

Knowledge Organiser Booklet

Year 8 Spring Half Term 1

8

**Ignorance is the curse
of God; knowledge is
the wing wherewith we
fly to heaven.**




William Shakespeare


Name: _____ Teaching groups: _____

Contents

- Home learning timetable
- Instructions on how to use a knowledge organiser
- English
- Maths
- Science
- Humanities
- Land and Environment
- Art
- Music
- ICT



Education
Endowment
Foundation



Research carried out by the Education Endowment Foundation proved that: Homework has a positive impact on average of + 5 months, particularly with pupils in secondary schools.




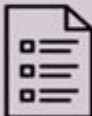














Home learning timetable

The table below details which days each subject will set home learning on each week. Students will have one week to complete home learning tasks for each subject.

	Monday	Tuesday	Wednesday	Thursday	Friday
All students	English Reading +		Maths	Science	
8N	Art		Music Land & Environment		Humanities
8E	Humanities	Land & Environment Art		Music	
8W	Humanities	Art	Music		Land & Environment

These knowledge organisers have been created by your teachers to support your learning both in class and for home learning. They are also a valuable revision tool for you to use independently when preparing for assessments. It is important that you make good use of your knowledge organisers by learning how to use them in different ways.

How to use a knowledge organiser – step by step guide

	Look, Cover, Write, Check	Definitions of Key Words	Flash Cards	Self Quizzing	Mind Maps	Paired Retrieval
Step 1	<p>Look at and study a specific area of your KO.</p> 	<p>Write down the key words and definitions.</p> 	<p>Use your KO to condense and write down key facts or information onto flash cards.</p> 	<p>Use your KO to create a mini quiz. Write down your questions using your KO.</p> 	<p>Create a mind map with all the information you can remember from your KO.</p> 	<p>Ask a friend or family member to have the KO or flash cards in their hands.</p> 
Step 2	<p>Cover or flip the KO over and write down everything you can remember.</p> 	<p>Try not to use your KO to help you.</p> 	<p>Add pictures to help support. Then self-quiz using the flash cards. You could write questions on one side, and answers on the other!</p> 	<p>Answer the questions and remember to use full sentences.</p> 	<p>Check your KO to see if there are any mistakes on your mind map.</p> 	<p>They can test you by asking you questions on different sections of your KO.</p> 
Step 3	<p>Check what you have written down. Correct any mistakes in green pen and add anything you have missed. Repeat.</p> 	<p>Use your green pen to check your work.</p> 	<p>Ask a friend or family member to quiz you on the knowledge.</p> 	<p>Ask a friend or family member to quiz you using the questions.</p> 	<p>Try to make connections, linking the information together.</p> 	<p>Write down your answers,</p> 



3.1 – KEY THEMES

Key themes

Conflict / Violence

Physical conflict such as the street fighting and the deaths of Mercutio and Tybalt. Conflict can also be viewed with the inner conflict of Romeo with his thoughts of love at the start; the emotional conflict of the lovers, torn between their love and their loyalty to their families.

Family

Importance of family name. Seen with Tybalt and his desire to maintain the family honour. Capulet's hurry to marry Juliet to Paris after Tybalt's death to secure the family lineage.

Parents/ children relationships

Parental love can be seen at the start where Lord Montague is concerned about Romeo's isolation, in Lord Capulet's attitude to Paris' marriage proposal in Act 1, and how it is contrasted in Act 3 with threatening to disown Juliet. The Nurse and Friar Lawrence adopting roles as confidantes to Romeo and Juliet.

Fate

From the servant who cannot read the names on the invitation list for the Capulet party, to the late delivery of Friar Lawrence's letter to Romeo. Romeo and Juliet both belittle the role of fate but many of the events are a direct result of Romeo's impulsive nature.

3.2 – KEY QUOTATIONS

ROMEO:

'O brawling love, O loving hate
O anything, of nothing first
create...

Heavy lightness...serious
vanity... feather of lead...'

JULIET:

'My only love sprung from
my only hate'

ROMEO:

'If I profane with my
unworthiest hand

This holy shrine, the gentle sin
is this'

ROMEO:

'Then I defy you stars!'

JULIET:

'For saints have hands,
that pilgrims' hands do
touch

And palm to palm is holy
palmer's kiss'

ROMEO:

'It seems she hangs upon the
cheek of night

As a rich jewel in an Ethiop's ear'

JULIET:

'O Romeo, Romeo, wherefore
art thou Romeo?'

ROMEO:

'O, she doth teach the torches
to burn bright!'

JULIET:

'Beautiful tyrant, fiend
angelical, Dove-feathered
raven'

MERCUTIO:

'A plague o' both your houses!
They have made worms' meat
of me'

ROMEO:

'Deny thy father and refuse thy
name'

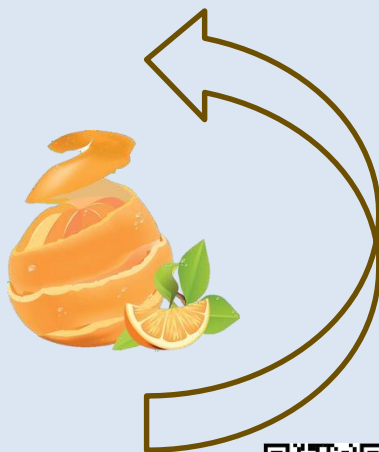
ROMEO:

'My life is my foe's debt'



3.3 – CRITICAL (ESSAY) WRITING PARAGRAPH STRUCTURES

Point
Evidence
Explain the effects of the language on the reader
Link to context



Useful Sentence Starters

Point	Evidence	Explain	Link
The writer uses...	Using the word “_____” the writer...	This suggests...	An Elizabethan audience would find this...
The writer gives the impression...	Shakespeare creates imagery using nouns like...	This illustrates...	Modern audiences might see Juliet as...
We can clearly see that...		This portrays...	
		Shakespeare conveys...	

3.4 – CRITICAL (ESSAY) WRITING LANGUAGE AND PHRASING

Tentative Words and Phrases

Could suggest...	Maybe
Might imply...	Possibly
May produce a sense of...	Perhaps
Appears to present...	Seems to

Comparison Connectives – Similarity and Difference

Similarly	In contrast / Contrastingly
In the same way	On the other hand
Also	However
In addition	Whereas

Some useful phrases

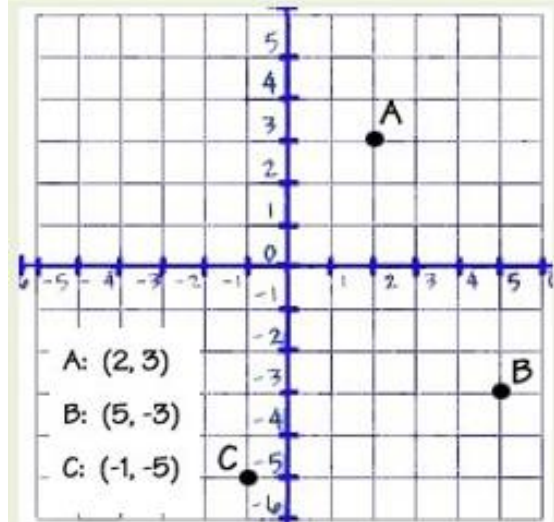
Shakespeare presents / hints / creates ...
 Through the character of ... Shakespeare explores/questions ...
 Shakespeare challenges the belief that ...
 Shakespeare asks the audience to question/consider ...

Using Quotations

Decide which quotations you want to use to prove your points.
 Remember that using short, integrated quotations is more effective than writing out large chunks of text.

Quota

Coordinates are two numbers or letters that describe a position on graphs, charts and maps. The horizontal coordinate (x) is always written first and the vertical coordinate (y) second.



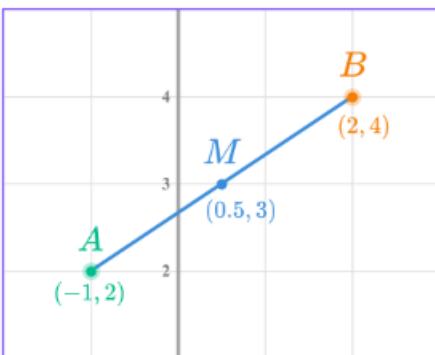
Rounding to Significant Figures

Round 53,879 to 1 significant figure, then 2 significant figures.

- 5|3879 to 1 significant figure is 50,000
- 53|879 to 2 significant figures is 54,000

How To Find the Midpoint

The **midpoint of a line** segment is a point that lies exactly halfway between two points.



To find the coordinates of the **midpoint M** , take the averages of the x and y coordinates of the endpoints A and B :

Average of the x coordinates is $\frac{-1+2}{2} = \frac{1}{2} = 0.5$

Average of the y coordinates is $\frac{2+4}{2} = \frac{6}{2} = 3$

Estimation

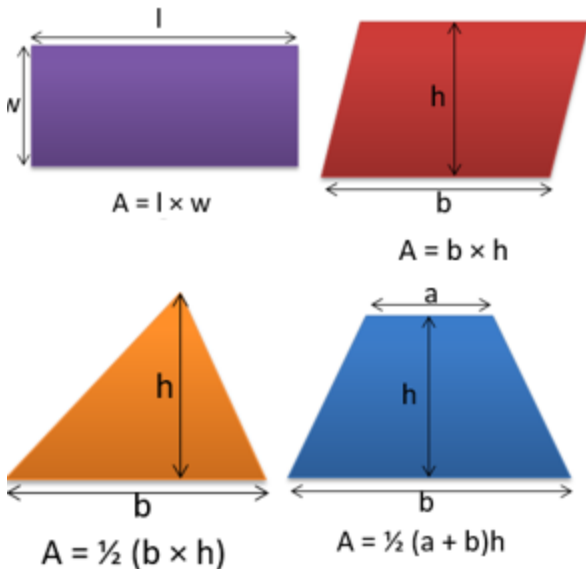
Estimate: $\frac{423-98}{16.4}$

Rounding to 1 significant figure gives:
 $\frac{400-100}{20} = \frac{300}{20} = \frac{30}{2} = 15$

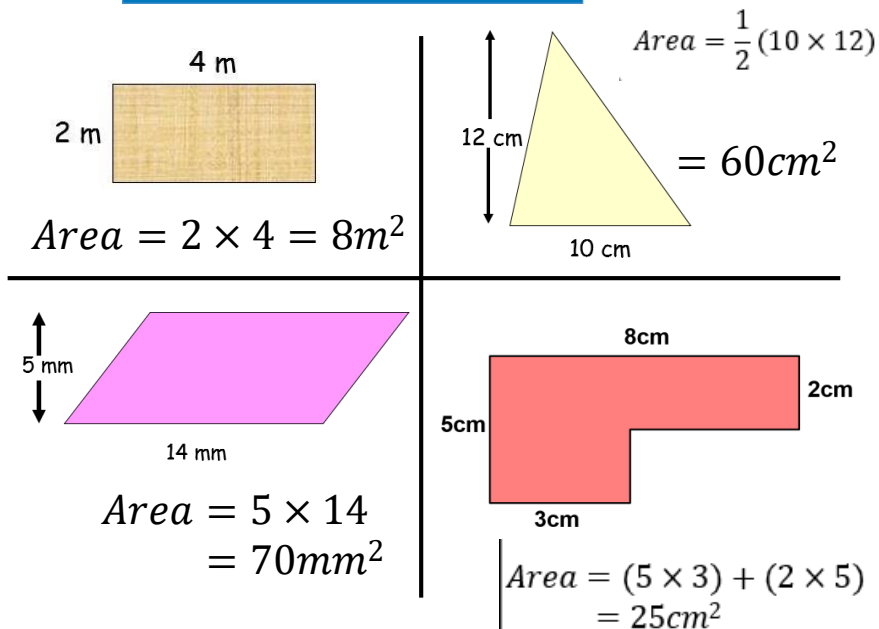
Therefore: $\frac{423-98}{16.4} \approx 15$

Key Term	Definition
Area	A measure of the space inside a closed two-dimensional shape.
Centimetre (cm)	A metric unit of length equal to one hundredth of a metre. 100cm = 1m
Compound Shape	A shape made up of two or more geometric shapes.
Irregular Polygon	A polygon with unequal length sides and angles.
Line of Symmetry	A line that can divide a shape into identical halves, which are mirror images of each other.
Metre (m)	The base unit of length in the international system of units.
Millimetre (mm)	A metric unit of length equal to one thousandth of a metre. 10mm = 1cm
Order of Rotation	The number of times that a shape appears identical during a turn of 360°.
Parallel	Two lines that will never cross and that will remain the same distance apart.

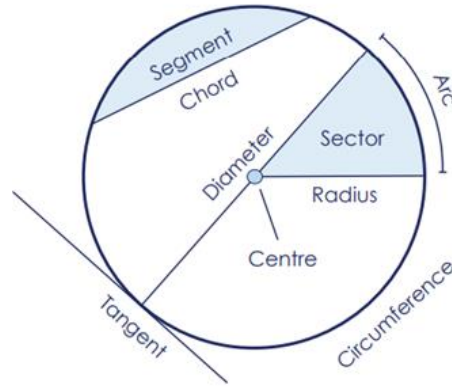
Key Formula - Area



Area Example



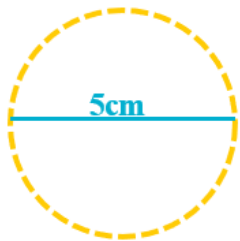
Parts of a circle



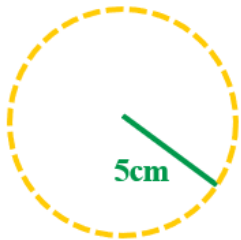
Key Term	Definition
r	Radius (from the centre to the circumference). Also half the diameter
d	Diameter – a line across the circle going through the centre
π	Pi – this can be rounded to 3.14

Circumference To find the circumference of a circle we use the formula: $C = \pi d$ or $C = 2\pi r$.

E.g. Find the circumference of the following circles.



$$\begin{aligned}
 C &= \pi d \\
 &= \pi \times 5 \\
 &= 5\pi \\
 &= 15.7 \text{ cm (to 1 d.p.)}
 \end{aligned}$$

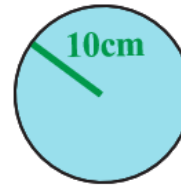


$$\begin{aligned}
 C &= 2\pi r \\
 &= 2 \times \pi \times 5 \\
 &= 10\pi \\
 &= 31.4 \text{ cm (to 1 d.p.)}
 \end{aligned}$$

Area To find the area of a circle we use the formula:

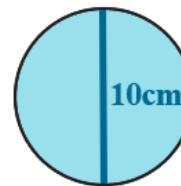
$$A = \pi r^2$$

E.g. Find the area of the following circles:



$$\begin{aligned}
 A &= \pi r^2 \\
 &= \pi \times 10^2 \\
 &= 100\pi \\
 &= 314.2 \text{ cm}^2 \text{ (to 1 d.p.)}
 \end{aligned}$$

If $d = 10 \text{ cm}$, then $r = 5 \text{ cm}$

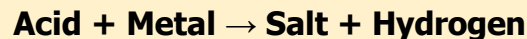


$$\begin{aligned}
 A &= \pi r^2 \\
 &= \pi \times 5^2 \\
 &= 25\pi \\
 &= 78.5 \text{ cm}^2 \text{ (to 1 d.p.)}
 \end{aligned}$$



Acids – All acid compounds have salt in them. The three main acids are hydrochloric acid, sulfuric acid and nitric acid.

Salts – When the hydrogen in an acid is replaced by a metal, the compound is called a salt.



Metal oxides – Many metals will react with the oxygen in the air to produce a metal oxide.



Metal hydroxide – Very reactive metals react with cold water to produce a metal hydroxide and hydrogen.



Types of salt

Hydrochloric acid produces chlorides (e.g. sodium chloride)

Sulfuric acid produces sulfates (e.g. copper sulfate)

Nitric acid produces nitrates (e.g. potassium nitrate)

Testing for hydrogen

Collect in an upside down test-tube.

Insert a burning splint – there will be a 'squeaky pop' sound.

State symbols

(s) Solid (l) Liquid (g) Gas

(aq) aqueous = dissolved in water

Reactions with oxygen

Magnesium – burns vigorously

Zinc – burns less vigorously

Iron – burns if heated strongly, when cold will slowly form a layer of oxide on surface (rust)

Lead & Copper – Do not burn, when heated will form a layer of oxide on the surface

Increasing reactivity

most reactive

potassium

sodium

lithium

calcium

magnesium

aluminium

zinc

iron

lead

copper

silver

gold

least reactive



Producer – green plant/algae that makes its own food.

Herbivore – type of **consumer** that eats the producer.

Carnivore – type of **consumer** that eats other animals.

Omnivore – type of consumer that eats producers and animals.

Prey: an organism eaten by another organism.

Predator: an organism that eats another organism.

Food chains show the transfer of energy between organisms – the arrows represent the direction of energy transfer.

Food webs show how lots of food chains are connected in an ecosystem.

The number of **organisms** that live in the same area is called a **population**. Populations of organisms are constantly changing – this affects other populations in a food web.

Interdependence is when living organisms depend on each other to survive, grow, and reproduce.

Ecosystem: all the organisms found in a particular location, and the area they live in.

Community: the organisms in an ecosystem. Habitat: the area a community lives in.

Niche: the particular place or role that an organism has within an ecosystem. This reduces competition for resources.

Food chain

herbivore – type of **consumer** that eats the producer

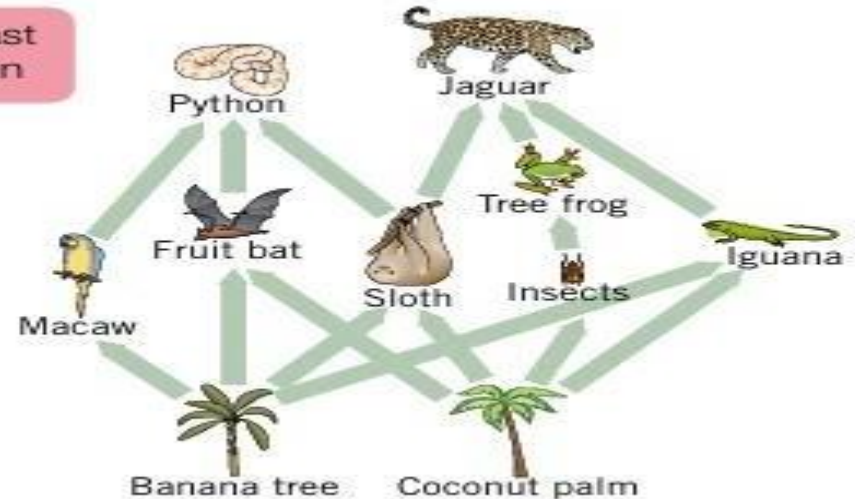
apex predator – last link in a food chain



producer – green plant/algae that makes its own food

carnivore – type of consumer that eats other animals

Food web





Speed is how far something moves in a certain time.

$$\text{Speed (m/s)} = \text{Distance travelled (m)} \div \text{Time taken (s)}$$

Speed can be measured in miles per hour (mph), metres per second (m/s) or kilometres per hour (km/h)

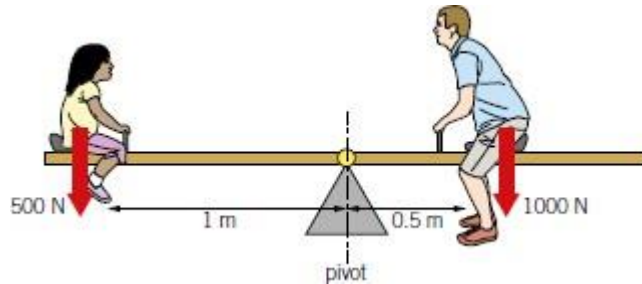
A **distance – time** graph shows when an object is stationary (horizontal line) or moving (angled line).

Moments are the turning effect of a force.

$$\text{Moment (Nm)} = \text{Force (N)} \times \text{Perpendicular distance from the pivot (m)}$$

The law of moments

When an object is in **equilibrium** all the **clockwise moments** added together **equal** all the **anti-clockwise moments** added together.



Pressure is how much force in a certain area.

$$\text{Pressure (N/m}^2\text{)} = \text{Force (N)} \div \text{Area (m}^2\text{)}$$

Pressure is measured in newtons per metre squared (N/m²), or newtons per centimetre squared (N/cm²).

1 N/m² is also called 1 pascal (Pa)

Solids and **Liquids** are **incompressible**. This is because all the particles are touching.

Pressure can be transmitted **through a liquid**. This is used in hydraulics.

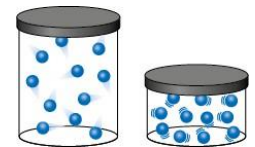
Pressure **increases with depth** in a **liquid**.

Gases can be compressed. This is because there are gaps between the particles.

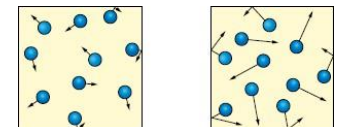
Atmospheric Pressure decreases with height above sea level.

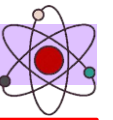
Collisions between gas molecules and their container produce **gas pressure**.

If you compress a gas there will be more frequent collisions and so a higher pressure.



If you heat a gas the particles move faster, there will be more frequent collisions and so a higher pressure.





Static electricity: by rubbing insulators together **electrons** are **transferred**, which gives the objects electrostatic charges.

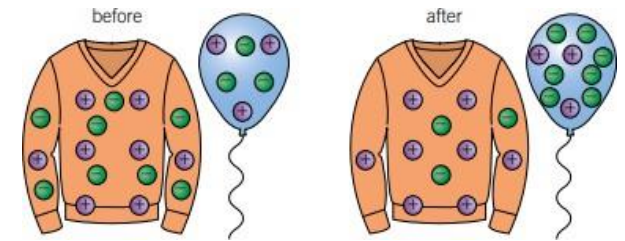
Like charges (+ and +) or (- and -) **repel**.

Opposite charges (+ and -) **attract**.

Charged objects have **electric fields** around them.

Electric field lines are used to show how a positive charge will act.

Only **electrons** are **transferred**.



Current is the amount of **charge flowing per second**.

- It is measured with an **ammeter** (connected in series).
- The **unit** for current is the **amp (A)**.

Potential difference is the amount of **energy transferred** by the **charges** in the circuit.

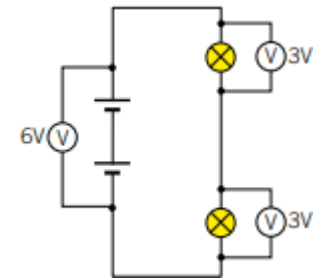
- It is measured with a **voltmeter** (connected in parallel).
- The **unit** for potential difference is the **volt (V)**.

Resistance is a measure of how easy it is to pass through a component.

- Resistance is calculated by measuring the potential difference and the current.
- The **unit** for resistance is the **ohm (Ω)**.

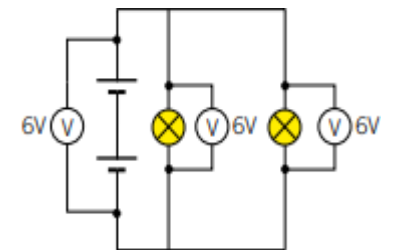
Series circuits

- contain only one loop
- the current is the same everywhere
- the potential difference across each component adds up to the potential difference across the battery
- if one component or wire breaks, current stops flowing everywhere.



Parallel circuits

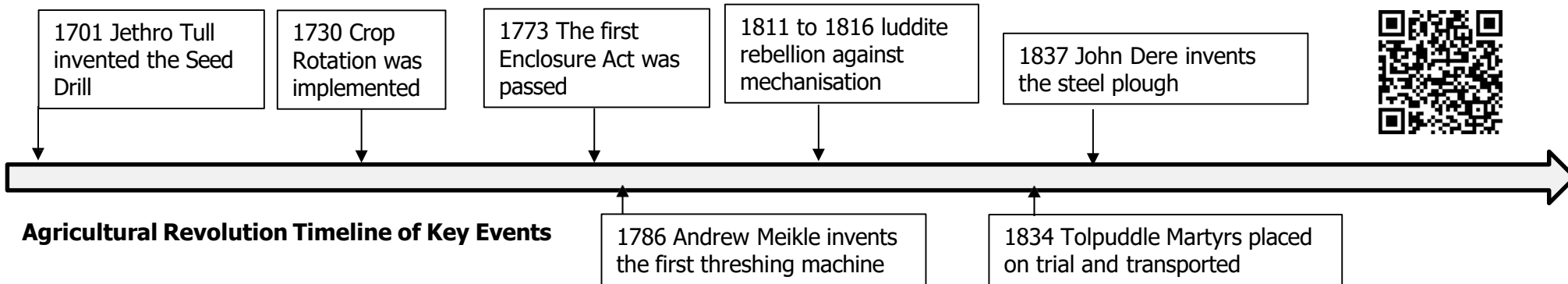
- contain multiple branches
- currents in all the branches add up to make the total current
- the potential difference across each component is the same as the potential difference across the battery





3.1 Agricultural Revolution Key Terms	Definition
3.1.1. Field Strip System	Strip cropping is a method of farming which involves cultivating a field partitioned into long, narrow strips which are alternated in a crop rotation system.
3.1.2. Crop Rotation	The practice of growing different types of crops in the same area over multiple growing seasons. It's an important technique to keep soil quality good.
3.1.3. Subsistence Farming	Agricultural activity to produce food which is mainly consumed by the farming household with little surplus available for sale or trade.
3.1.4. Selective Breeding	The process of artificially breeding plants and animals to develop specific traits e.g. bigger crop yields.
3.1.5. Rural	Of the countryside.
3.1.6. Fallow	The practise of leaving a field to rest so that nutrients can be restored.
3.1.7. Enclosure Acts	A series of acts passed by parliament in the nineteenth century to redistribute land from local communities to wealthy landowners.
3.1.8. Mechanisation	The introduction of machinery in agriculture.

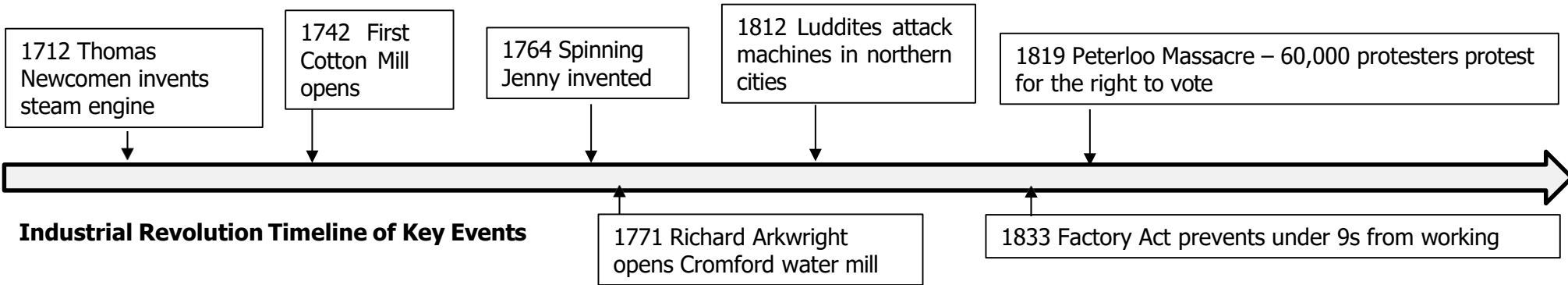
3.2 Tolpuddle Martyrs	
3.2.1 Tolpuddle Martyrs	A group of farm workers from Dorset who stood up for their rights against their landowner for higher pay.
3.2.2. Friendly Society	An early trade union formed in secret by the Tolpuddle Martyrs
3.2.3. Starvation Wages	The low wages paid to the Dorset farm labourers
3.2.4. Transportation	A punishment were criminals were sent the Australia to work doing hard labour.
3.2.5. Assizes	Occasional courts where criminals were tried. The Dorset Assizes were at Shire Hall in Dorchester.
3.2.6. Pardon	The Tolpuddle Martyrs were pardoned in 1836.





3.3 Key Individuals	
3.3.1. Abraham Darby	He discovered that coke can be used to smelt iron instead of charcoal.
3.3.2. Thomas Newcomen	He invented the first steam powered engine, which was later improved by James Watt.
3.3.3. James Hargreaves	Invented the Spinning Jenny to completely transform cotton manufacturing.
3.3.4. Richard Arkwright	He transformed factories by introducing the 'Spinning Frame' powered by water and later Cromford Mill, also powered by water.
3.3.5. George Stephenson	He built the steam locomotive 'The Rocket' in 1829.
3.3.6. Joseph Bazalgette	The civil engineer who completely rebuilt the London sewer system which opened in 1865.
3.3.7. Isambard Kingdom Brunel	Engineer who famously built the Clifton Suspension Bridge, Thames Tunnel and the Great Western Railway.
3.3.8. Queen Victoria	Monarch who reigned the British Empire from 1837-1901.

3.4 Key Information	
3.4.1. Cholera	A waterborne disease responsible for killing thousands of people during the rapid urbanisation of Britain in 19 th Century.
3.4.2. Urbanisation	The increase in population in Britain's towns and cities.
3.4.3. Great Reform Act	Act of Parliament that gave the right to vote to middle class men in 1832 (not women).
3.4.4. The Factory Act	This was a law that established regulations to improve working conditions for children in factories in 1833.
3.4.5. Peterloo Massacre	This was a violent government suppression of a peaceful protest in Manchester, England on August 16, 1819.
3.4.6. Education Act	This was the first time a provision was made to send children aged 5-12 to school in England and Wales.
3.4.7. Rainhill Trials	George Stephenson's 'Rocket' was the only train to complete the 1.6km journey along the Liverpool-Manchester railway.





Ecosystems

Key Vocabulary

Fragmentation
Vegetation
Coppicing
Decline
Hibernation
Population
Habitat
Ecosystem

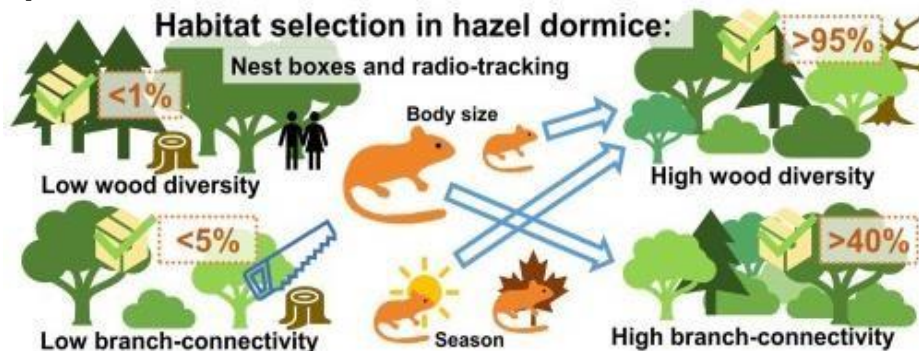
This topic is about dormice as a 'cornerstone' species. By looking after the dormice habitat, the whole woodland ecosystem benefits

Habitat Dormice prefer the new growth of woody vegetation that arises after woodland management such as coppicing, ride widening, thinning or glade creation. In the UK, they tend to favour old coppice woodland but they're also found in scrubland, old hedgerows and sometimes conifer plantations. Their range has shrunk significantly and they're now confined predominantly to southern England and Wales with a few scattered populations in the Midlands, Wales and Lake District. Even where dormice remain, their distribution is patchy.

ID The head and body of a hazel dormouse is about 8cm long, with a tail length of about 6.5cm. They have relatively large eyes and small, round ears. Their weight varies through the year but it averages 19-20g. When they start to put on weight prior to going into hibernation they can weigh between 30g-40g. Their average lifespan is three years in the wild but they can live up to five years. They're the only small mammal in the UK with a furry tail because it is related to the squirrel.



Species



Diet The diet of a hazel dormouse varies depending on the time of year. In autumn, they will feast on nuts, seeds and berries, in order to put on enough fat for them to survive the winter. Once they emerge from hibernation, they will eat the blossoming flowers of trees such as hawthorn and oak, also taking insects like caterpillars when summer arrives.

Habitats loss and fragmentation

The loss of ancient woodland and hedgerows across the UK is thought to be a major reason for this decline, as dormice will not leave the safety of trees to cross large, open spaces. This means populations become isolated, lose genetic diversity and are therefore more vulnerable to extinction

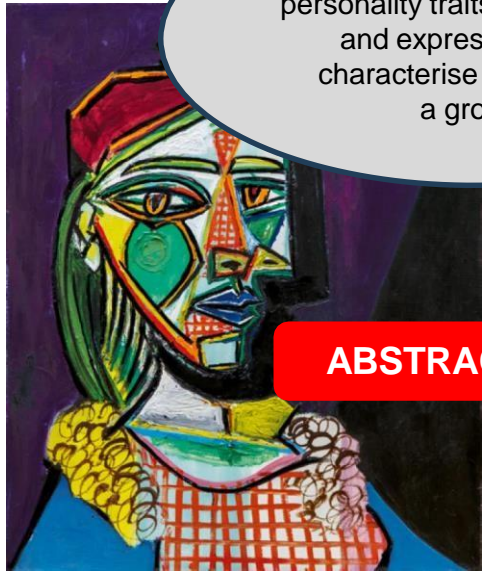
Solutions

Coppiced woodlands are favourite habitat of Dormice. Coppicing increases the variety of heights of vegetation, which in turn encourages more biodiversity which provides food and shelter for the dormice.

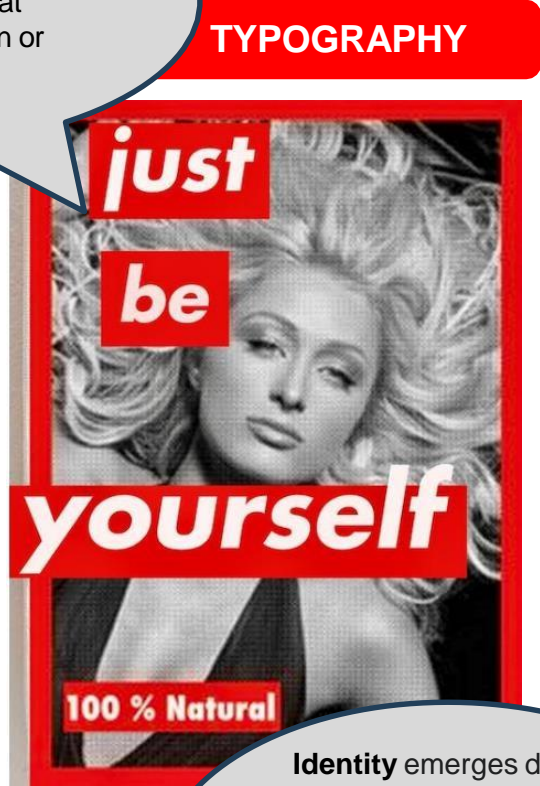




Identity is the set of beliefs, personality traits, appearance, and expressions that characterise a person or a group.



ABSTRACT



TYPOGRAPHY

COLLAGE



MIXED MEDIA



Identity emerges during childhood as children start to comprehend their self-concept and is shaped by cultural factors and how others perceive and acknowledge us.

STREET ART

Key vocabulary
Popular culture
Primary colours
Block colour
Abstract
Mixed media
Graffiti
Collage
Typography
Commercial art
Motif
Repeat patterns
Irony
Self-concept
Group identity

Artists we will study: Peter Blake, Julian Opie, Picasso, Barbara Kruger, Jean-Michel Basquiat



1. The Musical Elements are the basic building blocks of all music

Melody		Melody is The tune; high and low pitch notes
Articulation		Articulation Is The way a note is played; staccato (short) or legato (smooth)
Dynamics		Dynamics are how loud or quiet the music is
Texture		Texture is how thick or thin the music is (how many instruments are playing)
Structure		Structure is the building blocks of music (How it is put together)
Harmony		Harmony is the effect of two or more notes sounding simultaneously; chords, bass line
Instrument/ timbre		Timbre is the specific sound an instrument makes
Rhythm		Rhythm is the pattern of long and short notes. Duration is how long or short the note is
Tempo		Tempo is how fast or slow the music is played

2. Note Durations

Semibreve 4 beat note	Minim 2 beat note	Crotchet 1 beat note	Quaver ½ beat note	Semi-quaver ¼ beat note

3. Accidentals

	Sharp	A sharp is the note a half step to the right of a given note on the keyboard
	Flat	A flat is the note a half step to the left of a given note on the keyboard

4. Note names on the stave

Right Hand (high notes)

THE TREBLE CLEF

Every Good Boy Does Fine FACE

5. Note names on keyboard

C D E F G A B



TOURISTS GO HOME

Responsible TOURISM

DO'S + DON'TS

SUPPORT ARTISANS + SMALL BUSINESSES	RETHINK LARGE CRUISES TO POPULAR PORT DESTINATIONS
STAY LONGER TO EXPERIENCE MORE	AVOID DAY TRIPS TO OVERTOURISTED DESTINATIONS
RESPECT THE LOCAL CULTURE + ETIQUETTE	RECONSIDER USING HOMESTAY SERVICES SUCH AS AIRBNB
REDUCE, REUSE AND RECYCLE	REFRAIN FROM LEAVING LOVE LOCKS ON BRIDGES
TRAVEL OFF PEAK OR SHOULDER SEASON	RETHINK TRAVELLING IN LARGE GROUPS
TAKE DIRECT FLIGHTS OR USE LAND TRANSPORT	AVOID SUPPORTING ANIMAL EXPLOITATION
SEEK ALTERNATIVES TO POPULAR SPOTS	DON'T BE AN EASY TARGET FOR PICKPOCKETS
POST ETHICALLY TO SOCIAL MEDIA	
LEARN SOME LANGUAGE BASICS	
LEAVE NO TRACE	

'BLEND IN' ON YOUR NEXT TRIP

ECOTOURISM is a type of tourism that focuses on sustainability and the natural world. Here are five features of ecotourism:

Minimal Impact – Ecotourism aims to cause minimal impact on the environment and local people.

Environmental Awareness – Ecotourism builds environmental awareness and encourages stewardship of the natural environment.

Local Benefits – Ecotourism provides economic benefits and empowerment to local people. It also provides direct financial benefits for conservation.

Respect – Ecotourism respects local culture, traditions and human rights.

Education – Ecotourism creates knowledge and understanding through education of visitors, staff and the visited.

THE NATIONAL TRUST

This is an organization which preserves our heritage- land and buildings – restoring them to enable them to become tourist attractions.

There is not a French version of the National Trust, but there are some similar organizations in France:

Fondation du Patrimoine

This foundation, established in 1996, helps preserve France's heritage by assisting private owners to restore important buildings.

Adapté un Château

This association was founded by Julian Marquis, who said there was no equivalent to The National Trust. The association aims to save châteaux.

Ma Routine

Je me réveille 	Je me lève 	Je me douche
Je me brosse les dents 	Je m'habille 	Je me couche
Je déjeune 	Je prends le bus 	Je vais au collège
Je rentre 	Je dîne 	Je fais mes devoirs



PROGRAMMING CONSTRUCTS



A Sequence is when there are programming steps that are carried out one after another.



Selection is where there are different paths in your code eg: IF, ELIF, ELSE



Iteration is when there is repetition (loops) in code. This could be a WHILE loop (do something WHILE a condition is met) or a FOR loop (do something for a set number of times)

IMPORT

```
import turtle
turtle.shape("turtle")
```

Using 'Import' allows you to access code from an external program. In this case, we are importing the Turtle in order to create graphics.

ALGORITHM

An algorithm is simply a set of instructions. It is usually a sequence of events.

VARIABLES

A variable is something that can be used to store information or a value. The information that is stored can be changed throughout a program.

MOVEMENT

```
python turtle.py - C:/Users/MrFong/Desktop/python
File Edit Format Run Options Window Help
import turtle

turtle.forward(100)
turtle.right(90)
```

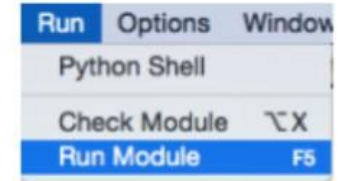
The Turtle understands commands 'Forward' 'Right' and 'Left' To turn, the code must state what degrees and direction.

KEY COMMANDS

<code>turtle.forward()</code>	Moves turtle forward	<code>turtle.penup()</code>	Lifts pen up
<code>turtle.backward()</code>	Moves turtle backward	<code>turtle.pendown()</code>	Puts pen down
<code>turtle.left()</code>	Rotates turtle left	<code>turtle.color()</code>	Changes the pen colour
<code>turtle.right()</code>	Rotates turtle right	<code>turtle.bgcolor()</code>	Changes the background colour

EXECUTING A PROGRAM

In order to run or test a program written in Python the user needs to go to Run and then Run Module. (F5)





FOR LOOP

Used to repeat things a certain number of times.

```
for j in range(5):
    turtle.forward(100)
    turtle.right(72)
```

This would repeat the instructions 5 times. It would draw this shape.



PRINT STATEMENTS

In order to display text in the shell, you need to use a Print statement

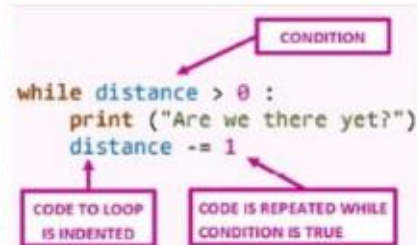
```
print ("Hello World")
print ("I am a programmer")
```

This is the output:

```
Hello World
I am a programmer
```

WHILE LOOP

Performs a task while a certain condition is TRUE



OPERATORS

==	Is equal to
! or <>	Is not equal to
<	Is less than
>	Is more than
>=	Is more than or equal to
<=	Is less than or equal to

FUNCTIONS

We split problems in to smaller problems. We can do the same in programming.

INPUT STATEMENTS

Using var = input () we can ask a user to input some information.

We can then print this back to the console window.

```
userName = input("what is your name?")
print ("Welcome ", userName)
```

userName is a variable. This means we can change the information stored. We can also name it whatever we want.

IF STATEMENTS

IF statements can be used to select different options in a program depending on a condition. Also known as selection.

```
question = input("Are you revising?")
if question == "yes":
    print ("Well done!")
elif question == "no":
    print("Oh dear!")
else:
    print("I don't understand")
```

USEFUL WEBSITES

Tutorials: <https://realpython.com/beginners-guide-python-turtle/>
<https://www.geeksforgeeks.org/turtle-programming-python/>
 Video Tutorials: <https://www.youtube.com/playlist?list=PLzMcbGfZo4-kfGgYZb9dwW3VhoBRG0h9c>

KEYWORDS

Algorithm – A set of instructions	Variable – a value that can change
Sequence - following a particular order	Debug – The process of fixing errors
Selection – a decision that decides the course of action	Syntax – The grammar, structure and order of instructions
Iteration – Repeating of a section of code	Data types – Particular format of data