



**Year 9**

**Learning Cycle 1**

**Preparing for Assessment**

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

# Instructions on how to use your learning cycle booklet:



At Poltair we **SORT** it!

The aim is for all students to be fully prepared and ready for all assessments in all subjects.

To help them with this we have a whole school revision/study strategy – SORT.

There will be three learning cycles throughout Year 9. At the beginning of each learning cycle students will be issued with a booklet that details all knowledge they will be expected to know and recall in the assessments.

Each day, for home learning, students will be set a task of memorising a part of a knowledge organiser from two subjects.

<b>Summarise</b>	<b>Organise</b>	<b>Recall</b>	<b>Test</b>
Summarise and condense any class notes, revision guides and revision.	Organise your revision materials by topic/subtopic. Traffic light your PLC sheets to identify areas of weakness or gaps (Red/Amber) that need to be prioritised.	Use active recall and spaced repetition to memorise your knowledge organisers until you can recall the information eg. Look, cover, write or self-testing	Use low stakes online tests/quizzes and answer high stakes past paper/sample questions to check and apply knowledge and understanding
<b>Strategies</b>			
<ul style="list-style-type: none"> <li>• Cornell Notes</li> <li>• Flash cards</li> <li>• Mind mapping</li> <li>• Revision clocks</li> <li>• Dual coding</li> </ul>	<ul style="list-style-type: none"> <li>• How to use your PLC</li> <li>• How to schedule your home learning and stick to it!</li> </ul>	<ul style="list-style-type: none"> <li>• Look cover &amp; test</li> <li>• Leitner system</li> <li>• Blurt it</li> <li>• Transform it</li> </ul>	<ul style="list-style-type: none"> <li>• Low stakes</li> <li>• Self-quizzing</li> <li>• Quiz each other</li> <li>• Online quizzes</li> <li>• High stakes</li> <li>• Exam style questions</li> </ul>

# Instructions on how to use your learning cycle booklet:

Learning cycle 1 will focus on all the SORT strategies:



Summarise	Organise	Recall	Test
<ul style="list-style-type: none"><li>Cornell Notes</li><li>Flash cards</li><li>Mind mapping</li></ul>	<ul style="list-style-type: none"><li>How to use your PLC</li><li>How to schedule your home learning and stick to it!</li></ul>	<ul style="list-style-type: none"><li>Look cover &amp; test</li><li>Leitner system</li></ul>	<ul style="list-style-type: none"><li>Self-quizzing</li></ul>

## Using the PLC

- Review each key idea on the PLC
- In the **Organise** column write R, A or G depending on your understanding. **Red** = no understanding, **Amber** = Some understanding but needs work, **Green** – Secure understanding
- When you complete a **Summarise** activity for each key idea, tick the S column
- When you complete a **Recall** activity for each key idea, tick the R column
- When you **Test** by self-quizzing or complete an online-quiz for each key idea, tick the T column

Videos explaining all of the SORT strategies can be found on the Student SharePoint

## Home Learning timetable – when I am going to complete my home learning

	Mon A	Tue A	Wed A	Thu A	Fri A
Core activity	Reading	Complete Maths goal	Reading	Complete Maths goal	Reading
Subject 1	Geography	Science	Maths	English	Spanish
Subject 2	RE	Art	Food	History	Computing
	Mon B	Tue B	Wed B	Thu B	Fri B
Core activity	Reading	Complete Maths goal	Reading	Complete Maths goal	Complete Maths goal
Subject 1	Geography	Science	Maths	English	Spanish
Subject 2	Music	Drama	DT	History	

## My computer passwords

Platform	User Name	Password
School system		
Complete Maths		
Educake		
Memrise		





# Year 9 Learning Cycle 1 Personal Learning Check lists

## English

Key Ideas	S	O	R	T
Who was George Orwell?				
How can Animal Farm be read as an example of political satire?				
What is meant by the terms allegory and fable?				
What are the major plot points across the novella?				
How is the character of Napoleon presented?				
How is the character of Squealer presented?				
How is the character of Snowball presented?				
What is meant by rhetoric? Ethos? Logos? Pathos?				
Can you write critically about a Literature text?				
Can you write polemically in the style of Orwell?				

## Maths

Key Ideas	S	O	R	T
I can complete and interpret two-way tables				
I can complete and interpret frequency trees				
I can use rounding and error intervals				
I can estimate calculations				
I can use a calculator effectively				
I can express and number as a product of prime factors and use to find HCF and LCM				
I can solve real-life multiples problems				
I can calculate with fractions				
I understand ratio and can simplify and divide quantities into a ratio				
I can solve problems involving direct and indirect proportion				
I can compare two values to decide which is the best value				
I can interpret recipes and use to scale				
I can calculate values using exchange rates				

## Science

Key Ideas	S	O	R	T
I can identify the structure found in eukaryotic and prokaryotic cells				
I can describe the differences between animal and plant cells				
I can calculate magnification, actual size and image by rearranging formulae				
I can describe and explain how substances move in and out of cells				
I can describe the process of cell division by mitosis				
I can evaluate the use of stem cells in medicine				
I can describe the symptoms and treatment for a range of bacterial, viral, fungal and protist diseases				
I can explain how the body defends against disease				
I can explain how vaccinations work to prevent disease				
I can evaluate the process of drug development				

# Year 9 Learning Cycle 1 Personal Learning Check lists

## Geography

Key Ideas	S	O	R	T
I can locate the world's plate boundaries on a world map				
I can explain how plates move and the hazards that form at each type of plate boundary				
I can explain the hazards associated with volcanoes and earthquakes				
I can compare the responses to earthquakes				
I can explain the causes and effects of the Asian tsunami				
I can explain why people live in hazardous areas				
I can explain the role of Governments and charities to respond to tectonic disasters				
I can explain the impact of planning, prediction and protection				

## History

Key Ideas	S	O	R	T
Social class divide on the Titanic				
Propaganda of the First World War				
Pals Battalions				
Experiences of warfare in the trenches				
I know the causes of Shellshock, trenchfoot and trenchfever				
The causes of the Wall Street Crash				
The consequences of the Wall Street Crash				
The Great Depression				
The Jarrow March				

## Spanish

Key Ideas	S	O	R	T
I understand the rules for correct Spanish pronunciation				
I understand the meaning of all of the question words				
I know my non-negotiable verbs for the past, present and future tenses				
I can confidently introduce myself in Spanish				
I can confidently talk about the people in my family				
I can describe the relationships with my family				
I can describe the relationships with my friends				



# Year 9 Learning Cycle 1 Personal Learning Check lists

## Computing

Key Ideas	S	O	R	T
I can explain forms of attacks				
I can explain computer threats including malware, (eg Trojans, viruses, worms, spyware, ransom ware) phishing, shouldering				
I can explain the ways data could become compromised: Human error Social Engineering				
I can explain what abstraction is				
I can explain what decomposition is				
I can explain what algorithmic thinking is				
I can read Python and explain what a simple program is doing.				
I can write simple programs in Python which use input and output, using strings and numbers				
I can explain what sequence is				
I can explain how functions are used to simplify code				
I can explain what a variable is				
I can explain how variables are assigned values and how variables are checked for equivalence				

## Art

Key Ideas	S	O	R	T
I can understand and explain the meaning of the 7 observational drawing key words, tone, texture, shape, scale, line and composition.				
I can discuss and compare the different viewpoints of WW1.				
I can empathise with the people affected by WW1.				
I understand how to research and select information to develop ideas.				
I understand how to develop my ideas using the work of WW1 artists, poets and people to design and create a final outcome.				
I understand how to use my chosen materials with skill and flair.				

## DT

Key Ideas	S	O	R	T
I can use specifications to help develop work and explain why they are used in the design process. (ACCESS FM)				
I am able to describe why it is important to design products , considering sustainable use of materials and product lifespan (6Rs)				
I can describe the importance of ergonomics and identifying how we research the needs of intended users.				

# Year 9 Learning Cycle 1 Personal Learning Check lists

## Food

Key Ideas	S	O	R	T
I understand the importance of a healthy balanced diet				
I can list the roles and responsibilities of an environmental health officer.				
I can discuss a range of factors that affect consumer choice.				
I can explain how a quiche sets during the cooking process.				
I understand the importance of ensuring meat is cooked thoroughly to prevent food poisoning.				
I can explain how to ensure a hygienic and safe kitchen environment.				
I can describe how to reduce food waste by using left overs.				

## RE

Key Ideas	S	O	R	T
I can explain the difference between absolute poverty and relative poverty				
I can define the phrase "First World Problems"				
I can outline the story of the Fall in the Bible				
I can apply the story of the Fall to reasons for suffering				
I can explain why Jesus explains that when 'you help one of my brothers/sisters, you help me' in the New Testament				
I can outline the actions some Christians take to alleviate suffering				

# Year 9 Knowledge Organiser – Animal Farm

## Plot

**1a = Chapter 1** Mr Jones – a farmer - drunkenly stumbles to bed for the night, leaving the animals to gather in the barn to hear Old Major's speech. He blames their short and miserable lives on man, inciting rebellion. He teaches them a song: Beasts of England.

**1b = Chapter 2** Old Major dies in his sleep. The other animals prepare for rebellion, with the pigs (the cleverest animals) taking a lead role, teaching them animalism, which they do not all understand. Moses tells the animals about Sugarcandy Mountain - a beautiful place where animals go when they die. The Rebellion occurs and Jones is driven from the farm. The farm is renamed 'Animal Farm' and seven commandments are made. Some buckets of milk go missing.

**1c = Chapter 3** The animals work hard in the fields throughout the summer - Boxer hardest of all. The harvest is completed quickly. There is conflict between Snowball and Napoleon. Snowball spends time trying to educate the animals, with mixed success. He teaches them the maxim "Four legs good, two legs bad." Napoleon takes a group of puppies away from to 'educate'. When it is noted the pigs have been eating the apples and milk, Squealer persuades the animals that it is for the best.

**1d = Chapter 4** News of the rebellion spreads. Jones and the other farmers conduct an attack, attempting to seize the farm. Led by Snowball, the animals fight off the humans. Boxer and Snowball are awarded medals for their heroic efforts, but Boxer is distressed at the thought of killing a human – who is later found to be stunned rather than dead. The conflict is named 'The Battle of the Cowshed'.

**1e = Chapter 5** Mollie is tempted away from the farm. While the pigs' influence increases, Snowball and Napoleon grow more hostile towards one another. As Snowball announces new plans for a windmill, Napoleon orders his dogs to attack and chase Snowball from the farm. The animals grow anxious but Squealer placates them. Later, Napoleon announces that the windmill will be built.

**1f = Chapter 6** The animals work hard to build the windmill, despite their rations being cut. The pigs begin trading with humans, much to the shock of the other animals, and begin sleeping in beds. A change in the wording of the commandments is noticed. Again, Squealer persuades the animals that this is acceptable. A storm destroys the windmill but Napoleon blames this on Snowball.

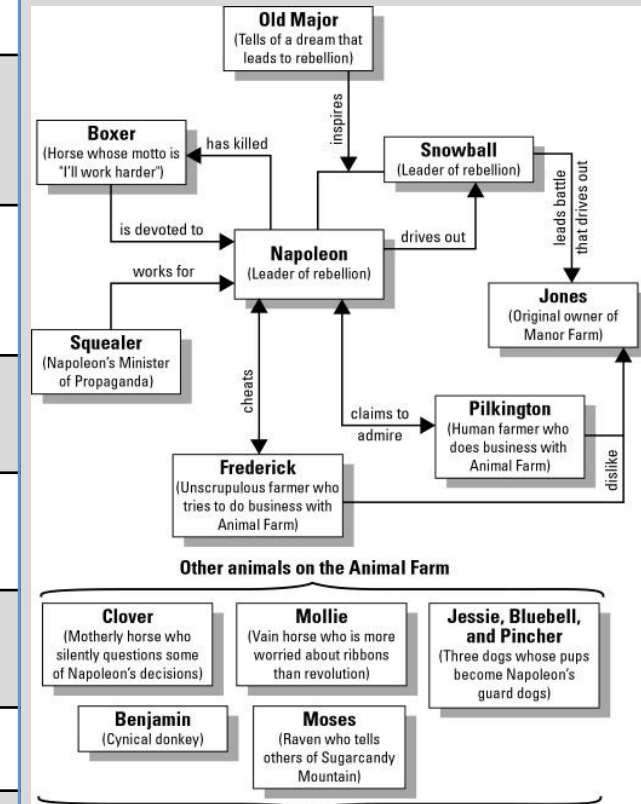
**1g = Chapter 7** The animals begin to starve. The hens protest after being told they must give their eggs to be sold. Napoleon cut their rations and nine die. Other animals are executed as 'traitors' at Napoleon's meeting. The singing of 'Beasts of England' is outlawed.

**1h = Chapter 8** As time passes, the animals work harder for less rations, and more of the commandments change, although the animals are persuaded by Squealer statistics that this is not the case. More trading with the humans take place but Frederick tries to trick Napoleon with forged banknotes. Frederick, with other men, attacks the farm and blows up the windmill. The animals fight back but several die and Boxer is injured. The pigs begin drinking alcohol.

**1i = Chapter 9** Napoleon orders a school to be built for the education of the ever-increasing young pigs on the farm. Boxer collapses while working and the pigs announce he will be taken to the hospital. It is revealed that the van that comes to collect Boxer is from the slaughterhouse, although Squealer tries to convince the animals this is not true. Boxer is never seen again.

**1j = Chapter 10** Years pass and no animal retires. Few remember the rebellion. The pigs begin to walk on two legs and the commandments are replaced with "All animals are equal but some are more equal than others.". The humans visit and praise the pigs for their efforts. The farm returns to the name 'Manor Farm'. Finally, while the pigs play cards and drink to excess with the humans one evening, the animals realise that they cannot differentiate between the humans and the pigs: they are now one and the same.

## 2. Character Map



# Year 9 Knowledge Organiser – Animal Farm

## Characters

**3a = Old Major** The old, prize-winning boar whose rousing, rhetorical speech about the tyranny of humans incites the rebellion. He dies soon after.

**3b = Napoleon** The pig who becomes the leader of Animal Farm after the rebellion. Based on Joseph Stalin, the leader of the communist Soviet Union, he is corrupt, sly, lazy and opportunistic. He uses Squealer and the dogs to oppress others.

**3c = Squealer** A skilled, persuasive orator. He is used to spread the pigs' propaganda and represents the propaganda machine of the communist Soviet Union. He twists the truth and uses false information to ensure the pigs retain their power and control over the other animals.

**3d = Snowball** One of the more powerful pigs, he challenges Napoleon for leadership of the farm after the rebellion and the two become increasingly hostile towards one another. He is an idealist but does exploit the animals for his own gain. He is expelled from the farm by Napoleon's vicious dogs and subsequently becomes a scapegoat for anything awful that happens.

**3e = Boxer** A gentle, hard-working cart-horse who dedicates his life to the pigs' cause, adopting the maxims "I will work harder," and "Napoleon is always right." His toil allows for the building of the windmills and is praised for his labour. However, his lack of intelligence blinds him to the real intentions of his leaders and he is sent to the slaughterhouse by them.

**3f = Benjamin** A cynical donkey with the view that life will always be difficult and painful. Benjamin isn't surprised when the pigs corrupt the revolution and turn Animal Farm into a totalitarian state, but he fails to stand up to them.

**3g = Clover** A gentle, motherly, and powerful carthorse. She is distressed by the increasing tyranny of the pigs but lacks the confidence or ability to defend the animals against them.

**3h = Mr Jones** The original owner of Manor Farm. Once a strict and fierce master, in the years before the story begins, Mr. Jones became drunk, careless, and ineffective. The other farmers show no sympathy for him when the farm is taken from him by the animals.

## Context

**4a = George Orwell (1903-1950)** A writer of fiction, poetry, essays and articles. Despite a privileged upbringing, Orwell went to live among the poor to become a writer, in order for him to experience poverty first hand. Orwell's writing conveys his support of democratic socialism, frequently challenging totalitarianism and social injustice. His most famous books are *Animal Farm* and *1984*. He was inspired to write *Animal Farm* when he saw a child whipping a horse, and has the following ideas: "If only such animals became aware of their strength we should have no power over them, and that men exploit animals in much the same way as the rich exploit the working class".




**4b = The Russian Revolution** *Animal Farm* is an allegory for the Russian Revolution of 1917 and the subsequent years. The Tsarist regime (led by a rich, autocratic ruler named Tsar Nicholas II and represented in the novel by Mr Jones) was overthrown and replaced by a communist state, led by Vladimir Lenin. Russia was re-named the Union of Soviet Socialist Republics, just as Manor Farm is renamed *Animal Farm*.

**4c = Vladimir Lenin** Lenin believed that the country should be run for the benefit of the working class. He was the leader of The Bolshevik Party who seized control after the 1917 revolution. He is represented by Old Major in the novel. He was inspired by Karl Marx's theory of Communism, which urges the "workers of the world" to unite against their economic oppressors, just as Animalism urges the animals to do so.

**4d = Joseph Stalin** A revolutionary who changed his name to Stalin, which means 'man of steel'. Following the death of Lenin in 1924, Stalin rose to power through manipulating and intimidating others, sidelining other potential leaders such as Victor Trotsky. Under Stalin, the Soviet Union became more autocratic and totalitarian: he oversaw mass repressions, hundreds of thousands of executions and ordered over 22 million of deaths. In the novel, Napoleon represents Stalin.

**4e = Victor Trotsky** A skilful rhetorical speaker and one of the cleverest men in the communist party. Snowball's plans for the windmill and programs reflect Trotsky's intellectual character and ideas about the best ways to transform Marx's theories into practice.



Authorial Intent	Vocabulary	Subject Vocabulary
George Orwell wrote this novel for a purpose and uses the story and characters to send a message to his readers...	<b>5a = socialism (noun)</b> The organisation of a country's economy allowing for workers to have a share in the organisations that earn money. Its goal is to spread wealth more evenly and treat workers more fairly.	<b>6a = allegory</b> A story that can be interpreted to reveal a hidden meaning, typically a moral or political one.
<b>4a = To criticise...</b> the development and corruption of Soviet communism under Stalin, which departed from the socialist ideals upon which the revolution was built, and allowed for those in charge to manipulate and oppress those less powerful.	<b>5b = communism (noun)</b> A way of organising a country in such a way that does not allow for private property or a class system. All goods are owned and made available to everyone as they need them.	<b>6b = fable</b> A short story, typically with animals as characters, conveying a moral.
<b>4b = To highlight...</b> the plight of the working classes in the communist Soviet Union and how their oppression led to suffering and death.	<b>5c = oppression (noun)</b> Extended cruel or unfair treatment of people by those in power.	<b>6c = moral</b> A lesson that can be learnt from a story or experience.
<b>4c = To convey...</b> the injustice of a hierarchical class system and how class divisions lead to misery for those at the bottom of the hierarchy.	<b>5d = corrupt (adjective)</b> Acting in a way that is dishonest or harmful, for personal gain.	<b>6d = satire</b> The use of irony, sarcasm or ridicule in revealing someone's flaws or mistakes
<b>4d = To warn...</b> of the dangers of manipulation of propaganda and false information, especially when presented to those who lack the necessary education to interpret information critically.	<b>5e = rebellion (noun)</b> The act of violent action by a group of people trying to overthrow those in power.	<b>6e = symbolism</b> The use of characters, events or ideas to represent something broader
	<b>5f = glorify (verb)</b> To describe or represent something as admirable or worthy of praise, especially if it is not	<b>6f = rhetoric</b> The art of effective persuasive writing or speaking
	<b>5g = propaganda (noun)</b> Information, especially misleading in nature, used to convince people to follow a particular cause or point of view	<b>6g = pathos</b> A rhetorical method designed to appeal to emotion, especially to create feelings of sadness or sympathy
	<b>5h = dictator (noun)</b> A ruler with total power over their country.	<b>6h = ethos</b> A rhetorical method designed to gain the trust of the reader by presenting the writer as experienced or knowledgeable.
	<b>5i = totalitarian (adjective)</b> A government and system in which those in power have complete control.	<b>6i = logos</b> A rhetorical method designed to present ideas as logical and unquestionable
	<b>5j = exploit (verb)</b> To use someone unfairly for your own gain.	

Key terms	Definition
<b>Probability</b>	The extent to which an event is likely to occur, measured by the ratio of the favourable cases to the whole number of cases possible
<b>Independent</b>	Independent events are not affected by previous events.
<b>Dependent</b>	Dependent events are those which depend upon what happened before. These events are affected by the outcomes that had already occurred previously.
<b>Frequency</b>	Frequency refers to the number of times an event or a value occurs. A frequency table is a table that lists items and shows the number of times the items occur.
<b>Significant figure</b>	The number of digits that are meaningful: they have an accuracy matching our measurements, or are simply all we need.
<b>Estimation</b>	Estimation means having a rough calculation of the value, number, quantity, or extent of something.
<b>Error interval</b>	Error intervals are the limits of accuracy when a number has been rounded or truncated.
<b>Factor</b>	A number or algebraic expression that divides another number or expression evenly—i.e., with no remainder. For example, 3 and 6 are factors of 12 because $12 \div 3 = 4$ exactly and $12 \div 6 = 2$ exactly.
<b>Multiple</b>	A multiple in math are the numbers you get when you multiply a certain number by an integer. For example, multiples of 5 are: 10, 15, 20, 25, 30...etc.
<b>Prime</b>	A whole number above 1 that can not be made by multiplying other whole numbers. They only have two factors, 1 and itself
<b>LCM</b>	The smallest positive number that is a multiple of two or more numbers
<b>HCF</b>	The highest common factor (HCF) is found by finding all common factors of two numbers and selecting the largest one.
<b>Ratio</b>	A ratio shows the relative sizes of two or more values.
<b>Proportion</b>	Proportion is a part, share, or number considered in comparative relation to a whole. When two ratios are equivalent, they are in proportion.
<b>Direct proportion</b>	If two sets of given numbers are increasing or decreasing in the same ratio, then the ratios are said to be directly proportional to each other
<b>Indirect proportion</b>	Indirect or inverse proportion is a relation between two quantities where an increase in one leads to a decrease in the other, and vice-versa
<b>Function</b>	A function relates an input to an output.

# Year 9 Maths Knowledge Organiser Learning Cycle 1

2

## Two Way Tables/Frequency Trees

e.g. 1 The two-way table shows some information about whether students in a class are left or right-handed. Complete the table.

	Left	Right	Total
Male	8		43
Female		17	
Total			80

Look for any row or column with only one missing piece of information

	Left	Right	Total
Male	8	35	43
Female		17	37
Total			80

1 Which numbers can be calculated?

$$80 - 43 = 37$$

and

$$43 - 8 = 35$$

2 Which numbers can now be calculated?

$$37 - 17 = 20$$

and

$$35 + 17 = 52$$

	Left	Right	Total
Male	8	35	43
Female	20	17	37
Total		52	80

3 Calculate the final number

$$8 + 20 = 28$$

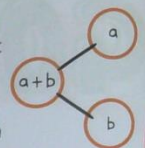
or

$$80 - 52 = 28$$

Do both ways to check

	Left	Right	Total
Male	8	35	43
Female	20	17	37
Total	28	52	80

There is one **GOLDEN** rule: Each "node" (circle) is equal to the sum of the other circles that branch off from it.



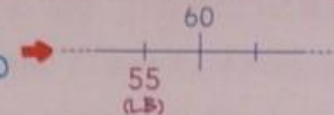
3

## Error Intervals and Estimate

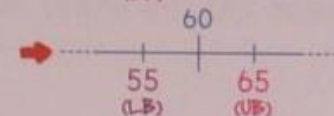
An **error interval** is the range of values a number could have taken before being rounded (or truncated). To find the error interval, we need to identify the upper and lower bounds of the number.

e.g. 1 A number is rounded to 60 to the nearest 10 Degree of accuracy  
Complete the error interval:  $\text{---} \leq \text{number} < \text{---}$

1 Find the smallest value that rounds up to 60 to the nearest 10



2 Find the smallest value that rounds up to 70 (the next value to the nearest 10)



$$\text{---} 55 \leq \text{number} < \text{---} 65 \text{---}$$

55 rounds to 60 so we use  $\leq$

65 does not round to 60 so we use  $<$

REMEMBER:

A decimal point separates the whole number part from the fractional part

i.e. 4.276  
 First significant figure  
 First decimal place  
 Second decimal place

We can estimate the answer to a calculation by using approximate values. When we are working with exact answers, we use the equals symbol (=) but when we are estimating, we use a symbol that means "is approximately equal to":

$\approx$  (a wavy equals sign!)



Estimations do not use exact values ... round the numbers to make the calculations easier



# Year 9 Maths Knowledge Organiser Learning Cycle 1

## 4 Number

e.g. 2 Buses to Worcester leave a bus station every 30 minutes.

Buses to Hereford leave the same bus station every 40 minutes.

A bus to Worcester and a bus to Hereford both leave the bus station at 09:20

At what time will a bus to Worcester and a bus to Hereford next leave the bus station at the same time?

- List some of the multiples of 30 and 40
- Find the LCM

Multiples of 30 → 30, 60, 90, 120, 150, ...  
 Multiples of 40 → 40, 80, 120, 160, ...

120 mins = 2 hours, so 09:20 + 2 hours

The next time both buses leave at the same time is 11:20 am

e.g. 1 Calculate  $2\frac{1}{5} + \frac{4}{15}$ . Write your answer as a mixed number.

$$= \frac{11}{5} + \frac{4}{15}$$

1 Convert  $2\frac{1}{5}$  to an improper fraction  
 $2\frac{1}{5} \rightarrow \frac{11}{5}$      $2 \times 5 + 1 = 11$

$$= \frac{33}{15} + \frac{4}{15}$$

2 Remember the denominators must be the same when adding or subtracting fractions

$$= \frac{37}{15}$$

3 Check if the question asks to simplify, and/or write the answer as a mixed number

$$= 2\frac{7}{15}$$

15 divides into 37 two whole times with a remainder of 7

e.g. 2  $3\frac{1}{6} - 2\frac{2}{9}$

$$= \frac{19}{6} - \frac{20}{9}$$

14 × 3 = 57  
6 × 3 = 18

$$= \frac{57}{18} - \frac{40}{18}$$

20 × 2 = 40  
1 × 2 = 18

$$= \frac{17}{18}$$

Look out for the lowest common multiple (LCM) of the denominators to make the calculations easier - the LCM of 6 and 9 is 18

Improper fractions are also useful for multiplying ...

e.g. 3 Calculate  $1\frac{3}{8} \times 2\frac{1}{5}$ . Write your answer as a mixed number.

$$= \frac{11}{8} \times \frac{11}{5}$$

- Convert the mixed numbers to improper fractions
- Multiply both the numerators and the denominators
- Write the answer as a mixed number

$$= \frac{121}{40} = 3\frac{1}{40}$$

... and dividing mixed numbers.

e.g. 4 Work out  $3\frac{1}{2} \div 1\frac{5}{8}$

Write your answer as a mixed number in its simplest form.

$$\frac{7}{2} \div \frac{13}{8}$$

- Convert the mixed numbers to improper fractions
- Dividing can be done by converting the calculation to one that involves multiplication
- Write the answer as a mixed number
- Give your answer in its simplest form

$$= \frac{7}{2} \times \frac{8}{13}$$

$$= \frac{56}{26} = 2\frac{4}{26}$$

$$2\frac{4}{26} = 2\frac{2}{13}$$

## 6 Further reading, websites

[www.completemaths.com](http://www.completemaths.com)

[www.justmaths.com](http://www.justmaths.com)

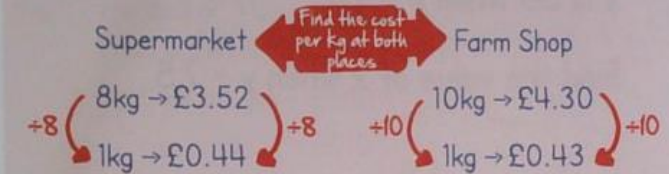
[www.corbettmaths.com](http://www.corbettmaths.com)

[www.mathsisfun.com](http://www.mathsisfun.com)

## 5 Proportion

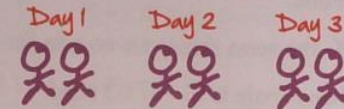
A best value problem will ask to compare two (or more) options to see which is the best value for money.

e.g. 1 A supermarket sells 8 kg of potatoes for £3.52  
 A farm shop sells 10 kg of the same potatoes for £4.30  
 Which is the better value for money option?



The farm shop is better value as 43p is less than 44p per kg

e.g. 1 a) If it takes 2 people 3 days to paint a fence, how long will it take 4 people to paint the fence?



2 people → 3 days  
 This means it would take 1 person 6 days to paint the fence

Total number of 'work days' =  $2 \times 3 = 6$

So if we have 4 people, we still have 6 work days

$$6 \div 4 = 1.5$$

It will take 4 people 1.5 days to paint the fence

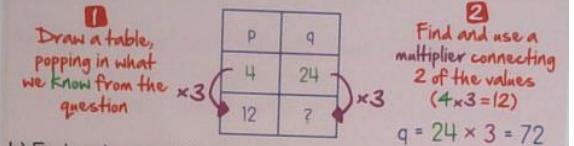
b) What assumption have you made in part a) and if your assumption is incorrect, how would this affect your answer?

The people work at the same rate as each other.  
 If they work at a faster rate, it will take less time. If they work at a slower rate it will take more time.

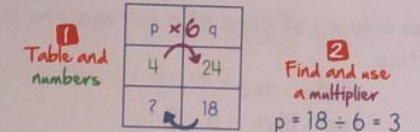
e.g. 2 q is directly proportional to p.

q is 24 when p = 4

a) Find q when p = 12



b) Find p when q = 18



From p to q is  $\times 6$ , so q to p must be  $\div 6$



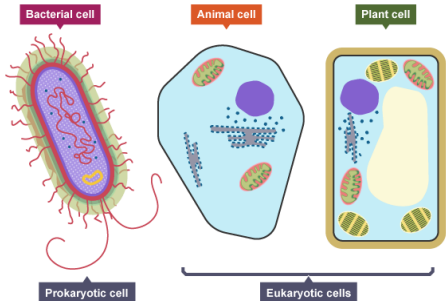
Key terms	Definition
<b>Cell</b>	The smallest living unit. All living organisms are made of cells.
<b>Eukaryote</b>	An organism consisting of a cell or cells in which the DNA is contained within a nucleus (animals and plants).
<b>Prokaryote</b>	An organism in which the DNA is not contained within a nucleus (bacteria).
<b>Magnification</b>	The action of enlarging an image of an object.
<b>Organelle</b>	A subcellular (smaller than a cell) structure found within a cell.
<b>Diffusion</b>	The movement of particles from a high concentration to a low concentration.
<b>Active Transport</b>	The movement of particles from a low to high concentration, moving against the concentration gradient. This process requires energy.
<b>Osmosis</b>	The movement of water particles from an area of high concentration to low concentration gradient.
<b>Mitosis</b>	Cell division that produces two genetically identical daughter cells.
<b>Stem Cell</b>	An undifferentiated cell that can become any other type of cell.
<b>Vaccination</b>	Treatment with a dead or inactive form of the pathogen to prevent disease.
<b>Pathogen</b>	A microorganism that causes disease.
<b>Phagocytosis</b>	The engulfing of a pathogen by a phagocyte (white blood cell).
<b>Lymphocyte</b>	A white blood cell that is able to produce antibodies.
<b>Phagocyte</b>	A white blood cell that is able to engulf pathogens (phagocytosis).
<b>Placebo</b>	A fake or dummy drug.
<b>Double Blind Trial</b>	Part of a clinical trial where neither the doctor or the patient know whether they are receiving the active drug or a placebo

# Year 9 Science Knowledge Organiser Learning Cycle 1

2

## Cell Biology

Organelle	Function	Animal	Plant	Bacteria
Nucleus	Contains genetic information that controls the functions of the cell.	Y	Y	
Cell membrane	Controls what enters and leaves the cell.	Y	Y	Y
Cytoplasm	Where many cell activities and chemical reactions within the cell occur.	Y	Y	Y
Mitochondria	Provides energy from aerobic respiration.	Y	Y	
Ribosome	Synthesises (makes) proteins.	Y	Y	Y
Chloroplast	Where photosynthesis occurs.		Y	
Permanent vacuole	Used to store water and other chemicals as cell sap.		Y	
Cell wall	Strengthens and supports the cell. (Made of cellulose in plants.)		Y	Y
DNA loop	A loop of DNA, not enclosed within a nucleus.			Y
Plasmid	A small circle of DNA, may contain genes associated with antibiotic resistance.			Y



**Magnification =**  
 $\frac{\text{size of image}}{\text{size of real object}}$

<https://www.bbc.co.uk/bitesize/guides/zwnp7p3/revision/5>

Embryonic stem cell

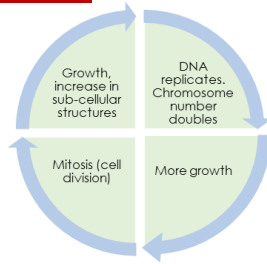
Can divide into most types of cell. Therapeutic cloning – embryonic stem cells produced with same genes as patient. No rejection.

Adult stem cell

Can divide into a limited number of cells e.g. bone marrow stem cells can form various blood cells.

3

## Cell Cycle



Number of sub-cellular structures (e.g. ribosomes and mitochondria) increase.  
 Number of chromosomes double.  
 One set of chromosomes is pulled to each end of the cell.  
 The nucleus divides.  
 Cytoplasm and cell membranes divide to form two identical cells

4

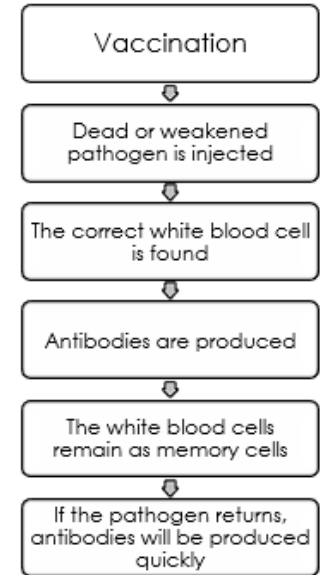
## Cell transport

Diffusion	Spreading out of the particles (gas/ solution) resulting in a net movement from an area of higher concentration to an area of lower concentration.	Oxygen and carbon dioxide in gas exchange (leaves and alveoli). Urea from cells into the blood plasma for excretion in the kidney.
Osmosis	The diffusion of water from a dilute solution to a concentrated solution through a partially permeable membrane.	Movement of water into and out of cells.
Active Transport	The movement of substances from a more dilute solution to a more concentrated solution (against a concentration gradient). Requires energy from respiration.	Absorption of mineral ions (low concentration) from soil into plant roots. Absorption of sugar molecules from lower concentrations in the gut into the blood which has a higher sugar concentration.

5

## Pathogens and Vaccination

	Pathogen	How it is spread	Prevention/ Control
<b>Measles</b>	Virus	Droplets from sneezes and coughs	Vaccination of children
<b>HIV</b>	Virus	Sexual contact, needle exchange	Antiretroviral drugs when infected
<b>Salmonella</b>	Bacteria	Infected food	Vaccination of poultry (chickens).
<b>Gonorrhoea</b>	Bacteria	Sexual contact	Controlled by antibiotics. Spread prevented by condoms.
<b>Malaria</b>	Protist	By a vector – mosquito	Preventing mosquitos from breeding, using mosquito nets.



6

## Further reading, websites

Types of microscope:

<https://www.bbc.co.uk/bitesize/guides/z84jtv4/revision/5>

Defence against disease:

<https://www.bbc.co.uk/bitesize/guides/zs6a2p3/revision/4>

Drug development:

<https://www.bbc.co.uk/bitesize/guides/z8fkmsg/revision/10>

Cell cycle:

<https://www.bbc.co.uk/bitesize/guides/z2kmk2p/revision/2>

# Year 9 Geography Knowledge Organiser Learning Cycle 1

1

## The structure of the Earth

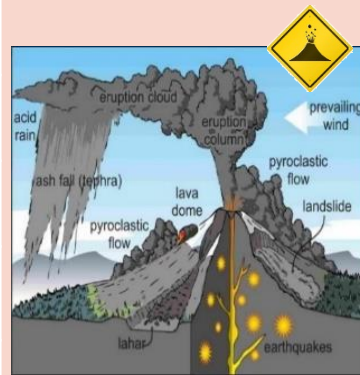


<b>The Crust</b>	Varies in thickness (5-10km) beneath the ocean. Made up of several large plates.
<b>The Mantle</b>	Widest layer (2900km thick). The heat and pressure means the rock is in a liquid state that is in a state of convection.
<b>The Inner and outer Core</b>	Hottest section (5000 degrees). Mostly made of iron and nickel and is 4x denser than the crust. Inner section is solid whereas outer layer is liquid.

2

## Volcanic Hazards

<b>Ash cloud</b>	Small pieces of pulverised rock and glass which are thrown into the atmosphere.
<b>Gas</b>	Sulphur dioxide, water vapour and carbon dioxide come out of the volcano.
<b>Lahar</b>	A volcanic mudflow which usually runs down a valley side on the volcano.
<b>Pyroclastic flow</b>	A fast moving current of super-heated gas and ash (1000°C). They travel at 450mph.
<b>Volcanic bomb</b>	A thick (viscous) lava fragment that is ejected from the volcano.

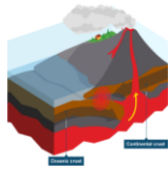


2

## Types of Plate Margins

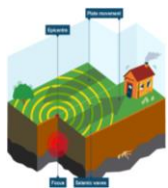
### Destructive Plate Margin

When the denser plate subducts beneath the other, friction causes it to **melt and become molten magma**. The magma forces its way up to the surface to form a volcano. This margin is also responsible for **devastating earthquakes**.



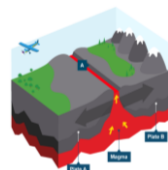
### Constructive Plate Margin

Here two plates are **moving apart** causing new magma to reach the surface through the gap. Volcanoes formed along this crack cause a submarine mountain range such as those in the **Mid Atlantic Ridge**.



### Conservative Plate Margin

A conservative plate boundary occurs where plates **slide past each other** in opposite directions, or in the same direction but at different speeds. This is responsible for earthquakes such as the ones happening along the San Andreas Fault, USA.



3

## What is a Natural Hazard

A natural hazard is a natural process which could cause death, injury or disruption to humans, property and possessions.

<b>Geological Hazard</b>	<b>Meteorological Hazard</b>
These are hazards caused by land and tectonic processes.	These are hazards caused by weather and climate.

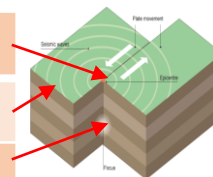
## Causes of Earthquakes

Earthquakes are caused when two plates become **locked** causing **friction** to build up. From this **stress**, the **pressure** will eventually be released, triggering the plates to move into a new position. This movement causes energy in the form of **seismic waves**, to travel from the **focus** towards the **epicentre**. As a result, the crust vibrates triggering an earthquake.

The point directly above the focus, where the seismic waves reach first, is called the **EPICENTRE**.

**SEISMIC WAVES** (energy waves) travel out from the focus.

The point at which pressure is released is called the **FOCUS**.



4

## LIC -CS: Haiti Earthquake 2010



### Causes

On a conservative plate margin, involving the Caribbean & North American plates. The **magnitude 7.0 earthquake** was only **15 miles** from the capital Port au Prince. With a very **shallow focus of 13km deep**.

### Effects

**230,000 people died** and 3 million affected. Many **emotionally affected**. **250,000 homes** collapsed or were damaged. **Millions homeless**. Rubble blocked roads and shut down ports.

### Management

Individuals tried to recover people. Many countries **responded with appeals or rescue teams**. Heavily relied on **international aid**, e.g. **\$330 million** from the EU. **98% of rubble** remained after **6 months**.

5

## Managing Volcanic Eruptions

Warning signs	Monitoring techniques
Small earthquakes are caused as magma rises up.	Seismometers are used to detect earthquakes.
Temperatures around the volcano rise as activity increases.	Thermal imaging and satellite cameras can be used to detect heat around a volcano.
When a volcano is close to erupting it starts to release gases.	Gas samples may be taken and chemical sensors used to measure sulphur levels.
Preparation	
Creating an exclusion zone around the volcano.	Being ready and able to evacuate residents.
Having an emergency supply of basic provisions, such as food	Trained emergency services and a good communication system.

6

## Earthquake Management

### PREDICTING

#### Methods include:

- Satellite surveying (tracks changes in the earth's surface)
- Laser reflector (surveys movement across fault lines)
- Radon gas sensor (radon gas is released when plates move so this finds that)
- Seismometer
- Water table level (water levels fluctuate before an earthquake).
- Scientists also use seismic records to predict when the next event will occur.



### PROTECTION

**You can't stop earthquakes**, so earthquake-prone regions follow these three methods to reduce potential damage:

- Building earthquake-resistant buildings
- Raising public awareness
- Improving earthquake prediction

# Year 9 History Knowledge Organiser Learning Cycle 1

## 1 Key terms and definitions

Key Word	Definition
Social Class	Amount of wealth a person has
Trench	Where the soldiers fought
Shellshock	Mental collapse
Wall Street Crash	Banking collapse which caused mass unemployment
Jarrow March	March to London to protest about lack of jobs

## 2 Titanic



**63% of first class passengers survived, 42% of second class, and just 24% of third class.** Put another way, passengers traveling in first class were 40% more likely to survive and passengers in second class were 16% more likely to survive than those traveling in first class.



## 3 First World War

The dangers of trench warfare were plentiful. **Enemy attacks on trenches or advancing soldiers could come from artillery shells, mortars, grenades, underground mines, poison gas, machine guns and sniper fire.**



## 4 Wall Street Crash

The Wall Street Crash was **the collapse of the Stock Market in the U.S. after panic selling of stocks and shares by both professional and small investors.** On October 29, 1929, also known as Black Tuesday, over \$10 to \$15 billion was lost when stocks completely collapsed.

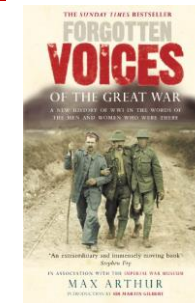


## 5 Great Depression

The effects on the industrial areas of Britain were immediate and devastating, as demand for British products collapsed. By the end of 1930, unemployment had more than doubled from 1 million to **2.5 million** (20% of the workforce), and exports had fallen in value by 50%.



## 6 Further reading, websites



These and more available in Mr Sporle's room

# Year 9 Spanish Knowledge Organiser Learning Cycle 1

## 1 Know your phonics!

When speaking in Spanish - accurate pronunciation is essential. Practise these sounds and remember the rules never change!

a - e - i - o - u  
ca - ce - ci - co - cu  
ca - que - qui - co - cu  
ga - ge - gi - go - gu  
ga - que - qui - go - gu  
rr - ll - v - h - j - ñ - z

Pronouncing words in Spanish:

<https://www.bbc.co.uk/bitesize/topics/zhy27nb/articles/zk78382>

## 2 Know your question words!

To answer any question, it's essential you know your key question words well. These are all on Memrise as well for you to practise.

qué = what	cuánto = how much
cuál = which	cuántos = how many
dónde = where	cómo = how
adónde = where to	cómo es = what like
de dónde = where from	
cuándo = when	
quién = who	
con quién = with whom	
por qué = why	

## 3 Vocab learning techniques

Your Knowledge Organiser includes all the topic specific vocabulary for this unit, this is also accessible on Memrise.

To effectively learn vocabulary, practise the suggestions below. What technique works best for you?

1. Look-cover-write-check This video demonstrates what to do: [https://youtu.be/YFEzhGnJP\\_Q](https://youtu.be/YFEzhGnJP_Q)
2. Use the Parallel text. This video demonstrates what to do: <https://youtu.be/WcvVeNM6dWc>
3. Make Flashcards: <https://youtu.be/-SL9037YMKA>

## 4 Conversational Spanish

Can you answer these questions? Use your KO and Parallel text for support:

- ¿Cuántas personas hay en tu familia?
- ¿Cómo es tu madre/padre/hermano etc.?
- ¿Puedes describir tu familia/ madre/ padre etc.?
- ¿Cuándo es tu cumpleaños?
- ¿Te llevas bien con tu familia/madre/ padre etc.?
- ¿Cómo eras de joven?

## 5 High frequency vocab

This vocab is commonly used all the time in Spain, the more of this you know, the better you will be able to communicate in any situation:

me llevo bien= I get on well	
puede ser = he/she can be	
más...que = more...than	
menos...que = less...than	
siempre = always	dado que
nunca = never	puesto que
a veces = sometimes	ya que

} because

## 6 Further reading, websites

Pronouncing words in Spanish:

<https://www.bbc.co.uk/bitesize/topics/zhy27nb/articles/zk78382>

Talking about family and pets in Spanish:

<https://www.bbc.co.uk/bitesize/topics/zfgt6v4/articles/zfrxyxc>

Describing people using tener and ser:

<https://www.bbc.co.uk/bitesize/topics/zfgt6v4/articles/zkmwqwx>

How to use adjectives and make comparisons:

<https://www.bbc.co.uk/bitesize/topics/zg9mhyc/articles/zjdrvk7>

How to form the present tense:

<https://www.bbc.co.uk/bitesize/topics/zg9mhyc/articles/z63n7nb>

Getting ahead- GCSE Spanish on identity:

<https://www.bbc.co.uk/bitesize/guides/znq2382/revision/1>





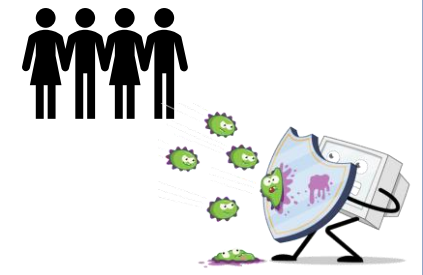
## 1 Key Words

**Malware** (malicious software) is software that is designed to gain access to your computer with malicious intent.

Virus	Viruses are a malicious form of self-replicating software. Once on a computer or network, a virus will replicate itself by maliciously modifying other computer programs and inserting code.
Worms	replicate themselves but do not attach themselves to files as a virus does. Instead, worms spread through the network and use the system's resources.
Trojan	A trojan is a piece of software that appears to perform a useful function (such as a game) but it also performs malicious actions.
Spyware	Spyware is unwanted software that monitors and gathers information on a person and how they use their computer.
Ransomware	This is a form of virus, as it is self-replicating. Ransomware locks a computer, encrypts files, and therefore prevents the user from being able to access the data

## 2 There are lots of technical ways to try and keep data safe and secure from attacks:

**Human error** creates the largest risk of the data being compromised.  
**Social engineering** is a set of methods used by cybercriminals to deceive individuals into handing over information that they can use for fraudulent purposes



## 3

### Name generator attacks

These are attacks in which the victim is asked in an app or a social media post to combine a few pieces of information or complete a short quiz to produce a name.

Attackers do this to find out key pieces of information that can help them to answer the security questions that protect people's accounts.

### Blagging

**Blagging** (also known as **pretexting**) is an attack in which the perpetrator invents a scenario in order to convince the victim to give them data or money.

This attack often requires the attacker to maintain a conversation with the victim until they are persuaded to give up whatever the attacker asked for.

### Shouldering

**Shouldering** (also known as **shoulder surfing**) is an attack designed to steal a victim's password or other sensitive data.

It involves the attacker watching the victim while they provide sensitive information, for example, over their shoulder. This type of attack might be familiar; it is often used to find out someone's PIN at a cash machine.

### Phishing

A **phishing attack** is an attack in which the victim receives an email disguised to look as if it has come from a reputable source, in order to trick them into giving up valuable data.

The email usually provides a link to another website where the information can be inputted.

Sending similar messages by SMS is known as **smishing**

## 1 Key Words

<b>Sequence</b>	In programming, statements are executed one after another. Sequence is the order in which the statements are executed.
<b>Function</b>	A section of code that, when programming, can be called by another part of the program with the purpose of returning one single value
<b>Data type</b>	In computer programming, data is divided up and organised according to type, eg numbers, characters and Boolean.

An **algorithm** is a set of **precise** instructions, expressed in some sort of **language** (e.g. textual, visual).  
**Understanding** the language is necessary in order to **execute** the instructions.  
 Executing these instructions is meant to solve a **problem**.

A **program** is a set of precise instructions, expressed in a **programming language**.  
**Translating** the programming language is necessary for a machine to be able to **execute** the instructions.

Use == to check if something is the same (equivalent)  
 Use = to change a variable to a new value (assignment)

## 2 Sequence

**A variable** is a named memory address that holds a value. The value held in a variable can change

```

print("Year of birth?")
birth_year = input()
age = 2020 - birth_year
print("You are", age, "years old")
```

**print** displays the words in "..." on the screen

**input()** waits for the user to type something

**Operators** can be used to change data, eg 2020 - the age you entered

## 3 Functions

```

def calc_area(h,w):
    area_out = h * w
    return area_out

height_in = int(input("Enter height: "))
width_in = int(input("Enter width:"))
print("The area is ", calc_area(height_in,width_in))
```

This function multiplies two inputs and returns the value

The function is used later in the code



# Year 9 Art Knowledge Organiser Learning Cycle 1 - SPEAKING TRUTH TO POWER

1

Key Terms	Definitions.
Western Front	An area of northern France and Belgium with the most fighting during the First Worlds War.
Tommy	Nickname given to the British Soldiers.
Artillery	Heavy Guns
Home Front	The activities and lives of the people left at home.
Front Line	The land nearest the enemy where the fighting takes place.
Trench	Soldiers dig down into the earth from between a few centimetres and 6' to provide protection from the enemy artillery.
Shell Hole	When a shell (bomb) falls onto the earth it causes an explosion which throws earth into the air.
Munitions	Factories where ammunition, guns, shells, tanks and bombs were made by women.



Paul Nash



CWR Nevinson



2

## What do I need to know?

Art can be a form of therapy, promoting us to reflect on the meaning of life. What happens when we stand in front of a work of art? How might it affect us? What can we learn about ourselves by contemplating it? Art has sometimes been used by political powers to create propaganda. Art can be a way to speak truth to power.

3

## What will I learn?

You will learn to look, understand and empathise with the soldiers, parents, children, brothers, sisters, women and workers on both sides of the war. You will research, think and develop an outcome that explores the impact of the Great war.

4

## Useful Websites.

- <https://www.iwm.org.uk/visits/iwm-1>
- <https://www.tate.org.uk/art/artists/christopher-richard-wynne-nevinson-1697>
- <https://www.tate.org.uk/art/artists/paul-nash-1690>
- <https://www.tate.org.uk/whats-on/tate-britain/exhibition/aftermath/nine-ways-artists-responded-first-world-war>



# Year 9 Design Technology Knowledge Organiser Learning Cycle 1

1

## Tools and equipment

Coping saw- used for cutting materials into precise shapes, because it has a thin blade it can cut curves.

Tenon Saw- Used for cutting a straight deep surface or timber strips to length.

Try Square- Used for marking out 90 degrees for cutting shoulders or as a datum line.

Scroll saw- (Hegner) Can be used to cut curves and detailed components. Can be very accurate. Needs to be used with goggles.

Bench hook- used to hold the workpiece so that you can push against it. Hooks over edge of bench.

Disc sander, used to bring material to size and to flatten rough end grain.

Milling machine- used for cutting slots and pockets out of materials. The machine cuts using the X, Y and Z axis



2

## Design Process- Investigating target market

When we design products it is incredibly important to meet the needs of the user/ customer.

One way of starting is to collect examples of products that they already use and would want to own. It can also be useful to investigate brands and campaigns that they think are important.

It is important to have an actual person to talk to so that they can help you review the design proposals.

Asking them a focused questions is an important task.

How often do you cook with your children?	Weekly	Monthly	Rarely
Do you think healthy eating is important?	Yes	No	Not sure
Do your children enjoy cooking?	Yes	No	Not sure
Are you worried about cooking with kids?	Yes	No	Sometimes
Do you let your kids use sharp equipment?	Yes	No	Sometimes
Are your children able to work safely?	Yes	No	Sometimes
Are your kids able to work independently?	Yes	No	Sometimes
Are your children organised cooks?	Yes	No	Rarely
Is your cooking space child friendly?	Yes	No	Not Very
Do the kids have their own cooking gear?	Yes	No	Some

3

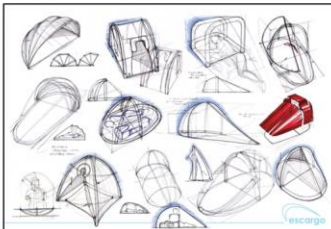
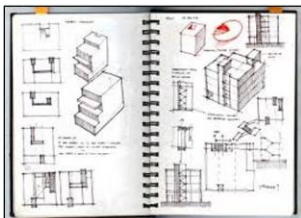
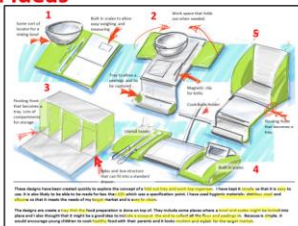
## Design Process- Generate design Ideas

A really exciting stage of the design process is when you create the first ideas for your product.

You need to come up with a **wide range** of different versions of your design solution....

These should try out different solutions, materials, mechanisms, colours.

Make sure you **show the intended user your design ideas** so that they can help you select the most effective ones.



## Target market/ intended user



I have done some investigation about healthy cooking for families.

I found a mum who has three kids and I was able to ask her opinion about what she thought was most important about cooking with children. She told me that it was important to keep the kids safe and also organised. She is nervous about them cooking particularly with sharp equipment and making a mess

Her daughter Lottie really wanted to cook more often and she liked the idea of something like a tool box for equipment.

I did some research using the internet and I found out how important it is for young people to learn to cook using proper ingredients because it can help them all the way through their lives.

I think I am going to produce some sort of kitchen equipment organiser for children.



"I love cooking with the kids but it always makes me nervous when they are working with sharp equipment. They also make a complete mess of the area. I would love some equipment to help them stay organised and to help them cook healthy food." Lotties Mum

"I want to cook more but mum doesn't let me too often. She tells me I am too messy. I want to have something like a tool box for my cooking stuff." Lottie Agost

Typical cooking equipment used :  
Mixing bowl, spoons, scales, rolling pins, chopping boards, butter knives, wooden spoons, whisk, baking tins, cookie cutters



2

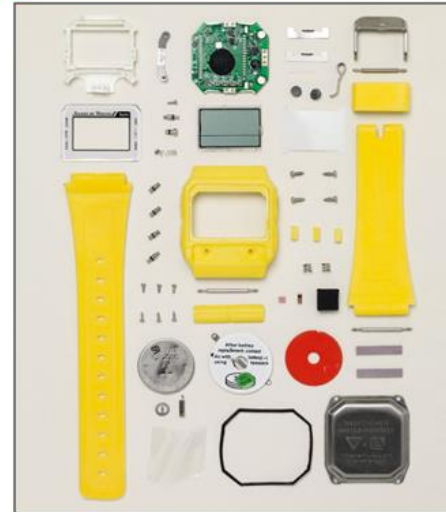
## Design Process- Analyse existing products

It is always a good idea to look at products and systems that are already in existence.

It gives you a chance to see what works well and how the product has been put assembled or manufactured.

It can also be useful to be look at smaller parts of products or systems. For example parts for a circuit or mechanisms that perform specific tasks.

If you look at how products are assembled you can use similar or improved methods.



We use **ACCESS FM** to help us write a specification - a design - and to help us **analyse and describe** an idea

- A** is for **Aesthetics**
- C** is for **Cost**
- C** is for **Customer**
- E** is for **Environment**
- S** is for **Size**
- S** is for **Safety**
- F** is for **Function**
- M** is for **Material**

### Existing products- possible concepts

I have looked at a range of products that I think would be suitable for the brief of helping create a healthy lifestyle because I have decided to concentrate on the kitchen and looking at ways of making it safer for children to cook with parents.

My target market like modern and smart products so I have looked at highly polished metal (stainless steel) with comfortable soft but brightly coloured polymers for other components.

**Next step.** I will do some research with parents and children to find out what they think might help them to cook healthy food together. I will then look in more detail at existing products.

### Existing Products

**Brush:** This product's material is mainly composed of plastic i.e. the body structure and the bristles. The brush is one of the main things people use to clean poop off their bike tyres. It has the same function of the product that I'm making, but not the product I'm thinking of. This product does the job manually but lots of disadvantages and as well as lots of advantages.

**Advantages:**

- Gets rid of the poop.
- Some are disposable.

**Disadvantages:**

- It doesn't keep the tyre steady for efficient use.
- It is not disposable then the brush would carry germs and bacteria and stinks.

**Stick:** This is a very common product, you can almost find it anywhere. It's almost 100% wood and can be in any size and shape. This is not a man made product.

**Advantages:**

- It's produced by trees. People use this as a last resort and very disposable. This also has disadvantages and advantages.

**Disadvantage:**

- Gets rid of it.

**Advantage:**

- Another substitute for cleaning it.
- Can be found anywhere.

**Gloves:** The gloves is another substitute for cleaning bike tyres. It helps you prevent touching the poop while cleaning the tyre. This product's material property is all plastic rubber but some has different types in it. This product has disadvantages and advantages, but this product is normally paired with either a brush or a hose.

**Advantages:**

- Protects the hands
- Keeps you hygienic
- Disposable

**Disadvantages:**

- Needs a pair to clean the poop of i.e. a brush

**Grass:** This is an organic product produced from the ground. This can be found everywhere, in the park, beside the street walls, in your garden, etc. This product's property is 100% organic and the height is about 5-13 centimetres. This product has its advantages and disadvantages.

**Advantages:**

- Can be found anywhere

**Disadvantages:**

- Needs a large area to thoroughly clean the poop.
- Doesn't get rid of it completely

**Water Hose:** This product's body structure are mainly plastic and tough rubber. The hose bit is the tough rubber and the thing that's controlling the water flow and the water power is made out of plastic but some are made of metal for more durability and toughness. This product does the same job and also but has advantages and disadvantages as well.

**Advantages:**

- Gets rid of the smell.
- No physical contact.
- And gets rid of it.

**Disadvantages:**

- Hard to control.
- Not very efficient.
- Not very suitable

4

## Design Process- physical modelmaking

They are better than drawings sometimes because you get a chance to really explore the design in 3D- to see or find out:

- How parts fit together,
- How mechanisms work
- If the products are comfortable
- Sizes of parts that might be hard to work out in your head.

Models are made according to the function they need to perform.

- Sketch models made of card- these are often used for layout and size.
- Handling models to test ergonomics and fit .
- Mechanism models to test how components will fit and function together. (mechanical advantage)
- Appearance models to see how the finished product might look ( not always functioning).
- Packaging models might be made from card and board.



5

## The 6 Rs

The 6 Rs of sustainability is a tool widely used to help designers reduce the impact of their products on the environment can be used as a checklist for each product that is designed.

- Reduce** — How can the amount of materials and components used in the product be reduced?
- Rethink** — How can the design of the product be changed so that it is less harmful to the environment?
- Refuse** — Should the product be produced if it is not sustainably designed?
- Recycle** — Is the product made using recycled materials?
- Reuse** — Could the product be used in a different way once its current use has expired?
- Repair** — Is the product easy to repair?

## Key words and definitions

- Dimension: The size and measurements of objects
- Marking out: The methods of adding lines and profiles to show where cutting and shaping needs to happen.
- Sustainability: How to create materials and energy in a way that has minimal impact on the environment.

# Year 9 Food Knowledge Organiser Learning Cycle 1

1	<b>Key Terms</b>	<b>Definition</b>
	Environmental Health Officer (EHO)	Person responsible for ensuring legislation is implemented including Food Safety Act 1990
	Legislation	a law or a set of laws that have been passed by Parliament.

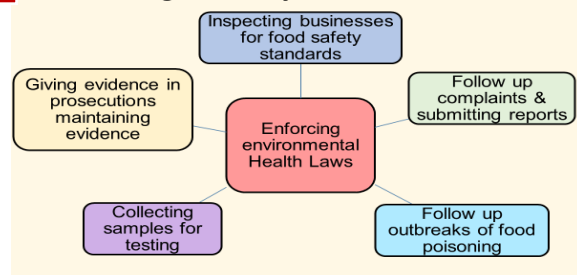
- 5 **Influences on consumer choice**
- Cost
  - Availability
  - Seasonality
  - Preferences – likes/dislikes

**Medical and health reasons:**  
**High blood pressure, diabetes type 2, coronary heart disease, depression, obesity, mobility issues**

**Ethical Diets**  
 Some people avoid meat due to environmental issues or health risks. Some people avoid beef due to concerns over BSE. Some avoid chicken and turkey due to the bird flu issues. Some people avoid fish due to the overfishing. Or prawns because this fishing is very energy expensive and wasteful. Producing unnecessary greenhouse gases. Some people just don't like the thought of harming animals..

**Types of Vegetarian:**  
**Vegetarians:** Do not eat meat or fish.  
**Lacto-vegetarians:** Do not eat the flesh of any animal but they will eat eggs, milk, cheese, honey etc.  
**Vegans:** Do not eat any animal products (including honey).  
**Pescatarians:** Do not eat chicken or red meat but do eat fish.

1 **EHO roles in the Hospitality and Catering industry**



**Allergies and intolerances**  
 Some people may develop an allergy or intolerance to food. An allergy requires medical intervention and can be life threatening. **Symptoms can occur anywhere from a few minutes after exposure to a few hours later, and they may include some of the following:**  
 Swelling of the tongue, mouth or face, Difficulty breathing, Low blood pressure, Vomiting, Diarrhea, Hives, Itchy rash.  
 An intolerance refers to irritation to the digestive system leading to constipation, bloated, diarrhea.  
**The 8 most common food allergies include:**  
 Cow's milk, Eggs, Tree Nuts, Peanuts, Shellfish, Wheat, Soy and Fish.

5 **Religious Diets**



**Muslim Diet:** Do not eat pork. Only eat Halal meat (which is killed in the same way as Kosher). Muslims also avoid alcohol.  
**Jewish Diet (Judaism):** Do not eat shellfish or pork. They do not eat dairy and meat in the same meal (this is because they do not eat mother and child together – so you cannot have chicken and egg together or milk and beef). They only eat Kosher meats (where the blood is drained from the body through a slit in the throat before the meat is soaked or salted). Kosher houses should have different sinks for dairy and meat along with different plates, cutlery and utensils: this is taken very seriously within the Jewish religion.  
**Hindu Diet (Hinduism):** Do not eat beef or any beef product – this is because the cow is a sacred animal and is treated as such, this includes the use of leather for clothes and furniture. Milk is permitted as no animal is killed during the collection. Often vegetarian, which comes from the principle of Ahimsa (not harming). Most Hindus don't drink alcohol.

3 **Eatwell Guide**

**Coeliac Disease**  
 This is intolerance to gluten which is found in wheat, rye and barley.

**Lactose Intolerance**  
 Can't digest lactose (because they don't produce the lactase enzyme).

Useful Website:  
<https://www.foodafactoflife.org.uk/>  
<https://www.bbc.co.uk/bitesize/guides/z8rqw6f/revision/4>

2,4,6	Dish	Skills
	Roasted vegetable stack	Knife skills- bridge hold and claw grip
	Mini Quiche	Rubbing-in-method, adaptation, setting egg filling
	Apple tart	Rough-Puff pastry, knife skills, glaze

## 1 Key terms and definitions

**Philosophy:** the study of the basic ideas about knowledge, right and wrong, reasoning, and the value of things

**The Old Testament:** The parts of the Bible created before the birth of Jesus

**The New Testament:** The parts of the Bible created after the birth of Jesus

**Absolute morality:** It is either right or wrong – no grey area.

**Relative morality:** It depends on the situation, it might be right, it might not be right.



## 2 The Story of the Fall

The story from the Bible which tells the story of Adam and Eve disobeying God and being removed from paradise. This story has been used by Christian thinkers to explain the idea of original sin- that Humans are born wanting to do the wrong things and need saving. Many thinkers also highlight it as being an excuse for some outdated attitudes towards women, as Eve was the human who did wrong first.



## 4 What is evil?

**Evil** is a word used to describe all that is bad, sinful and wicked in the world. Evil is the cause of great suffering and there are different types of evil:

- **Moral evil** describes the behaviours of human beings that cause suffering, such as murder, lying and stealing.
- **Natural evil** describes the things that cause suffering that humans have no control over, such as illnesses, tsunamis and hurricanes

## 3 Christian Aid

Christian Aid is the official relief and development agency of 41 Christian (Protestant, Catholic and Orthodox) churches in the UK and Ireland and works to support sustainable development eradicate poverty, support civil society and provide disaster relief in South America, the Caribbean, Africa and Asia.

Their work is inspired by the actions that Jesus encourages Christians to take. Jesus said:  
"Truly I tell you, whatever you did for one of the least of these brothers and sisters of mine, you did for me."  
Matthew 25:31-46

## 5 Further reading, websites

[Why do people suffer? – KS3 Religious Studies – BBC Bitesize - BBC Bitesize](#)

[Homepage | The Salvation Army](#)

[www.christianaid.org.uk](http://www.christianaid.org.uk)