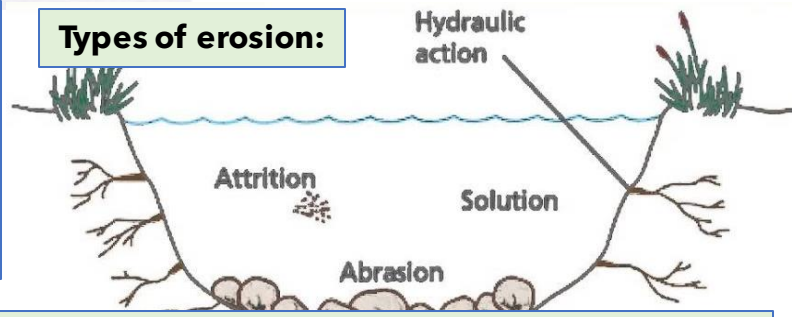


**Meanders**



**Deltas**

**Types of erosion:**



Keyword	Definition
<b>Evaporation</b>	When sun heats water it changes into water vapour and rises.
<b>Condensation</b>	As air rises it cools and the water vapour forms clouds.
<b>Precipitation</b>	Water droplets that fall to the ground as rain, hail or snow.
<b>Infiltration</b>	Water soaks into the soil.
<b>Transpiration</b>	When moisture is evaporated from plants.
<b>Surface runoff</b>	When water runs off the surface of the land.
<b>Throughflow</b>	When water flows through the soil.

### Flooding in the Somerset Levels

**Causes**  
 In the winter of 2013/14, the Somerset levels experienced very severe and extensive flooding. Several factors contributed to the flooding which include:

- Heavy rainfall over a short period of time
- High tides
- Dredging (Lack of)

Impacts/Effects		
Social	Environmental	Economic
Over 600 homes flooded	Ecosystems destroyed	Cost of damage was £10 million
People evacuated from their homes and put into temporary accommodation	Limited food supplies for animals	Many people couldn't go to work as jobs were disrupted and roads closed due to flooding





Is the geography of Russia a curse or a benefit?



Keyword	Definition
<b>Eurasia</b>	A term used to describe the combined continental landmass of Europe and Asia
<b>Arctic circle</b>	Line of latitude at 66 degrees north of the equator
<b>Biome</b>	A large community of plants and animal found
<b>Climate</b>	The average weather conditions over a long period of time
<b>Climate graph</b>	A graph showing the temperature and rainfall for a location over a year
<b>Nature reserve</b>	An area of land managed to protect its physical features
<b>Biodiversity</b>	The number of different plant and animal species in an area
<b>Adaptation</b>	How plants and animals have changed to survive in a particular environment
<b>Permafrost</b>	A layer of permanently frozen ground
<b>Population distribution</b>	The number of people on average in a given area (usually 1 square km)
<b>Sparsely populated</b>	Few people live there
<b>Densely populated</b>	Lots of people live there

The biomes of Russia



Russia's population density on a map



Is the geography of Russia a curse or a benefit?

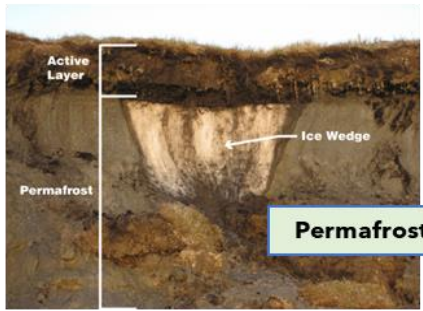
Covering 17 million square kilometres, **Russia is the largest country in the world.** It is 70 times the size of the UK and twice the size of the USA. Russia borders 14 nations and spans 11 different time zones.

Moscow's climate graph

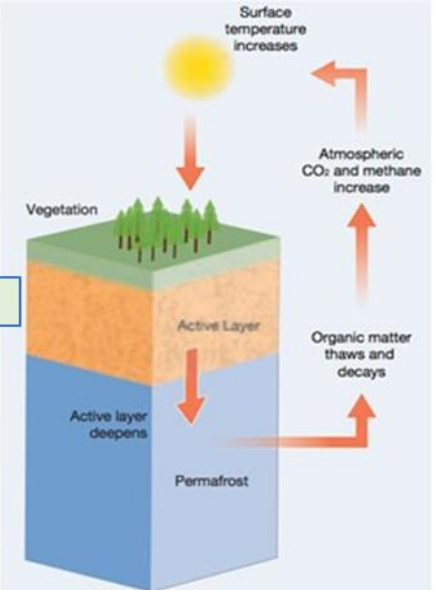


Tundra biome

- Tundra comes from the Finnish 'tunturia', which means barren or treeless land.
- Trees do not grow in the tundra because the ground is permanently frozen 25-100cm down.
- Tundra is a biome where the ground stays frozen for most of the year and there is very little precipitation.
- Tundra environments are found in the Northern hemisphere surrounding the Arctic Circle - where temperatures stay below 0°C most of the year.



Permafrost







Saviour	The one who saves people. Christians believe Jesus Christ saved people from their sins, by healing their relationship with God through dying on the cross
Incarnation	“To become flesh” The Christian idea that Jesus is God made flesh.
Resurrection	Coming back from the dead to eternal life. Christians believe Jesus was resurrected on the 3 <sup>rd</sup> day after he died
Parable	A story Jesus told to teach us something for example the Good Samaritan
Gospel	Good news: Jesus announces that we can all be at one with God and with each other
Trinity	One God who can be experienced in three forms: Father God, the holy spirit and Jesus

### Christian Creed (The official statement of what they believe)

"I believe in God, the Father almighty, creator of heaven and earth.

I believe in Jesus Christ, God's only Son, our Lord, who was conceived by the Holy Spirit, born of the Virgin Mary, suffered under Pontius Pilate, was crucified, died, and was buried; he descended to the dead. On the third day he rose again; he ascended into heaven, he is seated at the right hand of the Father, and he will come to judge the living and the dead.

I believe in the Holy Spirit, the holy catholic Church, the communion of saints, the forgiveness of sins, the resurrection of the body, and the life everlasting.  
Amen

### Jesus' Resurrection and Ascension

The Bible says "After the Sabbath, at dawn, Mary Magdalene and the other Mary went to look at the tomb. Jesus' body was not in the tomb and an angel appeared to them. The angel said to the women, "Do not be afraid, for I know that you are looking for Jesus, who was crucified. He is not here; he has risen, just as he said. Go quickly and tell his disciples: 'He has risen from the dead and is going ahead of you into Galilee. There you will see him.' Now I have told you." So the women hurried away from the tomb, afraid yet filled with joy, and ran to tell his disciples. Suddenly Jesus met them. "Greetings," he said. They came to him, clasped his feet and worshiped him. Then Jesus said to them, "Do not be afraid. Go and tell my brothers to go to Galilee; there they will see me."

During the next forty days the Gospels say that the risen Jesus appeared to many of his followers. Teaching them and even having meals with them He taught his disciples that they were to continue his work on earth and that his death and resurrection were part of God's plan.

40 days after the Resurrection, The Bible says that Jesus ascended into heaven and took his seat at the right hand of God.

**Easter** is about Jesus's resurrection. Easter celebrates Jesus victory over death, when God raised him back to life after his crucifixion. This reminds people that God loves them so much he was willing to suffer death on the cross and gives them hope of eternal life.

Lent is the 40 days before Easter leading up to Easter week also referred to as Holy week. Palm Sunday is the Sunday before Easter, when Christians remember Jesus' triumphant entry into Jerusalem. This marks the beginning of Holy week – Jesus's final week before his crucifixion. Maundy Thursday commemorates the last supper held on the night before Jesus died. Good Friday recalls Jesus's crucifixion – special services are held, particularly on Friday afternoon. Easter day is a joyous occasion when Jesus's resurrection is celebrated.

### Different Christian ideas about Jesus

- Jesus is believed to be the Son of God
- Jesus is believed to be God made flesh on earth
- Jesus is the messiah (a leader who will save the people)
- Jesus is believed to be the king of the Jews
- Jesus is the Saviour of the world



<b>Allah</b>	One God, who has no equal .
<b>Islam</b>	Peace, through submission to God
<b>Sunnah</b>	A saying, action or a practice attributed towards the Prophet Mohammed (pbuh)
<b>Revelation</b>	This is where God has revealed himself to a person. For example the Night of Power
<b>Ummah</b>	Worldwide family of Muslims
<b>Religious Experience</b>	Something that can only be explained by the existence of God.

Mohamed (pbuh) was born in Mecca in 570CE. His father died before he was born. His mother died when he was 6.

When he grew up he became a trader. People said he was honest in business.

He married his employer, a rich and independent woman called Khadijah.

Mohamed's family believed in one God, but this was unusual at the time.

One night, Mohamed was in a cave praying when he heard the words of Allah, spoken by the angel Jibril (Gabriel). Mohamed (pbuh) had never been taught to read or write, but he told others the exact words that Allah had said. These words were written down: This became the Quran.

### The Night of Power

Happened in 610 in the cave of Hira

The Angel Jibril communicates Allah's command to "Read" three times.

The first Surah's (verses of the Qur'an are revealed to Muhammad.

Muslims regard this as the most important event in history.

Stop having **wars** and feuds, and to settle our quarrels through the law.

There is **only one God**. Idols should be destroyed.

People with money should help the poor. "He is not a Muslim who eats his fill while his brother goes hungry".

Muhammad said all people are "equal like teeth on a comb", whatever their colour or background.

Mohamed's Constitution of Medina taught that people **must not** –

1. Act out of anger.
2. Hate, envy or provoke each other.
3. Spy on each other or betray each other's trust.
4. Drink alcohol or gamble.
5. Cheat each other.
6. Charge interest on money loaned to those in need.
7. Pay bribes to get what is lawfully not yours.
8. Kill unwanted babies either before or after birth.
9. Be cruel to animals.

The constitution of Medina is considered to be the first declaration of human rights.

People who live good lives will go to paradise. Those who get rich by making others suffer will go hell.

Mohammed began to preach to the people. He said "stop worshipping all these statues. There is only one God." But the people of Mecca would not listen to him. They tried to kill him, so when he was invited to, he journeyed to a city called Medina, this is called the hijra.

In Medina, Mohammed (pbuh) was welcomed and he had the first mosque built so that people could go there to worship Allah. He became the leader of the new community: The Ummah.

Mohammed (pbuh) died when he was 63. He was buried in Medina and a mosque was later built around his tomb.

### The Hijra

"Happened in about 622"

Muhammad was invited to Yathrib by neighbouring tribes.

Muhammad escapes, the people that would kill him, in the dead of night with Abu Bakr. Muhammad hid in a cave from the Meccans who followed, trying to kill him.

Allah saves the Prophet when he commands a spider to spin a web at the cave entrance and a bird to build a nest there.

### The Night Journey

"Happened in about 620"

The Angel Jibril takes the Prophet from the Ka'ba to Jerusalem on a winged horse (Al-Buraq.)

Muhammad leads the other Prophets in prayer.

Muhammad is taken through the seven levels of heaven to meet Allah

Allah gives the ummah the gift of compulsory prayer (Salah).

## 1. Key Sentences

Me llamo	<i>I am called</i>
Estoy (place/feelings)	<i>I am</i>
Soy (description)	<i>I am</i>
Tengo	<i>I have</i>
Voy	<i>I am going/I go</i>
Es	<i>It is/it's</i>
No es	<i>It is not/It's not</i>
¿Cómo es?	<i>What's it like?</i>

## 2. Opinions

¿Te gusta?	<i>Do you like?</i>
Me encanta (n)	<i>I love</i>
Me gusta (n) mucho	<i>I really like</i>
Me gusta (n)	<i>I like</i>
No me gusta(n)	<i>I don't like</i>
Odio	<i>I hate</i>
Porque	<i>because</i>

### Fancy Opinions

Pienso que	<i>I think that</i>
Creo que	<i>I believe that</i>
En mi opinión	<i>In my opinion</i>

## 4. Describing things

¿Hay...?	<i>Is/are there...?</i>
¿Qué hay...?	<i>What is/are there...?</i>
En mi...	<i>In my...</i>
Hay	<i>There is/are</i>
No hay	<i>There aren't any</i>
es	<i>it's</i>
No es	<i>it's not</i>
(Ellos/ellas) son	<i>they are</i>
(Ellos/ellas) no son	<i>they aren't</i>

## 3. Adjectives

An **adjective** describes a noun e.g. a **red** bag.  
In Spanish, adjectives normally go **after the word** it's describing e.g. una bolsa **roja** (a bag **red**) and they also need to **agree** with the noun that is being described.  
For example, if the noun is **feminine** the adjective has to agree (e.g una botella roja)  
If the noun is **plural** we also add an 's' to make it agree (e.g. unas botellas rojas)

Adjective examples	Masc Singular	Fem singular	Masc plural	Fem plural
red	rojo	roja	rojos	rojas
white	blanco	blanca	blancos	blancas

## 5. Pronouns

Yo	<i>I</i>	Nosotros	<i>we</i>
Tu	<i>you (inf/pl)</i>	Vosotros	<i>you (f/pl)</i>
Él	<i>he</i>	Ellos/ellas	<i>they</i>
Ella	<i>she</i>		

## 6. The Present Tense

Normalmente	<i>normally</i>
A menudo	<i>often</i>
A veces	<i>sometimes</i>

**Step 1: Take the infinitive of the verb (AR/ER/IR)**

**Step 2: Chop off the ending (AR/ER/IR)**

**Step 3: Add the correct ending:**

Pronouns	AR verbs	ER verbs	IR verbs
Yo	o	o	o
Tu	as	es	es
El/Ella	a	e	e
Nosotros	amos	emos	imos
Vosotros	áis	éis	ís
Ellos/Ellas	an	en	en

### Super Five Irregular Verbs:

There are verbs that don't follow this pattern.  
The 4 most important irregular verbs are on this sheet (SER, TENER, IR, and HACER).

## 7. SER – TO BE

yo soy	<i>I am</i>
tú eres	<i>You are (s)</i>
él/ella es	<i>He/she is</i>
nosotros somos	<i>we are</i>
vosotros sois	<i>you are (pl)</i>
ellos/ellas son	<i>they are</i>

## 8. TENER – TO HAVE

yo tengo	<i>I have</i>
tú tienes	<i>You have (s)</i>
él/ella tiene	<i>He/she has</i>
nosotros tenemos	<i>we have</i>
vosotros tenéis	<i>you have (pl)</i>
ellos/ellas tienen	<i>they have</i>

## 9. IR – TO GO

yo voy	<i>I am/going</i>
tú vas	<i>You go/are going (s)</i>
él/ella va	<i>He/she goes/are going</i>
nosotros vamos	<i>we go/are going</i>
vosotros vais	<i>you go/are going (pl)</i>
ellos/ellas van	<i>they go/are going</i>

## 10. HACER – TO DO/MAKE

yo hago	<i>I do</i>
tú haces	<i>You do (s)</i>
él/ella hace	<i>He/she does</i>
nosotros hacemos	<i>we do</i>
vosotros hacéis	<i>you do (pl)</i>
ellos/ellas hacen	<i>they do (m)</i>

## 11. Negatives

No	<i>not</i>
Nunca	<i>never</i>

**Put these in front of the verb:**

Como	= I eat
No como	= I don't eat
Nunca como	= I never eat

## 7.2 People Around Me

### Spanish Key Vocabulary

#### (1) Pronouns

yo	I
tú	you (sing, inf)
él	he
ella	she
nosotros	we
vosotros	you (pl, formal)
ellos	they (boys/mix)
ellas	they (all girls)

#### (2) tener – to have

¿Tienes ...?	Do you have...?
Tengo	I have
Tienes	you have (s)
Tiene	he/she has
Tenemos	we have
Tenéis	you have (pl)
Tienen	they have

#### (3) Ser – to be

¿Eres ...?	Are you...?
Soy	I am
Eres	you are (s)
Es	he/she is
Somos	we are
Sois	you are (pl)
Son	they are

#### (4) My

mi	(mi padre = my dad)
mis	(mis hermanos = my siblings)

	sing	plural
my	mi	mis
your	tu	tus
his/her	su	sus

#### (5) Opinions

¿Qué te parece...?	What do you think of...?
¿Qué piensas de...?	What do you think of...?
Me encanta(n)	I love
Me gusta(n) mucho	I really like
Me gusta(n)	I like
Prefiero	I prefer
Preferiría	I would prefer
No me gusta(n)	I don't like
Odio	I hate
En mi opinión	In my opinion
Pienso que	I think that
Creo que	I believe that
Encuentro que	I find that
Me parece que	It seems to me that
Personalmente	Personally

#### (6) Nationality

Soy...	I am...
inglés/esa	English
galés/esa	Welsh
escocés/esa	Scottish
irlandés/esa	Irish
francés/esa	French
belga	Belgian
suizo/a	Swiss
alemán/ana	German
español(a)	Spanish
somalí	Somalian
polaco/a	Polish
húngaro/a	Hungarian
rumano/a	Hungarian
estadounidense	American
bangladésí	Bangladeshi
paquistaní	Pakistani

#### (7) Adjective agreement

Remember adjectives have to agree with the noun they are describing. Normally you would change the final 'o' to an 'a' to make the adjective feminine:

él es lindo – ella es linda

él es viejo – ella es vieja

él es simpático – ella es simpática

However, there are some irregular patterns. Check out the following changes...

él es grande – ella es grande

él es feliz – ella es feliz

él es trabajador – ella es trabajadora

él es hablador – ella es habladora



### (8) Hair and Eyes

<b>Tengo...</b>	<b>I have...</b>
<b>Tenía...</b>	<b>I used to have...</b>
<b>Tiene...</b>	<b>He/She has...</b>
<b>Tenía...</b>	<b>He/She used to have...</b>
el pelo castaño	brown hair
el pelo negro	black hair
el pelo castaño	light brown hair
el pelo rubio	blonde hair
el pelo corto	short hair
el pelo largo	long hair
el pelo medio largo	mid-length hair
el pelo ondulado	wavy hair
el pelo rizado	curly hair
el pelo liso	straight hair
el pelo afro	afro hair
los ojos azules	blue eyes
los ojos marrones	brown eyes
los ojos verdes	green eyes
los ojos grises	grey eyes
los ojos castaños	hazel eyes
los ojos negros	black eyes
<b>Soy...</b>	<b>I am...</b>
<b>Es...</b>	<b>He/She is...</b>
pelirrojo/a	redheaded
alto/a	tall
bajito/a	short
gordo/a	fat
delgado/a	thin
de complexión media	medium size
calvo/a	bald

### (9) Personality Adjectives

<b>Soy...</b>	<b>I am...</b>
<b>Eres...</b>	<b>You are...</b>
<b>Es...</b>	<b>He/She is...</b>
simpático/a	kind
agradable	pleasant
feliz	happy
triste	sad
hablador(a)	chatty
tímido/a	shy
ruidoso/a	noisy
adorable	cute
guapo/a	good-looking
hermoso/a	beautiful
feo/a	ugly
divertido/a	fun
aburrido/a	boring
fuerte	strong
joven	young
viejo/a	old
limpio/a	clean
rápido/a	fast
rico/a	rich
sabio/a	wise
trabajador(a)	hardworking
perezoso/a	lazy
molesto/a	annoying
serio/a	serious
estricto/a	strict
maleducado/a	rude
glotón/ona	greedy
deportista	sporty

### (10) Extra details

<b>Llevo</b>	<b>I wear</b>
<b>Lleva</b>	<b>He /She wears</b>
<b>Tengo</b>	<b>I have</b>
gafas	glasses
lentillas	contact lenses
piercings	piercings
un tatuaje	a tattoo
un hiyab	a hijab
una cicatriz	a scar
una barba	a beard
un bigote	a moustache
pecas	freckles
<b>Me llamo</b>	<b>I am called</b>
<b>Se llama</b>	<b>He/She is called</b>
<b>Se llaman</b>	<b>They are called</b>

### (11) Connectives

<b>y</b>	and
<b>pero</b>	but
<b>porque</b>	because
<b>excepto</b>	except
<b>sin embargo</b>	however

### (12) Intensifiers

muy	very
bastante	quite
un poco	a bit
demasiado	too
extremadamente	extremely

### (13) Comparisons

<b>más - more</b>	Juan es más interesante que Pablo
<b>menos - less</b>	Pablo es menos interesante que Juan

### (14) Superlative

<b>el / la más - the most</b>	Juan es el más inteligente
<b>el / la menos - the least</b>	María es la menos simpática



# Y7 French Fundamentals

## 1. Key Sentences

Je m'appelle	<i>I am called</i>
Je suis	<i>I am</i>
J'ai	<i>I have</i>
Je vais	<i>I am going/I go</i>
C'est	<i>It is/ it's</i>
ce n'est pas	<i>It is not/It's not</i>
C'est comment?	<i>What's it like?</i>

## 3. Adjectives

An **adjective** describes a noun e.g. a **green** bag.  
In French, adjectives normally go **after the word** it's describing e.g. un sac **vert** (a bag green) and they also need to **agree** with the noun that is being described.  
For example, if the noun is **feminine** the adjective has to agree (e.g. une gomme verte)  
If the noun is **plural** we also add an 's' to make it agree (e.g. deux gommes vertes)

## 6. The Present Tense

Normalement	<i>normally</i>
D'habitude	<i>usually</i>
Quelquefois	<i>sometimes</i>

**Step 1: Take the infinitive of the verb (ER/IR/RE)**

**Step 2: Chop off the ending (ER/IR/RE)**

**Step 3: Add the correct ending:**

Pronouns	ER verbs	IR verbs	RE verbs
Je	e	is	s
Tu	es	is	s
Il/Elle/On	e	it	-
Nous	ons	issons	ons
Vous	ez	issez	ez
Ils/Elles	ent	issent	ent

## 2. Opinions

Est-ce que tu aimes...?	<i>Do you like?</i>
J'adore	<i>I love</i>
J'aime beaucoup	<i>I really like</i>
J'aime	<i>I like</i>
Je n'aime pas	<i>I don't like</i>
Je déteste	<i>I hate</i>
Parce que	<i>because</i>
Car	<i>because/as</i>

### Fancy Opinions

Je pense que	<i>I think that</i>
Je crois que	<i>I believe that</i>
A mon avis	<i>In my opinion</i>

## 4. Describing things

Est-ce qu'il y a...?	<i>Is/are there...?</i>
Qu'est-ce qu'il y a...?	<i>What is/are there...?</i>
Dans mon/ma	<i>In my...</i>
Il y a	<i>There is/are</i>
Il n'y a pas de	<i>There aren't any</i>
C'est	<i>It's</i>
Ce n'est pas	<i>it's not</i>
Il/elles sont	<i>they are</i>
Il/elles sont	<i>they are</i>

Adjective examples	Masc Singular	Fem singular	Masc plural	Fem plural
green	vert	verte	verts	vertes
white	blanc	<b>blanche</b>	<b>blancs</b>	blanches

## 5. Pronouns

Je	<i>I</i>	On	<i>one/we</i>
Tu	<i>you (inf/pl)</i>	Nous	<i>we</i>
Il	<i>he</i>	Vous	<i>you (f/pl)</i>
Elle	<i>she</i>	Ils/elles	<i>they</i>

## Super Five Irregular Verbs:

There are verbs that don't follow this pattern.  
The 4 most important irregular verbs are on this sheet (ÊTRE, AVOIR, ALLER, and FAIRE).

## 7. Être – to be

je suis	<i>I am</i>
tu es	<i>You are (s)</i>
il/elle/on est	<i>He/she/one is</i>
nous sommes	<i>we are</i>
vous êtes	<i>you are (pl)</i>
ils/elles sont	<i>they are</i>

## 8. Avoir – to have

j'ai	<i>I have</i>
tu as	<i>You have (s)</i>
il/elle/on a	<i>He/she/one has</i>
nous avons	<i>we have</i>
vous avez	<i>you have (pl)</i>
ils/elles ont	<i>they have</i>

## 9. Aller – to go

je vais	<i>I am/going</i>
tu vas	<i>You go/are going (s)</i>
il/elle/on va	<i>He/she/one goes/are going</i>
nous allons	<i>we go/are going</i>
vous allez	<i>you go/are going (pl)</i>
ils/elles vont	<i>they go/are going</i>

## 10. FAIRE – TO DO/MAKE

je fais	<i>I do</i>
tu fais	<i>You do (s)</i>
il/elle/on fait	<i>He/she/one does</i>
nous faisons	<i>we do</i>
vous faites	<i>you do (pl)</i>
ils/elles font	<i>they do (m)</i>

## 11. Negatives

Ne... pas	<i>not</i>
Ne... jamais	<i>never</i>

**Put these around the verb:**

Je mange = I eat  
Je ne mange pas = I don't eat

## 7.2 People Around Me

### French Key Vocabulary

#### (1) Pronouns

<b>je</b>	I
<b>tu</b>	you (sing, inf)
<b>il</b>	he
<b>elle</b>	she
<b>nous</b>	we
<b>vous</b>	you (pl or formal)
<b>ils</b>	they (all boys/mix)
<b>elles</b>	they (all girls)

#### (2) Avoir – to have

Tu as ...?	Do you have...?
<b>J'ai</b>	I have
Tu <b>as</b>	you have (s)
Il/Elle <b>a</b>	he/she has
Nous <b>avons</b>	we have
Vous <b>avez</b>	you have (pl)
Ils/Elles <b>ont</b>	they have

#### (3) Etre – to be

Tu es ...?	Are you...?
Je <b>suis</b>	I am
Tu <b>es</b>	you are (s)
Il/Elle <b>est</b>	he/she is
Nous <b>sommes</b>	we are
Vous <b>êtes</b>	you are (pl)
Ils/Elles <b>sont</b>	they are

#### (4) My

**mon** (mon père = my dad)  
**ma** (ma mère = my mum)  
**mes** (mes parents = my parents)

	masc	fem	plural
<b>my</b>	mon	ma	mes
<b>your</b>	ton	ta	tes
<b>his/her</b>	son	sa	ses

#### (5) Opinions

**Que penses-tu de...? What do you think of...?**

J'adore	I love
J'aime bien	I really like
J'aime	I like
Je préfère	I prefer
Je préférerais	I would prefer
Je n'aime pas	I don't like
Je déteste	I hate
À mon avis	In my opinion
Je pense que	I think that
Je crois que	I believe that
Je trouve que	I find that
Selon moi	According to me
Personnellement	Personally

#### (6) Nationality

Je suis...	I am...
anglais(e)	English
gallois(e)	Welsh
écossais(e)	Scottish
irlandais(e)	Irish
français(e)	French
belge	Belgian
suisse	Swiss
allemand(e)	German
espagnol(e)	Spanish
somalien(ne)	Somalian
polonais(e)	Polish
américain(e)	American
bangladais(e)	Bangladeshi
pakistanaï(e)	Pakistani
hongrois(e)	Hungarian

#### (7) Adjective agreement

Remember adjectives have to agree with the noun.  
 Normally you would add an 'e' to make the adjective feminine but check out the following changes...

Il est paresseux – elle est paresseuse  
 Il est sportif – elle est sportive  
 Il est travailleur – elle est travailleuse  
 Il est gentil – elle est gentille  
 Il est mignon – elle est mignonne  
 Il est beau – elle est belle  
 Il est vieux – elle est vieille  
 Il est sympa – elle est sympa



### (8) Hair and Eyes

<b>J'ai...</b>	<b>I have...</b>
<b>J'avais...</b>	<b>I used to have...</b>
<b>Il/Elle a...</b>	<b>He/She has...</b>
<b>Il/Elle avait...</b>	<b>He/She used to have...</b>
les cheveux bruns	brown hair
les cheveux noirs	black hair
les cheveux roux	ginger/red hair
les cheveux châtâins	light brown hair
les cheveux blonds	blonde hair
les cheveux courts	short hair
les cheveux longs	long hair
les cheveux mi-longs	mid-length hair
les cheveux ondulés	wavy hair
les cheveux bouclés	curly hair
les cheveux raides	straight hair
les cheveux Afro	afro hair
les yeux bleus	blue eyes
les yeux marron	brown eyes
les yeux verts	green eyes
les yeux gris	grey eyes
les yeux noisette	hazel eyes
les yeux noirs	black eyes
<b>Je suis...</b>	<b>I am...</b>
<b>Il/Elle est...</b>	<b>He/She is...</b>
grand(e)	tall
petit(e)	short
gros(se)	fat
mince	thin
de taille moyenne	medium size
chauve	bald

### (9) Personality Adjectives

<b>Je suis...</b>	<b>I am...</b>
<b>Tu es...</b>	<b>You are...</b>
<b>Il/Elle est...</b>	<b>He/She is...</b>
gentil(le)	kind
agréable	pleasant
joyeux (euse)	happy
triste	sad
bavard(e)	chatty
timide	shy
bruyant	noisy
mignon(ne)	cute
joli(e)	pretty
beau/belle	beautiful
moche	ugly
amusant(e)	fun
ennuyeux (euse)	boring
fort(e)	strong
jeune	young
vieux / vieille	old
propre	clean
rapide	fast
riche	rich
sage	wise
travailleur (euse)	hardworking
paresseux(se)	lazy
casse-pieds	annoying
sérieux (euse)	serious
sévère	strict
impoli(e)	rude
gourmand(e)	greedy
sportif (ive)	sporty

### (10) Extra details

<b>Je porte</b>	<b>I wear</b>
<b>Il/Elle porte</b>	<b>He /She wears</b>
<b>J'ai</b>	<b>I have</b>
des lunettes	glasses
des lentilles	contact lenses
des piercings	piercings
un tatouage	a tattoo
un hijab/ un voile	a hijab
une cicatrice	a scar
une barbe	a beard
une moustache	a moustache
des taches de rousseur	freckles
<b>Je m'appelle</b>	<b>I am called</b>
<b>Il/Elle s'appelle</b>	<b>He/She is called</b>
<b>Ils/Elles s'appellent</b>	<b>They are called</b>

### (11) Connectives

<b>et</b>	and
<b>mais</b>	but
<b>parce que</b>	because
<b>sauf</b>	except
<b>cependant</b>	however

### (12) Intensifiers

très	very
assez	quite
un peu	a bit
trop	too
extrêmement	extremely

### (13) Comparisons

<b>plus - more</b>	Jean est plus intéressant que Paul
<b>moins - less</b>	Paul est moins intéressant que Jean

### (14) Superlative

<b>le /la plus - the most</b>	Jean est le plus intelligent
<b>le /la moins - the least</b>	Marie est la moins sympa



# Y7 Natural World Knowledge Organiser

## Content:

In this project you will be Exploring and understanding the Natural World. Looking at how our natural world is changing. Researching artists that produce art based on the natural world. Experimenting with patterns and textures found in our natural environment. Recording our findings in the Natural world.

**Outcome- Term 3:** Drawing, Artist Research, Ceramics, Acrylic Painting.

## ARTISTS



## Van Gogh

is one of the most popular of the Post-Impressionist painters today, although he was not widely appreciated during his lifetime.

He is known for his artwork “Starry Night” which depicts the view of his asylum room.

## Irina Redine

creates bright and colourful paintings from her studio in Queensland, Australia. Redine’s paints in acrylic and oil, she draws inspiration from places she visits, painting what she feels with her heart and sees through her eyes—the soul of the surroundings always coming to life in her artwork.

**Drawing-** A picture, sketch, or outline

**Mark-making-** Drawing

**Shading-** Darkening areas

**Stippling-** Using lots of fine dots to create shading.

**Scumbling-** Using the side of your pencil to create shading.

**Cross-hatching-** Parallel lines crossing each other.

**Blending-** Combining shading

**Line-** Drawing lines to form shapes

**Observation-** Drawing what you can see.

**Shape-**Form

**3 Dimensional-** An object that is not flat.

**Experiment-** Test out materials, scale, shape, colour.

**Symbolism-** Represents

**Analyse-** examine (something) in detail to explain and interpret it.

**Evaluate-** Assess

**Style-** Surrealism, Pop Art, Cubism, Art deco, Minimalism, Futurism

**Technique-** Skills/ Methods

**Perspective-** Angle/ viewpoint

## Assessment Points

- Pencil drawing of natural forms AO3.
- Experimentation with ink and wax resist, pattern, and collage AO2.

**Movement:** Consider from the options, what Art movement they belong to.



## Analysis

• All artist research pages should be annotated **Artwork-**

### • Artist name

- Describe the work-what does it look like? Use the formal elements i.e. colour, line etc.
- What techniques/materials were used?
- What is your opinion of the work? How is it relevant to your own idea?

### • Sentence starters

I like/dislike the way the artist has used...because

I think the colour scheme used is effective because...

I think the artist has been inspired by...because

### • Evaluation of Your Artwork-

What inspired you to create the piece?

What techniques did you use and why?

What does it mean to you?

How is it relevant to your idea?

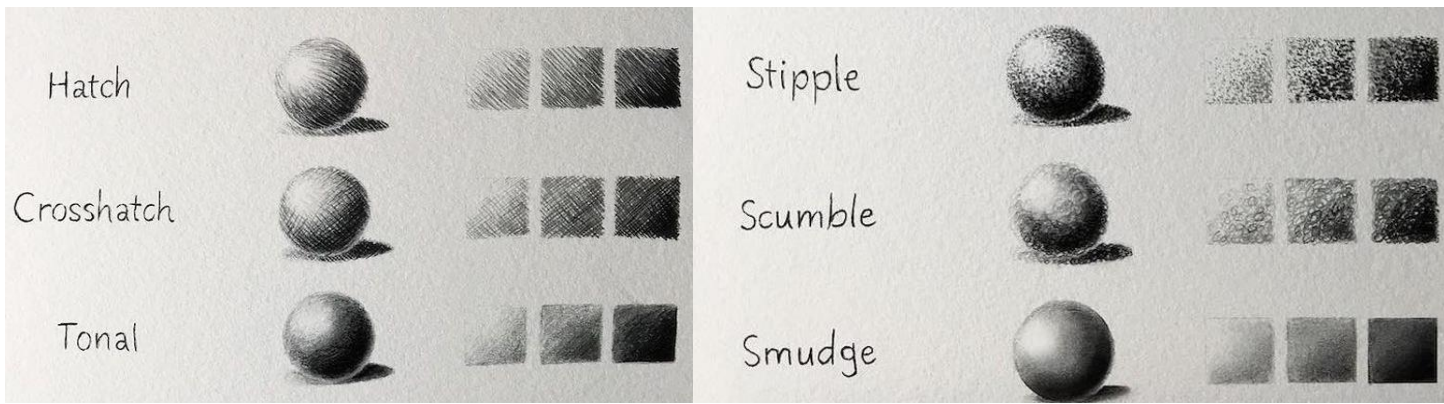
### • Sentence starters

The technique I have used is...

The skill/technique I found most difficult was...because...

I think my work is successful because...





**Mark Making-** Different marks can be made with a pen or pencil to create different textures. e.g. short, sharp lines could be used for spikes, little circles could be used for a rough surface, flecks or short curved lines could be used for fur.

**Concentrated Mark Making**

Concentrated markmaking means how close together or far apart you place your pen marks; this creates tone.

Highly concentrated marks can be used to indicate a dark area.

Less concentrated marks show a lighter area

You can use different types of marks as shown here

**How to Look**

**1. LOOK BEFORE YOU START!**  
Spend some time looking at your object – familiarise yourself with its general shape, texture and appearance.

**2. GET THE SHAPE RIGHT!**  
Draw the outline of your object first. Use small, light pencil marks to get a sketchy but accurate outline. If the basic outline is not right, then nothing else you add will be right.

**3. KEEP LOOKING!**  
For every second you spend looking at your piece of paper or drawing you should be spending at least 3 looking at your object. Keep looking back at your object to check your outline is the right shape and size.

**4. LOOK FOR THE DETAIL!**  
Once your basic shape is complete, you can start looking for interesting features. For example, is there an interesting texture you can record, does it stick out here, or dip down over there?

**Art Movement:** a period of time when popular art shares similar styles.

**Clay**

**Clay Process**

Clay is a material that is modelled when wet, then fired to make a ceramic object

Wet slabs of clay can be shaped and moulded into bowls, vases, cups, statues etc.

The modelled clay is then baked at a high temperature. This hardens the soft clay by removing any moisture to make a ceramic object.

Ensure you crosshatch both pots as this gives the slip something to grip too!

**Keywords & Definitions:**

**Wedging** – Wedging is used to prepare the clay. It is a process of dropping a square of wet clay down onto a table to remove any air bubbles. Air bubbles can cause clay to explode!

**Kiln** – A kiln is a big oven for ceramics. Clay goes into the kiln to be baked.

**Firing** – Firing is the name given to the process of baking the clay. 'to fire the clay'.

**Slip** – Slip is a simple mix of clay and water, it is used to join two sections of wet clay together by acting like glue!

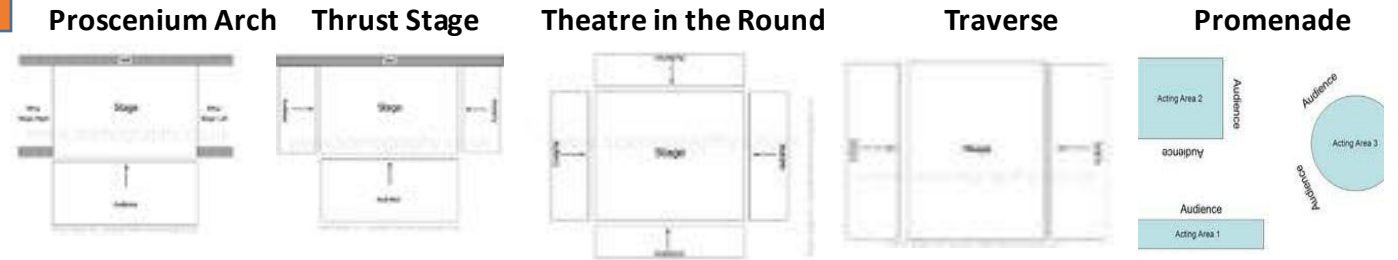
Light → Dark

**TONE!**

# Year 7: Script and Character

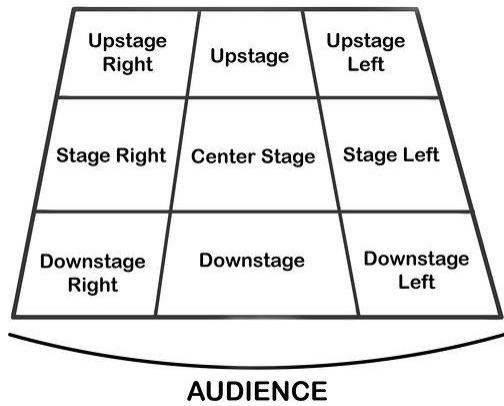
## How can we use **language** to communicate **character**?

### Stage Configurations



### Key Vocab (Techniques)

Freeze-frame	A scene frozen in time. Can also be called a tableaux or still image.
Step-out	A character steps out of the freeze-frame and tells the audience their thoughts whilst the other character remain frozen.
Narration	A narrator telling the audience what is happening in the scene or performance.
Mime	A performance without words. Using body language, facial expressions and gestures to reveal what is happening.
Stock characters	A stereotypical character expected in performance.
Split-stage	Two scenes happening on stage in different locations or times.
Stage configurations	Different staging layouts used for a performance.
Stage positioning	The different areas of the stage from the actor's point of view.



### Key Vocab (Skills)

Body Language	How a person used their body to communicate how they are feeling.
Gait	How narrow or wide a person's stance (legs and shoulders) is to show their level of confidence i.e. the more confident a person is the wider gait they tend to have).
Gesture	Hand or head movement to back up dialogue or to be used instead of dialogue e.g. thumbs up to say that something is good.
Mannerism	Idiosyncrasies and habits that are particular to us. We might fiddle with our hair or shift our weight from one foot to the other. It's important that you're able to remove any habits of your own that might interfere with characterisation.
Energy	The term 'energy' in drama is used to describe how an actor uses movement, gestures, gait and posture to show the type energy their character has.
Body tension	How relaxed or tensed an actor's muscles are.
Posture	How tall a person stands or sits e.g. hunching or standing tall with their head held high.
Eye contact & focus	The state in which two people are aware of looking into one another's eyes. Or where the eyes are focused.
Use of space	The way the actor moves around the performance space
Status	The importance of a character compared to the other characters on stage
Facial Expression	How a person uses the muscles in their face to show how they are feeling e.g. frowning to show that they are sad.
Volume	This is how loud or quiet a performer speaks. This can range from a Stage whisper to shouting really loud. The way in which an actor uses volumes helps show the audience what mood the character is in as well as what the situation is.
Pitch	How high or low
Pause	A moment of silence or stillness used for effect
Pace	Speed of delivering lines/dialogue
Diction	Diction is how clearly you speak.
Tone	This is how an actor speaks to show what mood their character is in e.g. Happy, sad, angry etc.



## Great Composers Key Terms

**Melody** The main tune of a piece of music

**Ostinato** A repeating pattern

**Accompaniment** The 'background' music that supports the Melody

**Motif** A short memorable melody

**Phrase** A section of a melody that sounds complete

**Melodic Shape** Whether a melody rises or falls

**Composer** Someone that writes music

**Score** A piece of music written with notations

**Notation** The system of lines and symbols for writing music

**Expression** Playing music with emotion

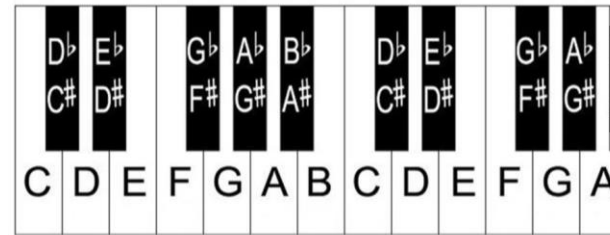
**Timbre** The different sounds that define a note

**Time Signature** how many beats are in each bar of music

## Y7 Music

### What Makes A Great Composer?

Note Pyramid			
Name	Symbol	Rest Symbol	Value of each
Semibreve			4
Minim			2
Crotchet			1
Quaver			1/2
Semiquaver			1/4



## Dynamics – The Volume of the music

ITALIAN	SIGN	ENGLISH
<i>Piano</i>	<i>p</i>	Soft
<i>Forte</i>	<i>f</i>	Loud
<i>Mezzo piano</i>	<i>mp</i>	Moderately Soft
<i>Mezzo forte</i>	<i>mf</i>	Moderately Loud
<i>Pianissimo</i>	<i>pp</i>	Very Soft
<i>Fortissimo</i>	<i>ff</i>	Very Loud

## Pitch – How high or low the sound is

**Treble Clef**

**Treble Clef Notes**

Notes on the lines are: E G B D F

Notes in the spaces are: F A C E

**Bass Clef**

**Bass Clef Notes**

Line Notes: G B D F A

Space Notes: A C E G

### STRINGS



### WOODWIND



### BRASS



### PERCUSSION



# Design Technology Year 8

## Banksy project



### **TARGET MARKET**

The Target market is the group of people you will aim your product at.

This enables the design to make better design decisions by focusing on who would buy it and what their needs are: Examples

Children (3-5yrs) – Bright colours, small to fit into their hands, safe smooth edges.....

Teenagers

The Elderly

Disabled



### Specification:

A Specification is a list of requirements, standards or things a product must include.

It should consider the:

Function – What it does

Aesthetics – What it looks like

Materials – Suitability for task

Safety – Not hurt the user

Customer – 'target market' needs



Every Specification begins : My product **MUST**...

*Example: Form*

My product **MUST** have a stencil **because** my market will like the unique design

*Example: Materials*

My product **MUST** be made of Pine **because** I found in my research that pine is a softwood that is easy to cut and work with

### EXAMPLES OF Materials

#### Man Made Boards:

- **MDF (Medium Density Fibreboard)** – made from pulping wood into tiny fibres, mixing them with glues and rolling the mix into sheets.
- **Plywood** – Made up of thin sheets of wood. The grain in each layer always runs at right angles to the previous layer for strength. There is always an odd number of layers.

#### Hardwoods:

- **Oak** - Slow growing tree. Has flat shapely leaves. Attractive grain. Oak is a very strong wood.
- **Beech** - Is tough and strong. It has small and straight grain. It is pale pink in colour. It is used often as chopping boards and table tops due to it's strength.

#### Softwoods:

- **Pine** - Fast growing tree. Has spiky leaves. Attractive grain. It produces pine cones.
- **Spruce** – Is a fast growing tree that produces a pale wood. Spruce is often used in furniture making.

#### Plastics:

Plastic are oil based and therefore not as sustainable as woods. However plastics are very versatile and can last a lot longer than woods.

- **High Impact Polystyrene (HIPS)** - Light material and yet strong. Softens at 90°C Available in a range of colours.
- Comes in a range of thicknesses.
- **Acrylic** - PMMA (Polymethylmethacrylate)- Hard wearing, Softens at 85-165°C (dependent on thickness)
- Is brittle, can snap easily. Available a range of colours that can also be transparent to clear like glass. Some colours can be florescent.

**Design Technology  
Year 8 Banksy box**

**What is a Analysis?**

Analysis means studying how well a product or material, does its job:  
 "Finding what a product does and how well it does."

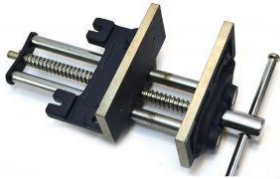
**TOOL  
TYPES**



Tenon Saw



Wooden Mallet



Bench Vice



Disc Sander



Drill Bits



Screwdriver



PVA Glue

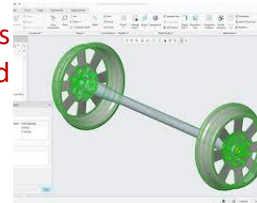
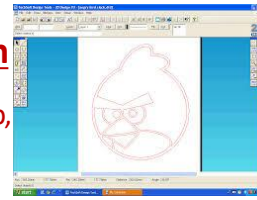


Wood screws

**What is CAD:**

**Computer Aided Design**

Is using a computer to develop, show or create a design. This can be 3D which means you can turn and get a realistic view from all sides. This means that the design can be changed and developed easily. These images can also be emailed and sent to manufactures, machines or clients.



**SURFACE FINISHING:**

Finishing is usually one of the last stages of making a project. It will usually involve sanding and applying a surface coating to protect your material and make it look better.

**Some examples:**

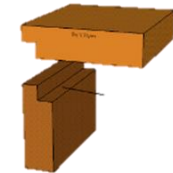
Paint, Varnish, Oil, Wax, Polish & Dip Coating.  
 Electroplating = coating one metal with another.



Butt Joint



Mortise + Tennon Joint



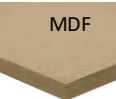
Rebate/Lap Joint

**Manufactured Boards**

Engineered boards are manmade materials usually made by mixing wood chips and glues to make wooden sheets.

**Examples:**

Medium Density Fibreboard (MDF)  
 Chipboard, Plywood and Hardboard



**Timbers / Woods:**

<i>Hardwoods:</i>	<i>Softwoods:</i>
Beech	Scots Pine
Oak	Cedar
Ash	Spruce



Beech  
Grows slowly—loses its leaves.



Pine  
Grows quickly

**Joining Materials Together:**

Glues, welding, rivets  
 Screws, bolts, nails

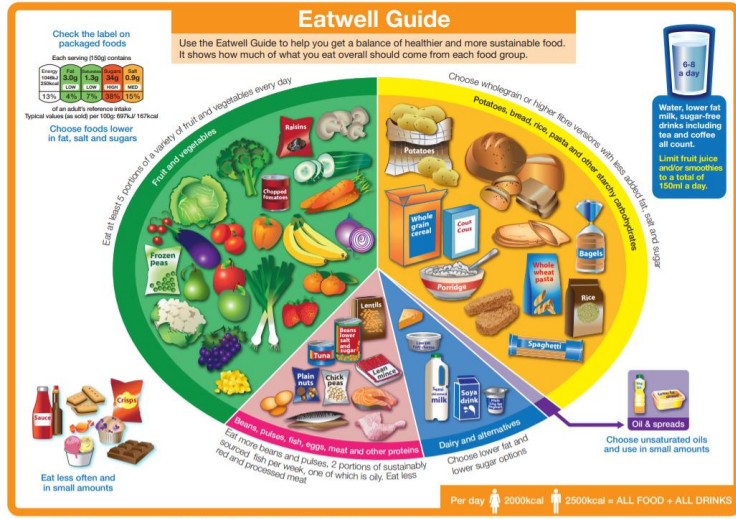
Wood joints can be either permanent or temporary depending on the type and if glue is used. Wood joints are stronger if the interlock with larger glue areas. Screws and nails can make them stronger.





# Food Technology

## Year 7

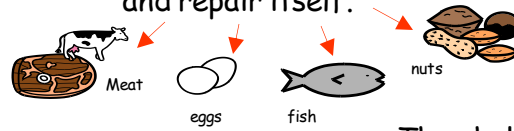


## Food Groups

**Carbohydrates** are in starchy and sugary foods.

**Carbohydrates** give you energy.

**Proteins** help your body grow and repair itself.



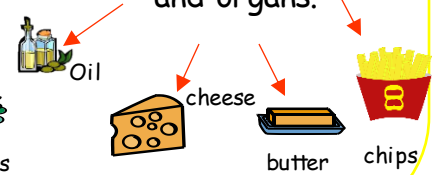
**Vitamins & Minerals** are found in fruit & vegetables



They help your bodies to work properly and external features e.g. skin, hair, nails and eyes



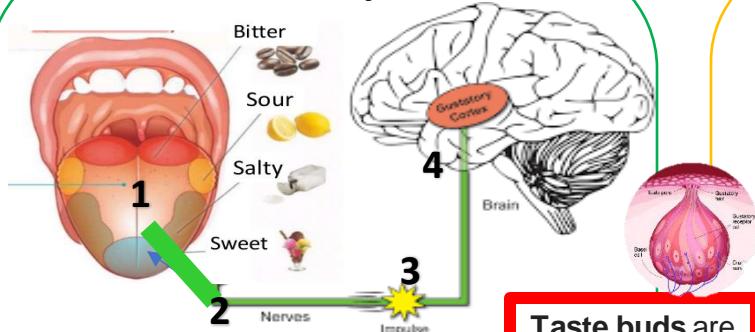
**Foods containing Dairy and alternatives Oils and Spreads** Used to store energy and insulate our bodies and organs.



## EQUIPMENT



## Sensory



**Taste buds** are the clusters of bulbous nerve endings on the tongue and in the lining of the mouth which provide the sense of taste.

### Sugar

- LEADS TO WEIGHT GAIN
- RAISES YOUR RISK FOR TYPE 2 DIABETES
- AFFECTS BRAIN HEALTH
- CONTRIBUTES TO POOR ORAL HEALTH
- CAUSES LIVER PROBLEMS
- GIVES YOU SLEEPLESS NIGHTS
- HARMS THE HEART
- CAUSES ANXIETY AND DEPRESSION

### Sugar swaps

Try sugar substitutes

Beat cravings with fat and protein

Look out for hidden sugars

Swap sugary drinks for fizzy water

# Food Technology

## Year 7

### What is a the 'Control Point'?

**Control Point** - A **step** in the process where **hazards** or risks are **likely to occur**.

## COOKING METHODS

Cooking Method	What is it?
<p><b>Grilling</b></p> <p>Often the top oven. The same as Barbequing.</p>	
<p><b>Baking</b></p> <p>In the oven mainly for cakes and doughs</p>	
<p><b>Roasting</b></p> <p>In the oven meats or veg with fat/oil added</p>	
<p><b>Frying</b></p> <p>On the hob in a pan with oil/fat</p>	

## Weighing and measuring:

tsp- Teaspoon

tbsp.- Tablespoon

ml- Millilitres

g- Grams

kg- Kilograms

oz- Ounce

lb-pounds

Measuring jug



Tablespoon  
Teaspoon



Measuring scales

### Measuring is important because:

When making food products we use a recipe, it is really important to weigh and measure ingredients accurately. This means that the product we make can be made again and again achieving the same taste, smell, **Hygiene: The 4 C's:**

**Cleaning** – surfaces, equipment and personal; to make sure bacteria is cleaned away

**Cooking** – To cook and make food more edible also killing bacteria.

**Chilling** – to keep food fresh stop it from perishing, stop bacteria from multiplying/growing.

**Cross contamination** – to stop foreign objects and different bacteria's crossing between ingredients/foods

## HACCP

**Hazard** - Anything that is likely to cause **harm** to the consumer

**Analysis** - Is when you look in **detail** at something

**Critical** - This means its very **serious**

**Control Point** - A **step** in the process where **hazards** or risks are **likely to occur**.

## Cutting skills:

### HANDLE GRIP

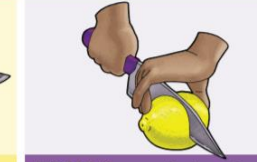


With all fingers and thumb opposite, grip handle firmly.

### CARRYING A KNIFE



Carry a knife with the blade pointing downward, close by your side.



'BRIDGE': Place your hand over top of knife holding food securely, use knife to saw food item.



'CLAW': Fingers tucked under with knife blade resting up against knuckles.

## PPE – Class standards – Personal hygiene

### Practical lessons:

**Blazers off and aprons on.**

**Hair tied bag.**

**Hands washed.** (don't touch your face or hair after washing)

Ingredients and equipment ready.

You must work in your allocated positions.

### At the end of a practical lesson

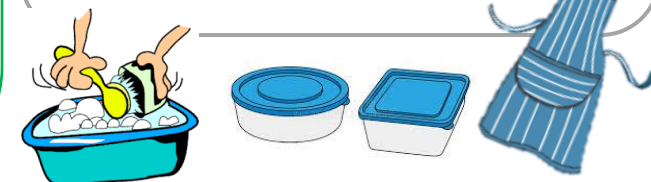
All equipment must be washed in warm soapy water **and dried**.

Food must be in a container and on the side.

All knives must be returned and in the rack.

Sinks must be clean and plugholes clear.

You must wait for inspection of your working area before leaving the class room.



# Broadoak Above and Beyond Challenges

Curriculum Area	How to develop your curiosity
English	Read a book of your choosing and write a book review.
Maths	Write a colourful set of instructions/flow diagram for solving questions/equations you have been working on this term.
Science	Research a scientist of the past create a fact-file of their background and achievements and impacts.
Humanities	Create a film reporting on a historical, geographical or religious event you have looked at.
MFL	Make a booklet for the year below you about how to be a successful linguist.
The Arts	Research and make a fact-file on an artist, chef or inventor of your choosing.
Performing (Music and Drama)	Watch live or online a performance of your choosing and write a review for a magazine, rating and evaluating it.
PE	Try a new sport and make a video diary about how you felt before and after.

**Due:** First week after Spring break, by 21st April 2023

**Where:** Give to your subject class teacher first lesson back.



**BROADOAK**  
**ACADEMY**