Year 9 Learning Journal

Learning Cycle 2

Student Name:_____

Contents Page

Home Learning Timetable and Information

Revision Focus Fortnight

Week 1

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Time	Saturday	Sunday
8.30am - 4pm						8.30am - 4pm		
4pm - 5pm						4pm - 5pm		
5pm - 6pm						5pm - 6pm		
6pm - 7pm						6pm - 7pm		
7pm - 8pm						7pm - 8pm		
8pm - 9pm						8pm - 9pm		

Revision Focus Fortnight

Week 2

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Time	Saturday	Sunday
8.30am - 4pm						8.30am - 4pm		
4pm - 5pm						4pm - 5pm		
5pm - 6pm						5pm - 6pm		
6pm - 7pm						6pm - 7pm		
7pm - 8pm						7pm - 8pm		
8pm - 9pm						8pm - 9pm		

4 simple steps

Summarise (yellow)

Organise (green)

Recall (blue)

Test Yourself (red)

Summarise your class notes, handouts and wider reading to **condense and transform** them **as you go along** (saves time and stress closer to exams).

Organise your notes and revision using PLCs (or Exam Specifications) and create **Revision Timetables**, to **focus** time and effort **on weaknesses**.

Use **active recall** and **spaced repetition** to **memorise** the information.

Test Yourself using **low stakes and high stakes** questions to check you can **apply knowledge and understanding**.
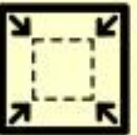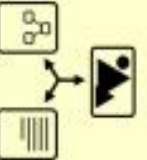
40%   **10%**   **30%**   **20%**

4 Steps to Success with your Studies
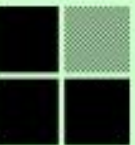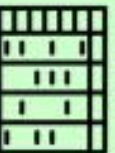
SORT

Test Yourself

Low Stakes	High Stakes
Multiple Choice	Past Paper Questions
Online Quiz or App	Write Qs using PLC
	BUGS the Question
	Write Plans & Mark Schemes
	Traffic Light (RAG) Qs

Recall

Active Recall (Testing Effect)

Blurt - Blank Page Retrieval	Look Say Cover Write Check
Mnemonics	Leitner System (Flash Cards)
Group Games	Memory Journey
Spaced Repetition	

Organise

Traffic Light (RAG)	PLCs or Exam Specs
Revision Timetable (Weekly Review)	Organise Folders (Weekly)
Interleave	Chunk

Summarise

Transform

Condense	Flash Cards
Mind Maps or Organisers	Revision Clocks
Sketchnotes	Cornell Notes
Dual Code	

NT NEWQUAY TRETHERRAS

How to Summarise using ...

Graphic Organisers

Venn Diagram
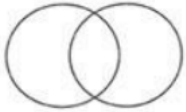
Sequential Thinking Model
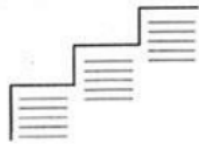
Sequential Thinking Model
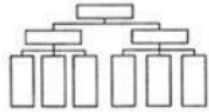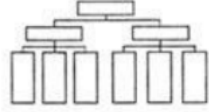
Chain   Chain
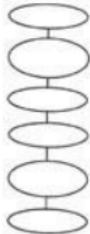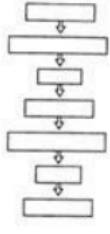
Sequential Thinking Model
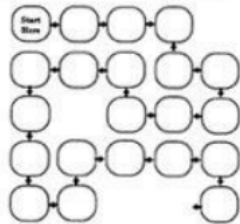
Thinking at Right Angles
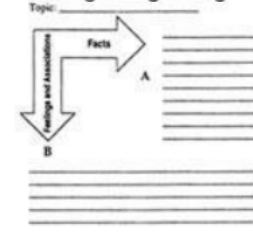
Spider Map
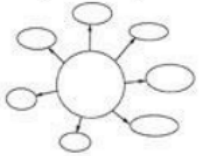
Web
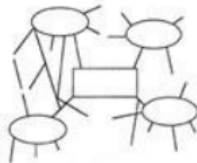
Mind Map
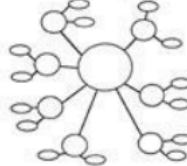
What is the idea?

Using a template to organise your revision notes to help you condense, organise, link and sequence ideas.

What is it useful for?

- Case studies/topic overview
- Larger topics which need chunking
- Each template has different uses

Pros	Cons
There are a huge range of templates that you can use – these might help organise your ideas better according to the topic, and what you need to know about it.	Printed templates can be restrictive.
They can help you sequence and link ideas, as well as summarising.	You need to have thought about how you want to organise your ideas/what you need to know about the topic in order to select an appropriate template.
They help you see the information in different ways and get you thinking more – which helps with RECALL.	There may be too much time spent choosing which one to use!

How do I make one/use one?

1. Decide what you need to know about the topic e.g. cause and effect, chain of consequences, similarities/differences etc
2. Choose an appropriate template to print or draw
3. Organise your revision notes according to the template you have chosen.

NT NEWQUAY TRETHERRAS

SPORT

How to Summarise using ...

A Revision Clock
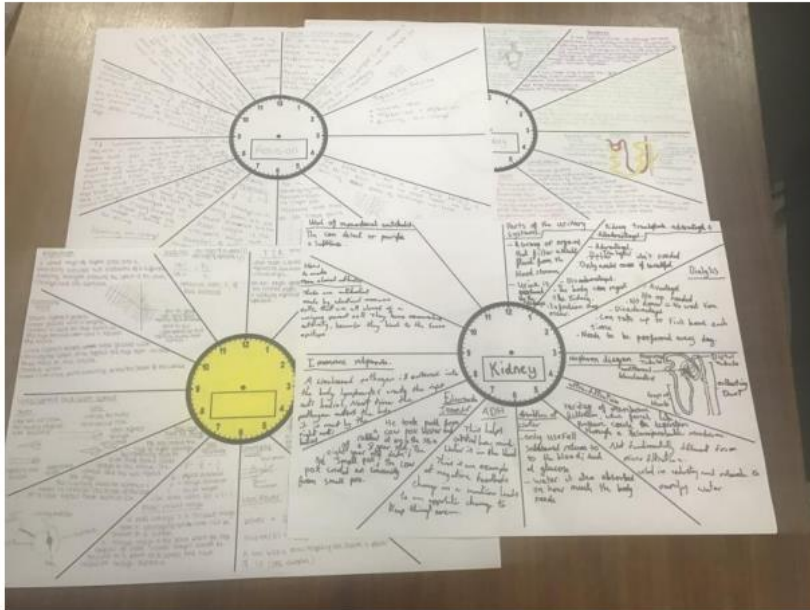
What is the idea?

The sheet helps you to chunk your topic and time into smaller chunks (e.g. 5 or 10 minute sections).

What is it useful for?

- Case studies/topic overview
- Remembering facts within a topic
- Larger topics which need chunking
- Managing your time

How do I make one/use one?

1. Chunk your topic/case study into 12 headings (if using 5 minute divisions)
2. You can group several divisions together into broader categories (e.g. Causes, Effects or Social, Economic, Environmental etc)
3. Spend the allotted 'time' making revision notes (words and images) in each section.
4. RECALL a section using Look, Cover, Say, Write (spending the allotted time for each one).

Pros	Cons
Can include images and written detail which helps your visual and verbal memory (dual coding) - more detail than a mind map.	Doesn't help you make links between areas of a topic (but you can 'group' sections together).
You can use the 'timed sections' to divide your time creating the sections of the revision clock, and/or spending time learning them/self-testing.	They can be time consuming to create (if you don't stick to the timings).
Can use different time divisions e.g. 6 x 10 minutes.	

How to Recall using …

Graphic Organisers

PiXL Think

What is the idea?
Use any graphic/visual organizer or Pixl thinking sheet to recall information from a topic.

Venn Diagram
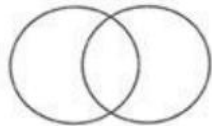
Sequential Thinking Model
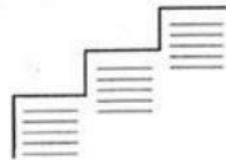
Sequential Thinking Model

Chain   Chain

Sequential Thinking Model

Thinking at Right Angles

Topic:
Facts
A
B
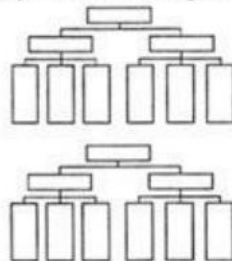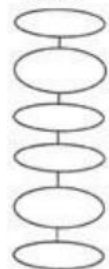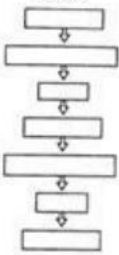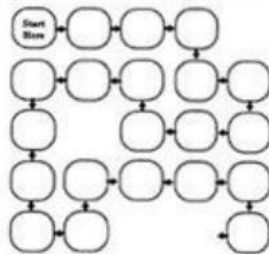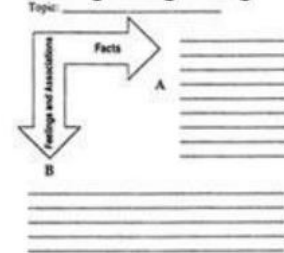
Spider Map
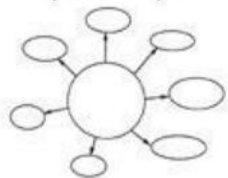
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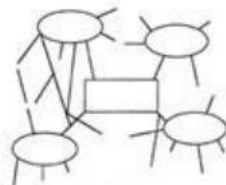
Mind Map
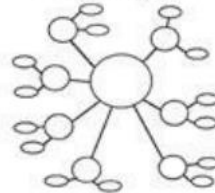
How do I use this method?
1. Select an appropriate template
2. Recall your revision onto the template without using your notes.
3. Once complete - check what you missed/got wrong using your notes
4. Make corrections/additions in a different colour.
5. Focus on these areas the next time you revise.
6. Repeat.

How to Recall using …

Mnemonics

What is the idea?
Learning a different phrase or word to remember the order of something or important things to remember.
You can create your own or there are many examples on the internet!

FOIL

the **first** terms
the **outer** terms
the inner terms
the **last** terms

Example 1:

$(x + 4)(x + 7) = x \cdot x + x \cdot 7 + 4 \cdot x + 4 \cdot 7$

$ = x^2 + 7x + 4x + 28$

$ = x^2 + 11x + 28$

Order of Operations

Show Your Work

Kings	Play	Chess	On	Fine	Glass	Sets
KINGDOM	PHYLUM	CLASS	ORDER	FAMILY	GENUS	SPECIES

My Very Excellent Mother Just Served Us Nachos

Mercury Venus Earth Mars Jupiter Saturn Uranus Neptune

A.V.O.C.A.D.O. =

1. A → Adjectives
2. V → Verbs (Variety of Verbs)
3. O → Opinions
4. C → Connectives
5. A → Adverbs
6. D → Description
7. O → ORIGINALITY

PAPER 1 Q3: ANALYSING STRUCTURE

L- Listing, linear narrative

O- Openings

S- Shifts in focus (big to small, place to place, outside to inside)

T- Time shifts, flashback and flash-forwards

N- Narrative perspective

E- Endings, conclusions

R- Repetition, patterns, motifs

D- Dialogue, development of character

S- Sentence forms/ paragraphs (must relate to the whole text)

Period	Time	Mnemonic
CAMBRIAN PERIOD	545–490 mya	camels
ORDOVICIAN PERIOD	490–445 mya	often
SILURIAN PERIOD	445–415 mya	sit
DEVONIAN PERIOD	415–355 mya	down
CARBONIFEROUS PERIOD	355–290 mya	carefully
PERMIAN PERIOD	290–250 mya	perhaps
TRIASSIC PERIOD	250–200 mya	their
JURASSIC PERIOD	200–145 mya	joints
CRETACEOUS PERIOD	145–65 mya	creak
TERTIARY PERIOD	65–1.64 mya	terribly
QUATERNARY PERIOD	1.64 mya–present day	quietly

SPORT

English Personal Learning Checklists

Dr. Jekyll and Mr Hyde	S	O	R	T
What makes a typical Victorian Gentleman?				
What do you learn about the character Mr Utterson in this opening chapter?				
How is Mr Hyde presented in Chapter One?				
How are Dr. Jekyll and Mr. Hyde contrasted?				
How does the setting of London reflect the theme of duality in the play?				
What is Darwin's theory? How does it link to how Stevenson presents Hyde?				
What are the id, ego and superego? Which character do you think represents each of these?				
Which characters represent the conflict between Science and the Supernatural in Victorian England, and why?				
How do Lanyon and Jekyll represent different views?				
How does Lanyon change in chapter 6?				
How does Jekyll change in chapter 7?				
What similarities do you see between Chapter 1 and Chapter 7?				
What does the breaking down of the door symbolise?				
What do we learn about Jekyll and Hyde from Dr Lanyon's letters?				
How does Utterson try to maintain appearances?				
What do you learn about Jekyll's past?				
What does Jekyll say is the true nature of man?				
In what ways has Jekyll failed in his experiment?				

Ian Rankin's article: Dr Jekyl and Mr Hyde	S	O	R	T
What do you learn about the life of Robert Louis Stevenson in the article?				

A Walk in the Workhouse by Charles Dickens	S	O	R	T
How is are the workhouses presented in Dickens' article: A Walk In A Workhouse?				

In a London Drawing room by George Elliott	S	O	R	T
How is the City of London presented in George Elliot's poem: London in a Drawing room?				

Medusa by Carol Anne Duffy	S	O	R	T
How does Duffy present her ideas about 'love' in Medusa?				
How is imagery used in Medusa to show the brides change?				

English Knowledge Organiser – Jekyll & Hyde

1 — TIER THREE VOCABULARY

Zoomorphism	When a character or an object is given animalistic or primal features
Human Condition	The state of humankind – why we are the way we are and behave the way we are. Writers often explore an aspect of the human condition in their writing.
Gothic	Writing or stories that include dark, supernatural or sinister themes. Gothic literature often combines elements of the disturbing with beauty and fascination.
Symbolism	When something, usually a physical item, is used to represent an idea or concept that is important to the story
Pathetic Fallacy	When the weather is used to reflect the mood or feeling in a story
Incrementum	Refers to a steady increase of something. This can refer to a steady increase of tension through a story or can refer to a steady increase in the length of sentences.
Epistolary	When a story or novel is written in or includes a series of letters
Anecdote	A short, amusing story about something that has happened
Hyperbole	Overdramatic language.
Imagery	Descriptive or figurative language that helps the reader visualize the story (i.e. metaphors and similes are forms of imagery)

2 — Victorian Culture – Gentlemen

They were expected to be: well dressed, articulate, well-read, and chivalrous.

They were not supposed to gossip.

3 — Science and its Boundaries

Stevenson explores the dangers of pushing science too far through the events of the novel but particularly the characters of Lanyon and Jekyll. At the time, it was deemed as dangerous to 'play at being God'

4 — Freud's Structure of the Human Psyche

Freud's Structure of the Human Psyche

Id:	Ego:	Superego:
Instincts	Reality	Morality

5 — Thesis Writing

Thesis writing is where we outline our argument for a Literature Essay. We use a three-pronged approach.

First sentence → What does the writer aim to achieve with the text overall?

Second sentence → How does the writer get this argument across? Which characters or moments do they use?

Third sentence → Provide references from across the text and then explain WHY the writer has done this.

English Knowledge Organiser – Jekyll & Hyde

Key Characters	Purpose & Summary
Doctor Jekyll	Doctor Jekyll is one of the main characters of the novella. He becomes carried away by scientific ambition. This ultimately leads to dire circumstances. He represents internal conflict and the ego.
Mr Hyde	Mr Hyde is a savage character who represents humanity's former primitive state. Hyde is brutal and described as having 'ape-like fury'. He represents the ID.
Mr Utterson	Utterson serves as the detective of the story. He is the voice of reason throughout the novella and is largely seen to be a typical Victorian gentleman – on the surface at least.
Doctor Lanyon	Doctor Lanyon serves as the antithesis of Doctor Jekyll. He is apprehensive about scientific advancement, even referring to Jekyll's work as 'scientific balderdash'. He is constrained by society and is largely seen to parallel the super-ego.

Key Symbols	What They Represent
Alcohol	Alcohol is used as a motif throughout the novella to represent social status.
Jekyll's House and Laboratory	These two images symbolise the duality of human nature – the laboratory being hidden within.
Doors	Stevenson includes a number of significant doors throughout the text, and collectively, they work to symbolize the Victorian Era's preoccupation with the separation of public life and private life. They also represent mystery and secrecy.
Female Characters	The female characters in the novella are either used as damsels in distress or having subservient roles. This is symbolic of the patriarchal society prevalent in Victorian London.

English Knowledge Organiser – Jekyll & Hyde
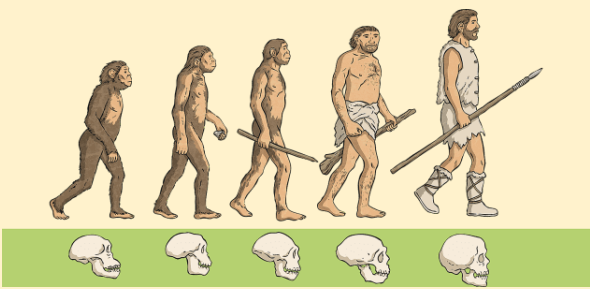
1	TIER THREE VOCABULARY
Motif	An item, usually a physical item, that is referred to throughout a story which represents something. A motif is usually linked to symbolism or theme
Fragmentary Narrative	When a story is not told in the order that it happened but, instead, jumbles the sequence of events or jumps backwards and forwards in time (i.e. using a flashback)
Conjunction	Words or phrases that join together sentences or ideas.
Personification	When an object or thing is given human qualities or emotions
Oxymoron	A phrase that contains two words that are contradictory but the phrase still makes sense.
Foreshadowing	When the reader is given a hint of something to come later in the story
Cyclical Narrative	When a writer returns to an important idea or concept from the very beginning of the story
Tone	The way something is written or said to communicate an emotion or feeling
Oxymoron	A phrase that contains two words that are contradictory but the phrase still makes sense.
Rhetorical Questions	Questions in a story that are there to establish intrigue or doubt

2 Duality

Through the characters of Jekyll & Hyde, Stevenson explores the duality of human nature and the potential evil within.

3 Darwin's Theory of Evolution

Stevenson explores ideas about Darwin's Theory of Evolution through the character of Hyde. He is described using a technique called Zoomorphism to dehumanise him and discuss humanity's inherently savage nature – 'ape-like fury.'

4 Essay Writing

Begin to explore what makes a good Literature Essay with a Thesis Led approach.

1. A really clear and perceptive argument, driven through a thesis.
2. Analysis of the text – the characters, the structure and the language used in order to support our argument.
3. Demonstrating an understanding of what the writer aimed to achieve with their story.

5

Read other stories such as the works of Arthur Conan Doyle and Charles Dickens to support your understanding of these crucial genres.

Maths Personal Learning Checklists

Numbers	Sparx Code	S	O	R	T
Revisit number – including rational and real numbers	U338				
Directed number	M106, M288				
Problem solving with integers and decimals					
HCF and LCM	M698, M227				
Fractional arithmetic	M157, M110, M835				
Standard form	M719, M678				

Using percentages	Sparx Code	S	O	R	T
Equivalence, fractions, decimals & percentages	M264				
Percentage increase and decrease	M476, M533				
Percentage change including reverse percentages	M528				
Repeated percentage change (H)	U332				

Maths & Money	Sparx Code	S	O	R	T
Bank Statements and bills	M901				
Simple and compound interest	U533, U332				
Exchange rates	U610				
Unit pricing – best buys	U721				

Deduction	Sparx Code	S	O	R	T
Angle rules in parallel lines	M679, M276				
Angles with algebra					
Conjectures with angles and shapes	M606, M351, M319, M653				
Constructions and geometrical reasoning	M232, M239, M565				

Rotation & Translation	Sparx Code	S	O	R	T
Rotational symmetry/Lines of symmetry	M523				
Rotation	M910				
Translation including invariant points	U196				
Combined transformations (H)	U766				

Pythagoras' Theorem	Sparx Code	S	O	R	T
Understanding the properties of a right-angled triangle					
Calculating missing sides of a right-angled triangle	M677				
Pythagoras in 3D (H)	M147				

Maths Key Vocabulary

VOCABULARY	VOCABULARY	VOCABULARY

Integer: a whole number that is positive or negative

Rational: a number that can be made by dividing two integers Irrational: a number that cannot be made by dividing two integers

Inverse operation: the operation that reverses the action

Quotient: the result of a division

Product: the result of a multiplication.

Multiples: found by multiplying any number by positive integers Factor: integers that multiply together to get another number

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Equivalent: of equal value.

Reduce: to make smaller in value.

Growth: to increase/ to grow.

Integer: whole number, can be positive, negative or zero.
Invest: use money with the goal of it increasing in value over time (usually in a bank).

Multiplier: a number you are multiplying by. (Multiplier more than 1 = increasing, less than 1 = decreasing) Per Annum: each year

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Profit: the income take away any expenses/ costs.

Credit: money being placed into a bank account

Debit: money that leaves a bank account

Balance: the amount of money in a bank account

Expense: a cost/ outgoing.

Deposit: an initial payment (often a way of securing an item you will later pay for)

Currency: the type of money a country uses.

Unitary: one – the cost of one.

Parallel: two straight lines that never meet with the same gradient. Perpendicular: two straight lines that meet at 90º

Transversal: a line that crosses at least two other lines.

Sum: the result of adding two or more numbers.

Conjecture: a statement that might be true but is not proven. Equation: a statement that says two things are equal

Polygon: a 2D shape made from straight edges.

Counterexample: an example that disproves a statement

Rotate: a rotation is a circular movement.

Symmetry: when two or more parts are identical after a transformation.

Regular: a regular shape has angles and sides of equal lengths.

Invariant: a point that does not move after a transformation.

Vertex: a point two edges meet.

Horizontal: from side to side

Vertical: from up to down

Square number: the output of a number multiplied by itself

Square root: a value that can be multiplied by itself to give a square number

Hypotenuse: the largest side on a right angled triangle. Always opposite the right angle.

Opposite: the side opposite the angle of interest

Adjacent: the side next to the angle of interest

HCF/LCM (R)

1 is a common factor of all numbers

Common factors are factors two or more numbers share

HCF – Highest common factor

HCF of 18 and 30

| 18 | 1, 2, 3, 6, 9, 18 |
| 30 | 1, 2, 3, 5, 6, 10, 15, 30 |

HCF = 6

LCM – Lowest common multiple

LCM of 9 and 12

| 9 | 9, 18, 27, 36, 45, 54 |
| 12 | 12, 24, 36, 48, 60 |

LCM = 36

The first time their multiples match

Integers, real and rational numbers

Rational – root word: ratio

Real numbers: $\frac{2}{3}$ stems from 2:1 ($\frac{2}{3}$ of the whole)

Irrational numbers: $\sqrt{2}$ the solution is a decimal that never ends and does not repeat

The square root of a negative is not a real number and cannot be found

Standard form (R)

Any number between 1 and less than 10 → $A \times 10^n$ ← Any integer

$6 \times 10^5 + 8 \times 10^5$

= 600000 + 800000
= 1400000
= 1.4×10^6

$(1.5 \times 10^5) \div (0.3 \times 10^3)$

$15 \div 0.3 \quad \times 10^5 \div 10^3$

= 5×10^2

Addition/ Subtraction of fractions (R)

$\frac{4}{5} - \frac{2}{3}$
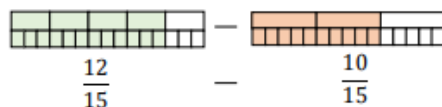
$\frac{12}{15} - \frac{10}{15} = \frac{2}{15}$

Use equivalent fractions to find a common multiple for both denominators

Directed number (R)

● = −1
○ = 1

Addition

$2 + -4 = -2$

Zero pair (−1 + 1 = 0)

Two "−1" left = −2

Generalisation: + − = −

Subtraction

 = 2

Representation for calculation

"Subtract" – means take away or remove

Generalisation: − − = +

$2 - -1 = 3$

Take away one ●

Start with the representation of 2

Multiplication

The act of making counters into their negative is turning them over

$-2 \times -3 = 6$

Divisions are the inverse operations

a = 5   b = −4

Brackets around negative substitutions helps remove calculation errors

$2a - b = 2 \times 5 - (-4) = 10 + 4 = \underline{14}$

Multiplication/ Division of fractions (R)

Shade in 3 parts

Repeat it on this many rows

$\frac{3}{4} \times \frac{2}{3}$

This many columns

This many rows

$\frac{3}{4} \times \frac{2}{3} = \frac{6}{12}$

Parts shaded
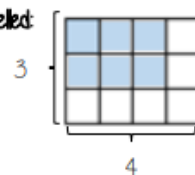
Total number of parts in the diagram

Modelled:

Remember to use reciprocals

$\frac{2}{5} \div \frac{3}{4}$

Multiplying by a reciprocal gives the same outcome

$\frac{2}{5} \times \frac{4}{3}$

Represented

 = $\frac{8}{15}$
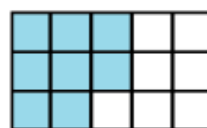
FDP Equivalence (R)

One Whole = 1

Percentage
100% = a whole = 100 hundredths

10 hundredths
10 out of 100
10%

$\frac{10}{100} = \frac{1}{10} = 0.10$

One **hundredth**
(one whole split into 100 equal parts)

ones	tenths	hundredths

Converting FDP (R)

$\frac{70}{100}$

Using a calculator

This also means 70 - 100

70 out of 100 squares
70 "hundredths"
= 7 "tenths"
0.7

70 hundredths
= 70%

S⇌D — Convert to a decimal

× 100 converts to a percentage

Be careful of recurring decimals

eg $\frac{1}{3}$ = 0.3333333
= 0.$\dot{3}$

The dot above the 3

Percentage Increase/ Decrease (R)

Decrease

100%

42% Decrease by 58%

100 - 0.58 = 0.42 ← Less than 1 **Multiplier**

Increase

100%

Increase by 12%

100% + 12% = 112%
100 + 0.12 = 1.12 ← More than 1 **Multiplier**

Percentage change (R)

I bought a phone for £200. A year later sold it for £125

100%
£200
£125

All values of change compare to the ORIGINAL value

Percentage loss

$\frac{75}{200}$ × 100 = 37.5%

$$\frac{\text{Difference in values}}{\text{Original value}} \times 100$$

I bought a house for £180,000, I later sold it for £216,000.

100%
£180,000

Percentage profit

Money made (profit value) → $\frac{36000}{180000}$ × 100 = 20%

Reverse Percentages

40% of my number is 16. What am I thinking of?

Original Number (100%)

4	4	4	4	4	4	4	4	4	4

16

40% = 16
10% - 4
100% = 40

Try to scale down to 10% or 1% and then scale back up to 100%

140% of my number is 84. What is the original number?

Original Number (100%)

6	6	6	6	6	6	6	6	6	6	6	6	6	6

84

140% = 84
10% - 6
100% = 60

Bills and Bank Statements

Bills – tell you the amount items cost and can show how much money you need to pay

Some can include a total

Look for different units (Is it in pence or pounds)

Menu	Price
Milk	89p
Tea	£1.50

Bank Statements

Bank statement can have negative balances if the money spent is higher than the money coming into the account

Date	Description	Credit	Debit	Balance
19th Sept	Salary	£1500		£1500
19th Sept	Mortgage		£600	£900
25th Setp	Bday Money	£15		£915

Simple Interest

For each year of investment the interest remains the same

$$\frac{\text{Principal amount} \times \text{Interest Rate} \times \text{Years}}{100}$$

Principal amount is the amount invested in the account

e.g. Invest £100 at 30% simple interest for 4 years

$$\frac{100 \times 30 \times 4}{100} = £120$$

This account earned £120 interest. At the end of year 4 they have £220
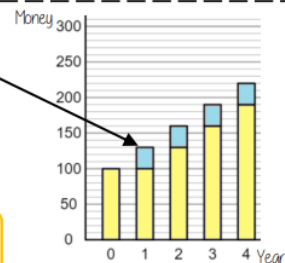
Compound Interest

Interest is added to the current value of investment at the end of each year so the next year's interest is greater.

$$\text{Principal amount} \times \text{Multiplier}^{\text{Years}}$$

e.g. Invest £100 at 30% compound interest for 4 years

$$100 \times 1.3^4 = £285.61$$

This account has £285.61 in total at the end of the 4 years.
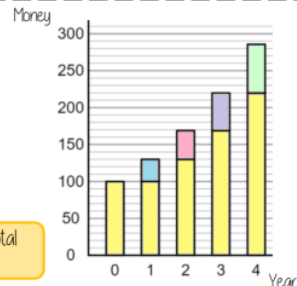
Value Added Tax (VAT)

VAT is payable to the government by a business. In the UK VAT is 20% and added to items that are bought.

Essential items such as food do not include VAT.

Wages and Taxes

Salaries fall into tax brackets – which means they pay this much each month from their salary

Taxable Income	Tax Rate
£12 501 to £50 000	20%
£50 001 to £150 000	40%
over £150 000	45%

Over time:
Time and a half – means 1.5 times their hourly rate
Double – 2 times their hourly rate

Exchange Rates

£1 —x 1.4→ $1.40
£1 —x 200→ £200
$1.40 —x 200→ £280
£200 —x 1.4→ £280
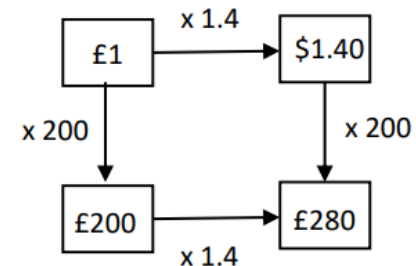
When making estimates it is also useful to use estimates to check if our solution is reasonable.

Use inverse operations to reverse the exchange process

Common Currencies
United Kingdom	£	Pounds
United States of America	$	Dollars
Europe	€	Euros

Unit Pricing

4 Oranges	5 cupcakes
£1	£1.20

To calculate unit per cost you divide by the cost

4 = £1.00 ÷ 2
2 = £0.50
1 = £0.25 ÷ 2

5 = £1.20 ÷ 5
1 = £0.20

Cost per Unit

Cupcakes are the best value as one item has the cheapest value

There is a directly proportional relationship between the cost and number of units.

Alternate angles (R)
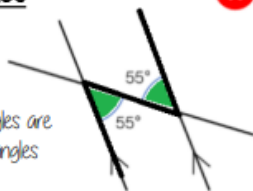
Because alternate angles are equal the highlighted angles are the same size

55°
55°

Corresponding angles (R)
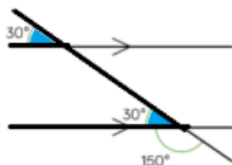
Because corresponding angles are equal the highlighted angles are the same size

30°
30°
150°

Co-interior angles (R)

A
B
C 70°
F
G
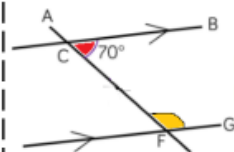
Because co-interior angles have a sum of 180° the highlighted angle is 110°

As angles on a line add up to 180° co-interior angles can also be calculated from applying alternate/ corresponding rules first

Solving angle problems

Link angle facts to algebra

$4x°$
$2x°$

Form an equation

$2x + 4x = 180°$

State the reason
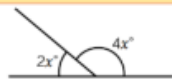
The sum of angles on a straight line is 180°

Solve

$2x + 4x = 180°$
$6x = 180°$
$x = 30°$

Angles on a straight Line
180°

Vertically opposite angles
Equal

Angles around a point
360°

Triangles
Sum of angles is 180°
Isosceles have the same base angles

Interior Angles
The angles enclosed by the polygon
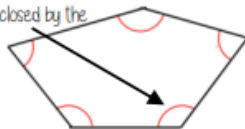
(number of sides – 2) x 180

Making conjectures with angles

True   Always   Never
False   Sometimes

Proving a conjecture
A pattern is noticed for many cases

70°   20°

Disproving a conjecture
Only one counterexample is needed to disprove a conjecture

5°
85°

45°

Apply the angle rules

The sum of angles in a triangle is 180°
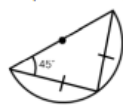
Test the theory

$180 - 70 - 20 = 90$
$180 - 85 - 5 = 90$
$180 - 45 - 45 = 90$

Make conjecture

The angle that meets the circumference in a semi circle is 90°

Making conjectures with shapes

Keywords and facts to recall with shape

Area: the amount of space inside a shape
Perimeter: the length around a shape
Regular Polygons: All sides and angles are equal

Quadrilateral Facts

Square
All sides equal size
All angles 90°
Opposite sides are parallel

Rectangle
All angles 90°
Opposite sides are parallel

Rhombus
All sides equal size
Opposite angles are equal

Parallelogram
Opposite sides are parallel
Opposite angles are equal
Co-interior angles

Kite
No parallel lines
Equal lengths on top sides
Equal lengths on bottom sides
One pair of equal angles

Rotational Symmetry

Tracing paper helps check rotational symmetry
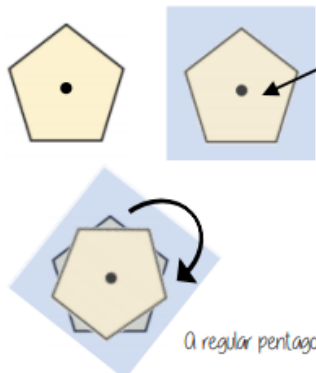
1 Trace your shape (mark the centre point)

2 Rotate your tracing paper on top of the original through 360°

3 Count the times it fits back into itself

A regular pentagon has rotational symmetry of order 5

Rotate from a point (outside a shape)
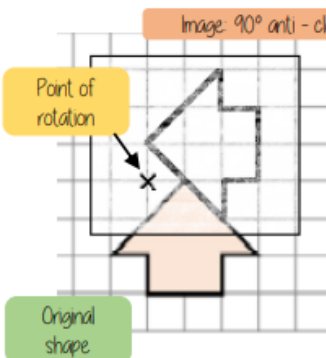
Image: 90° anti - clockwise

Point of rotation

Original shape

1 Trace the original shape (mark the point of rotation)

2 Keep the point in the same place and turn the tracing paper

3 Draw the new shape

Compare rotations and reflections
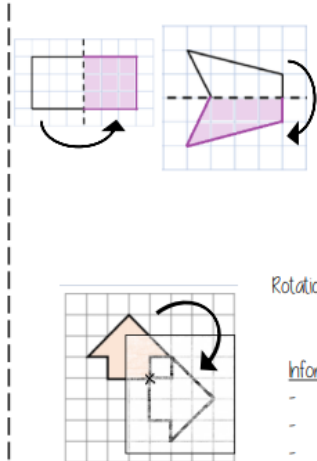
Reflections are a mirror image of the original shape.

Information needed to perform a reflection
- Line of reflection (Mirror line)

Rotations are the movement of a shape in a circular motion

Information needed to perform a rotation
- Point of rotation
- Direction of rotation
- Degrees of rotation

Rotate from a point (in a shape)
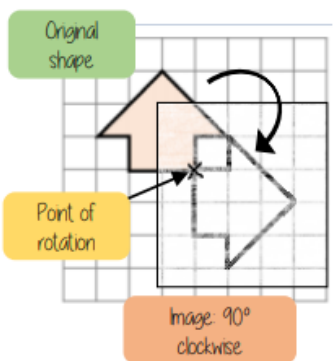
Original shape

Point of rotation

Image: 90° clockwise

1 Trace the original shape (mark the point of rotation)

2 Keep the point in the same place and turn the tracing paper

3 Draw the new shape

Clockwise   Anti-Clockwise

Translation and vector notation

Vector Notation $\rightarrow \begin{pmatrix} 1 \\ -2 \end{pmatrix}$

How far left or right to move
Negative value (left)
Positive value (right)

How far up or down to move
Negative value (down)
Positive value (up)

Translation $\begin{pmatrix} -3 \\ 3 \end{pmatrix}$

Original shape
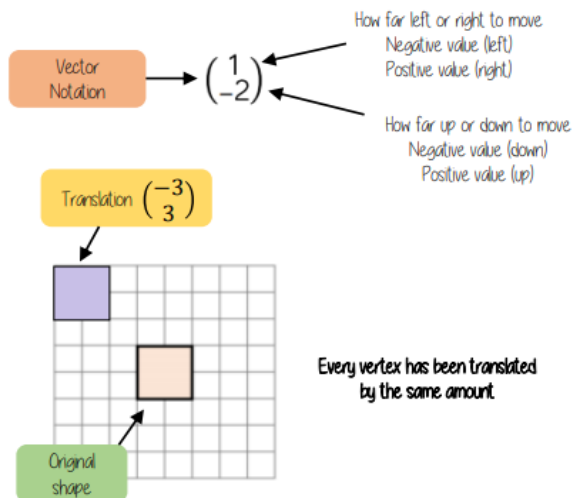
Every vertex has been translated by the same amount

Squares and square roots 🅡

$\sqrt{\ }$ is the square root symbol

This can also be written as 6^2

eg $\sqrt{64} = 8$
Because $8 \times 8 = 64$

1×1	2×2	3×3	4×4	5×5	6×6	7×7	8×8	9×9	10×10
1	4	9	16	25	36	49	64	81	100

Square numbers

Determine if a triangle is right-angled

If a triangle is right-angled, the sum of the squares of the shorter sides will equal the square of the hypotenuse

$$a^2 + b^2 = \text{hypotenuse}^2$$

eg $a^2 + b^2 = \text{hypotenuse}^2$
$3^2 + 4^2 = 5^2$
$9 + 16 = 25$

Substituting the numbers into the theorem shows that this is a right-angled triangle

$a = 3$ $b = 4$ $c = 5$

Identify the hypotenuse
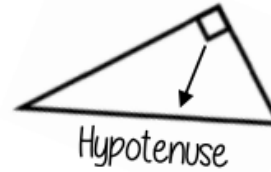
Hypotenuse

The hypotenuse is always the longest side on a triangle because it is opposite the biggest angle.
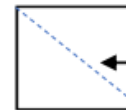
Polygons can still have a hypotenuse if it is split up into triangles and opposite a right angle

Calculate the hypotenuse

3 cm 6 cm b
a
Hypotenuse
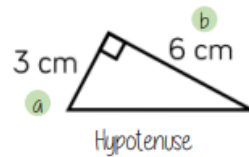
Either of the short sides can be labelled a or b

$$a^2 + b^2 = \text{hypotenuse}^2$$

1 Substitute in the values for a and b

$3^2 + 6^2 = \text{hypotenuse}^2$
$9 + 36 = \text{hypotenuse}^2$
$45 = \text{hypotenuse}^2$

2 To find the hypotenuse square root the sum of the squares of the shorter sides

$\sqrt{45} = \text{hypotenuse}$
$6.71cm = \text{hypotenuse}$

Calculate missing sides

Hypotenuse 15 cm b
a 12 cm
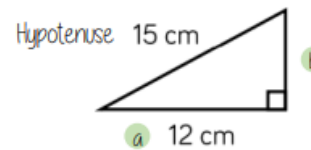
Either of the short sides can be labelled a or b

$$a^2 + b^2 = \text{hypotenuse}^2$$

$12^2 + b^2 = 15^2$

1 Substitute in the values you are given

$144 + b^2 = 225$
$-144 \qquad -144$

Rearrange the equation by subtracting the shorter square from the hypotenuse squared

Square root to find the length of the side
$b^2 = 111$
$b = \sqrt{111} = 10.54\ cm$

Pythagoras' theorem on a coordinate axis

Find the length of the line segment

The segment can be made into a right-angled triangle by adding the sides on the diagram
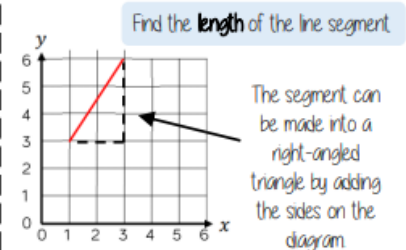
The line segment is the hypotenuse

$$a^2 + b^2 = \text{hypotenuse}^2$$

The lengths of a and b are the sides of the triangle.

Be careful to check the scale on the axes

Science Personal Learning Checklists

Physics Energy	S	O	R	T
Energy Stores and Systems				
Gravitational Potential & Kinetic				
Elastic Potential				
Power & Work Done				
Specific Heat Capacity				
Conservation of Energy + Thermal insulators (Triple Only)				
National & Global Energy				
Energy Stores and Systems				
Gravitational Potential & Kinetic				

Physics Particles	S	O	R	T
Density of Materials				
Changes of State & Internal Energy				
Temperature Change and SLH				
Particle Motion of Gases				
Pressure in Gases (Triple only)				

Physics Particles	S	O	R	T
Structure of the atom				
Radioactive Decay & Decay Equations				
Half Lives				
Chernobyl				
Background Radiation & Uses of Radiation (Triple)				

Disease	S	O	R	T
Communicable diseases				
Natural defences				
Immunity and vaccinations				
Antibiotics and Painkillers				
Drug Development				
Communicable diseases				
Monoclonal antibodies and applications				

Biology Photosynthesis and Respiration	S	O	R	T
Leaves and Photosynthesis				
Roots and Stems				
Transpiration and Translocation				
Plant Diseases (Triple only)				
Photosynthesis, uses of glucose and limiting factors				
Photosynthesis Required Practical				
Aerobic and Anaerobic Respiration				
Response to Exercise & Metabolism				

Science Knowledge Organiser

ENERGY   ENERGY

MATTER   OPEN   CLOSED   ISOLATED

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SPEED, v

MASS, m

$KE = 1/2 \times m \times v^2$

MASS, m

HEIGHT, h

$GPE = m \times g \times h$
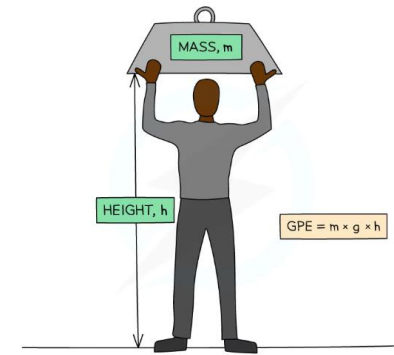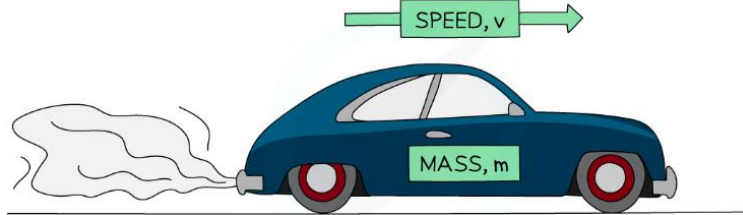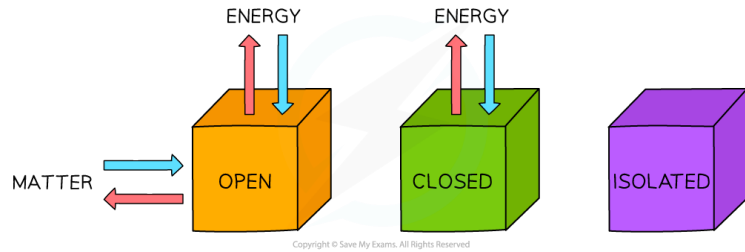
Energy Store	Description
Kinetic	Moving objects have energy in their kinetic store
Gravitational	Objects gain energy in their gravitational potential store when they are lifted through a gravitational field
Elastic	Objects have energy in their elastic potential store if they are stretched, squashed or bent
Magnetic	Magnetic materials interacting with each other have energy in their magnetic store
Electrostatic	Objects with charge (like electrons and protons) interacting with one another have energy in their electrostatic store
Chemical	Chemical reactions transfer energy into or away from a substance's chemical store
Nuclear	Atomic nuclei release energy from their nuclear store during nuclear reactions
Thermal	All objects have energy in their thermal store, the hotter the object, the more energy it has in this store

COPPER BLOCK

ALUMINIUM BLOCK

WATER

SPECIFIC HEAT CAPACITY OF COPPER = 390 J/kg°C

SPECIFIC HEAT CAPACITY OF ALUMINIUM = 910 J/kg°C

SPECIFIC HEAT CAPACITY OF WATER = 4200 J/kg°C

LOWER SPECIFIC HEAT CAPACITY – WARMS UP AND COOLS DOWN QUICKLY AS IT TAKES MUCH LESS ENERGY TO CHANGE ITS TEMPERATURE

HIGHER SPECIFIC HEAT CAPACITY – WARMS UP AND COOLS DOWN SLOWLY AS IT TAKES MUCH MORE ENERGY TO CHANGE ITS TEMPERATURE

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Energy Transfer Pathway Table

Transfer Pathway	Description
Mechanical working	When a force acts on an object (e.g. pulling, pushing, stretching, squashing)
Electrical working	A charge moving through a potential difference (e.g. current)
Heating (by particles)	Energy is transferred from a hotter object to a colder one (e.g. conduction)
(Heating by) radiation	Energy transferred by electromagnetic waves (e.g. visible light)

ENERGY IS TRANSFERRED USEFULLY FROM THE KINETIC STORE OF THE BAT

TO THE KINETIC STORE OF BALL

ENERGY IS ALSO DISSIPATED TO THE THERMAL STORES OF THE BAT, BALL AND SURROUNDINGS

KINETIC STORE OF BALL

KINETIC STORE OF BAT

THERMAL STORE OF BAT

THERMAL STORE OF BALL

THERMAL STORE OF SURROUNDINGS
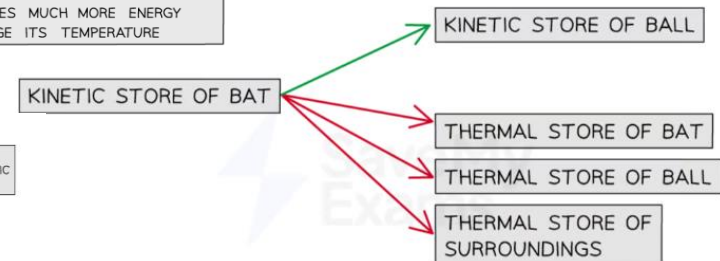
KEY: → = USEFUL → = NOT USEFUL

Science Knowledge Organiser

FOSSIL FUEL → BOILER → TURBINE → GENERATOR → GRID

GAS
COAL
STEAM
WATER

CHEMICAL ENERGY STORE → THERMAL ENERGY STORE → KINETIC ENERGY STORE → KINETIC ENERGY STORE → TRANSFERRED AWAY ELECTRICALLY
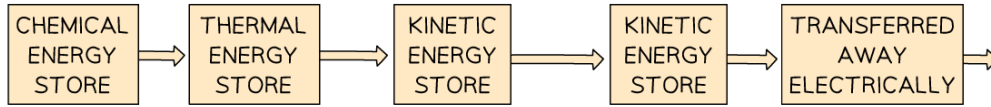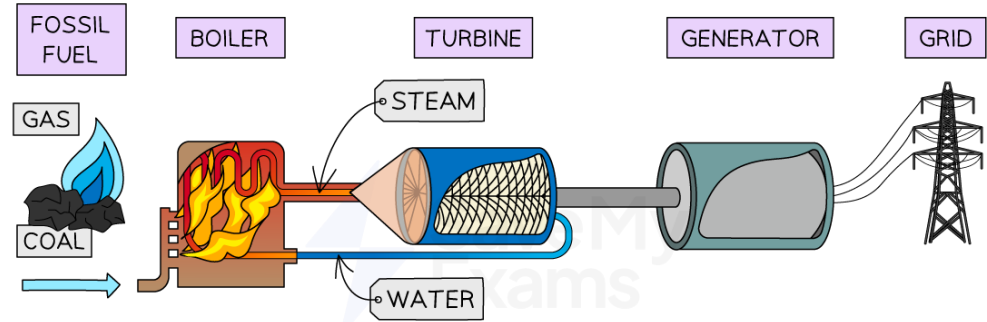
State	Solid	Liquid	Gas
Density	High	Medium	Low
Arrangement of particles	Regular pattern	Randomly arranged	Randomly arranged
Movement of particles	Vibrate around a fixed position	Move around each other	Move quickly in all directions
Energy of particles	Low energy	Greater energy	Highest energy
2D diagram			

Energy Resources	Description
Fossil fuels	Fossil fuels are combusted to heat water to produce steam to turn turbines to generate electricity
Nuclear	Nuclear fuels are reacted to heat water to produce steam to turn turbines to generate electricity
Bio−fuels	Plant matter, ethanol or methane can be produced and used as a fuel in place of fossil fuels
Wind	Wind turns turbines directly to generate electricity
Hydroelectric	Water is stored at a height, and when released, rushing water turns turbines directly to generate electricity
Tidal	The movement of water due to tides turn turbines directly to generate electricity
Geothermal	Hot rocks underground are used to heat water to produce steam to turn turbines which generate electricity
Solar	Solar cells use light to generate electricity, solar panels use thermal radiation to heat water to produce warm water for household use
Water waves	Moving water due to waves turn turbines directly to generate electricity

= PROTON
= NEUTRON
= ELECTRON

EUREKA CAN
MEASURING CYLINDER
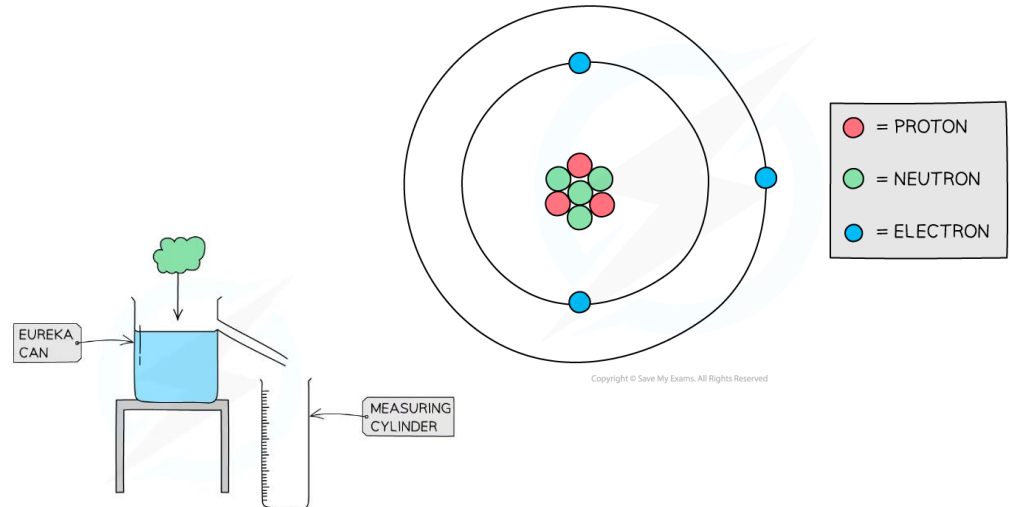
Apparatus for measuring the density of irregular objects

Science Knowledge Organiser

Isotopes

Particle Legend
- = PROTON (red)
- = NEUTRON (green)
- = ELECTRON (blue)

Plum Pudding Model
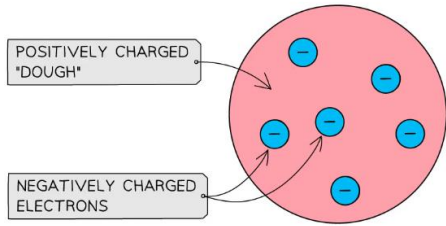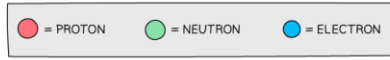
POSITIVELY CHARGED "DOUGH"

NEGATIVELY CHARGED ELECTRONS

J J Thomson thought of the atom as being a positively charged mass embedded with small negatively charged electrons – a bit like a plum pudding
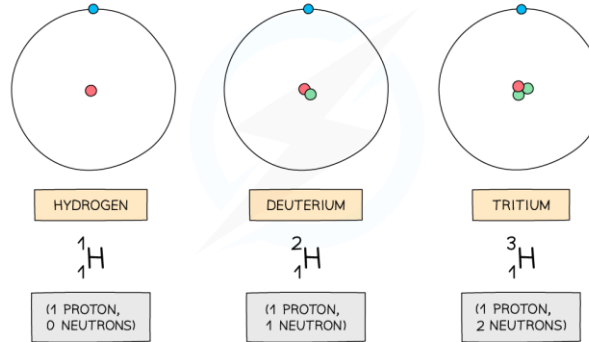
Hydrogen Isotopes

HYDROGEN
$$^{1}_{1}\text{H}$$
(1 PROTON, 0 NEUTRONS)

DEUTERIUM
$$^{2}_{1}\text{H}$$
(1 PROTON, 1 NEUTRON)

TRITIUM
$$^{3}_{1}\text{H}$$
(1 PROTON, 2 NEUTRONS)

Radiation Types

ALPHA PARTICLE — 2 PROTONS 2 NEUTRONS

BETA PARTICLE — ELECTRON

GAMMA RAY — EM WAVE
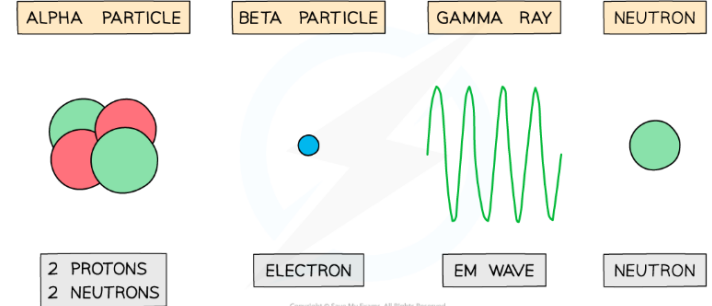
NEUTRON — NEUTRON

Alpha particles, beta particles, gamma waves and neutrons can be emitted from unstable nuclei

Rutherford Scattering Findings

	Finding	Conclusion
A	Most of the alpha particles passed straight through the gold foil	Atoms are mostly empty space
B	A few alpha particles were deflected from their path but continued through the gold foil	The nucleus of the atom has a strong positive charge
C	A small number of alpha particles rebounded	The atoms contains a small, heavy nucleus

Half-life

Half-life is defined as:
The time it takes for the number of nuclei of a sample of radioactive isotopes to decrease by half

ACTIVITY HAS DROPPED BY HALF OF ITS ORIGINAL VALUE → $\frac{A_0}{2}$

ACTIVITY HAS DROPPED BY A QUARTER OF ITS ORIGINAL VALUE → $\frac{A_0}{4}$

ACTIVITY / A, A_0 ... TIME / t ... $t_{1/2}$, $2t_{1/2}$, $3t_{1/2}$

1 HALF-LIFE ... 2 HALF-LIVES
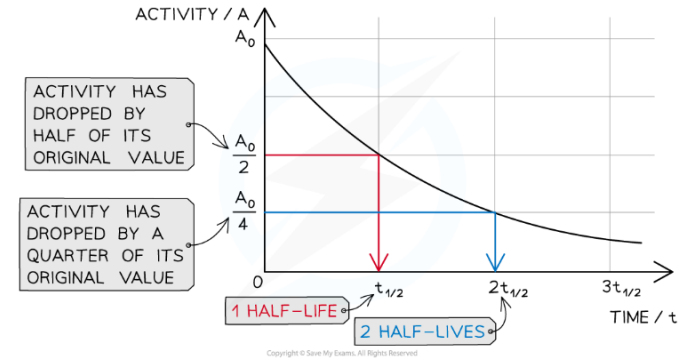
The diagram shows how the activity of a radioactive sample changes over time. Each time the original activity halves, another half-life has passed

Gold Foil Experiment

ATOMS

α–PARTICLES

A, B, C
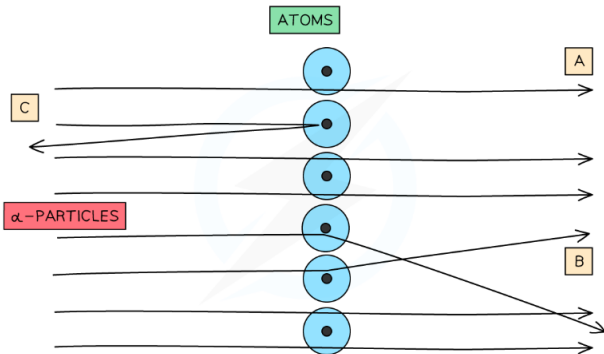
When alpha particles are fired at thin gold foil, most of them go straight through, some are deflected and a very small number bounce straight back

Penetrating Power

ALPHA PARTICLES → (stopped by PAPER)

BETA PARTICLES → (stopped by FEW mm ALUMINIUM)

GAMMA RAYS → (stopped by FEW mm LEAD)
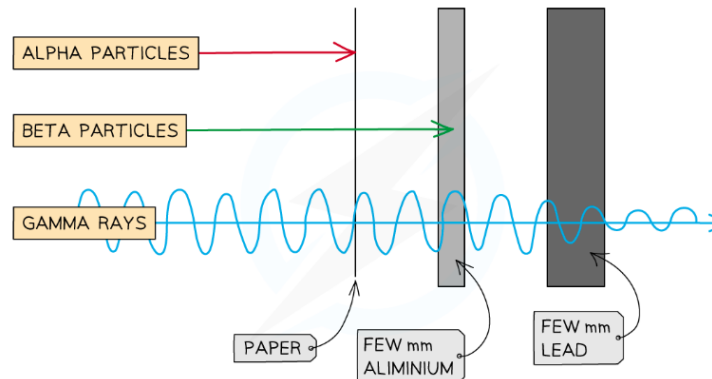
Infectious & non-infectious diseases table

	Definition	Examples
Infectious disease	Disease caused by a pathogen that passes from infected individuals to uninfected individuals Also known as communicable disease	Cholera, HIV/AIDS, malaria, tuberculosis
Non-infectious disease	Long-term diseases that are not caused by pathogens	Lung cancer, cardiovascular disease, depression, cystic fibrosis, vitamin deficiencies
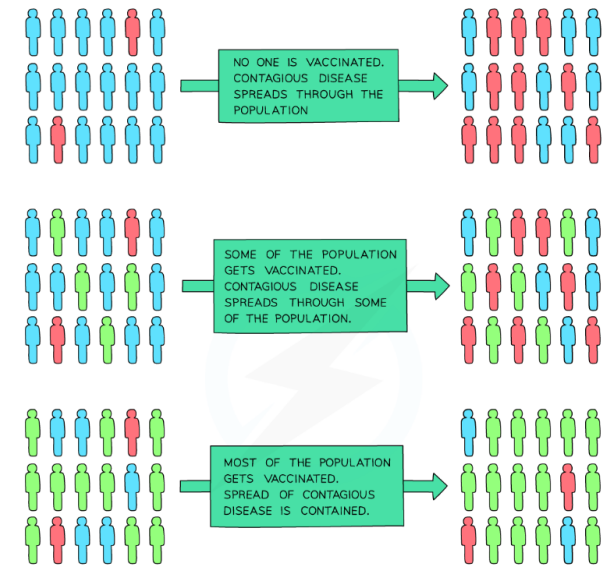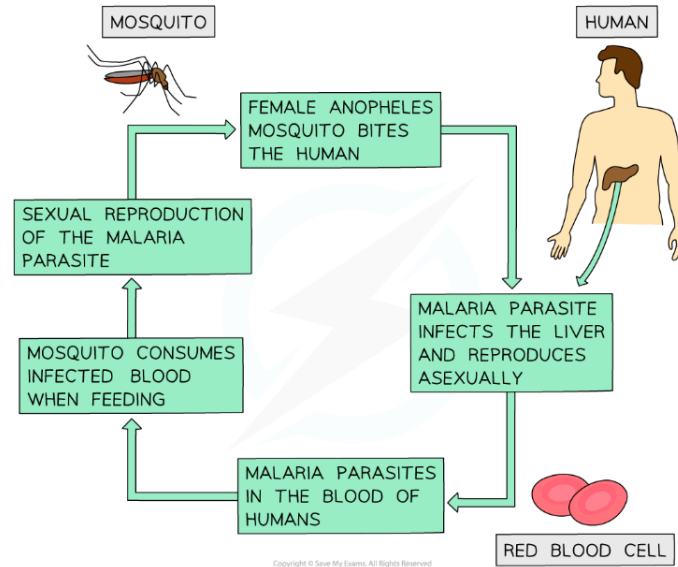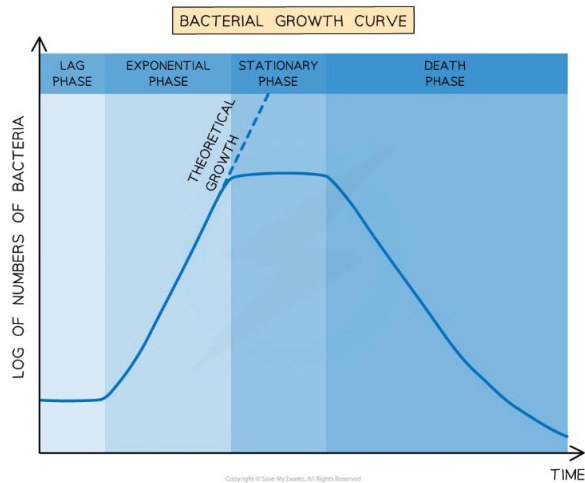
Science Knowledge Organiser

1 HARMLESS PATHOGEN INJECTED
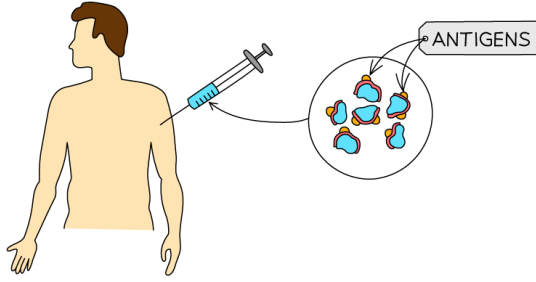
ANTIGENS

2 ANTIGENS TRIGGER AN IMMUNE RESPONSE. IT CAN TAKE DAYS FOR A LYMPHOCYTE MAKING COMPLEMENTARY ANTIBODIES TO BE ACTIVATED
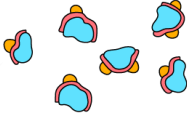
3 LYMPHOCYTE ABLE TO PRODUCE COMPLEMENTARY ANTIBODIES MULTIPLIES, ANTIBODIES RELEASED

SPECIFIC ANTIBODIES
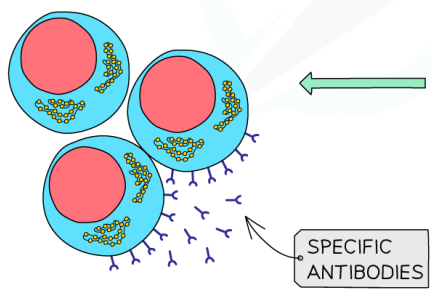
4 MEMORY CELLS (LASTING YEARS) ARE PRODUCED. IF ANTIGEN IS ENCOUNTERED AGAIN, ANTIBODIES ARE PRODUCED MUCH FASTER

= LONG-TERM IMMUNITY

MEMORY CELLS

PENICILLIN

BACTERIAL CELL

CELL RUPTURES AND DIES WHEN IT TRIES TO GROW

LATER

PENICILLIN IS AN ANTIBIOTIC THAT INTERFERES WITH THE BUILDING OF THE BACTERIAL CELL WALL

ANTIGEN

INJECTED INTO

MOUSE

PRODUCES

ANTIBODY

LYMPHOCYTE

FUSED TOGETHER

TUMOR CELL

ENDLESS SUPPLY OF

PRODUCTION OF DESIRED ANTIBODY

HYBRIDOMA

MONOCLONAL ANTIBODIES

ANTIBIOTICS CAUSED U.S. DEATHS TO DECLINE BY ~220 PER 100,000 IN 15 YEARS

SULFA

PENICILLIN

ALL OTHER MEDICAL TECHNOLOGIES REDUCED DEATHS BY ~20 PER 100,000 OVER THE NEXT 45 YEARS

U.S. INFECTION DEATH RATE PER 100,000 POPULATION

300

200

100

0

1940   1960   1980

Science Knowledge Organiser

UPPER EPIDERMIS

LOWER EPIDERMIS

MIDRIB

CHLOROPLAST

VASCULAR BUNDLE (XYLEM + PHLOEM)

AIR SPACE

UPPER EPIDERMIS

PALISADE MESOPHYLL TISSUE

SPONGY MESOPHYLL TISSUE

LOWER EPIDERMIS

GUARD CELL WITH CHLOROPLASTS

THIS IS WHAT WE TYPICALLY THINK OF WHEN WE THINK OF A PLANT CELL, BUT IT'S JUST ONE OF THE TYPES OF CELL FOUND IN A LEAF
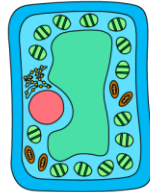
MADE FROM PALISADE MESOPHYLL CELLS

TAKEN UP BY THE ROOTS AND TRANSPORTED THROUGH THE XYLEM TO THE LEAVES

DIFFUSES OUT OF THE LEAF THROUGH THE STOMATA; USED IN RESPIRATION

CARBON DIOXIDE + WATER

LIGHT

CHLOROPHYLL

GLUCOSE + OXYGEN

DIFFUSES INTO THE LEAF THROUGH THE STOMATA

USED TO MAKE SUBSTANCES NEEDED BY THE PLANT; USED IN RESPIRATION TO RELEASE ENERGY
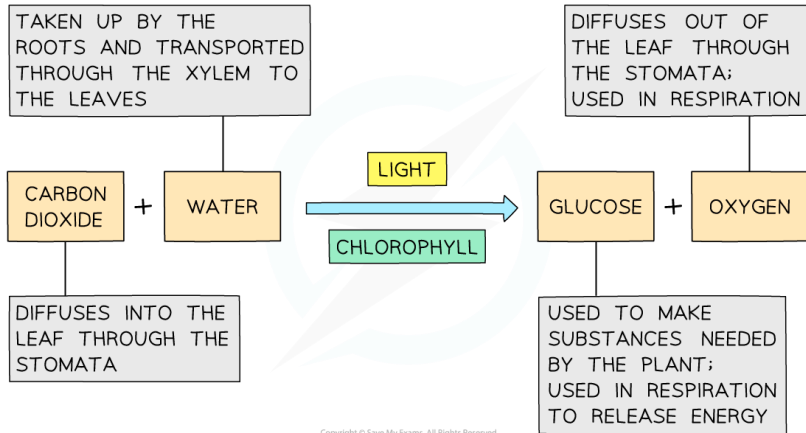
PATHWAY OF CO_2 MOLECULE WHEN LEAF IS PHOTOSYNTHESIS

PALISADE MESOPHYLL
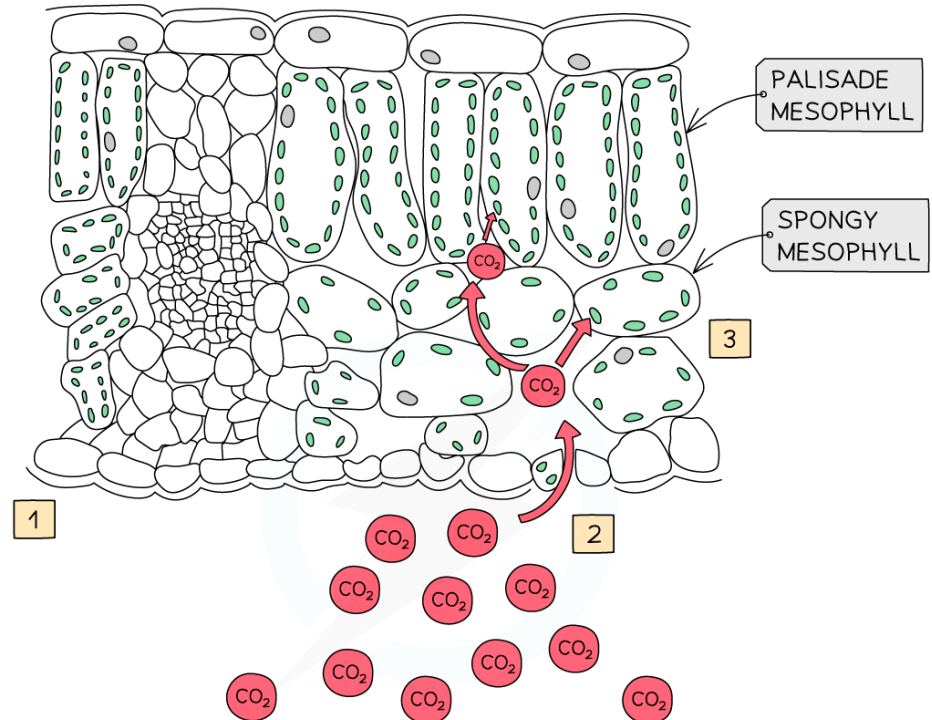
SPONGY MESOPHYLL

1 | HIGHER CONCENTRATION OF CO_2 IN ATMOSPHERE COMPARED TO INSIDE OF LEAF

2 | CO_2 DIFFUSES INTO LEAF THROUGH OPEN STOMA INTO AIR SPACE IN SPONGY MESOPHYLL

3 | CO_2 DIFFUSES THROUGH CELL WALL + CELL MEMBRANE OF MESOPHYLL CELL, DISSOLVES IN CYTOPLASM + DIFFUSES INTO CHLOROPLAST

Computing Personal Learning Checklists

Digital Graphics	S	O	R	T
Understand why digital graphics are used				
Understand how digital graphics are used				
Understand the different uses of colours in images				
Describe the emotions linked to a range of colours				
Explain how different purposes and audiences influence the design and layout of digital graphics.				
Identify target audience requirements				
Understand different composition styles				
Apply composition styles to graphics				
I can add text to a graphic				
I have Identified a wide range of file types and formats				
I can explain the connection between the properties of digital graphics and their suitability for use.				
I can create an interpretation from the client brief which fully meets the client requirements.				
I can identify target audience requirements.				
Produce a visualisation diagram for a digital graphic				
Identify the resources needed to create a digital graphic				
Understand how legislation applies to images used in digital graphics				
Create a graphic based upon a client brief as well as relevant pre-production documents				

GCSE Basics	S	O	R	T
Identify a range of peripherals & describe their purpose				
Understand what an Input & output & storage device is				
Understand the purpose of the CPU				
Understand the factors that affect the performance of the CPU				
Understand the need for primary and secondary storage				
Describe the purpose of RAM and ROM in a computer system				
Define a Wide Area Network & a Local Area Network				
Understand how networks are made and how communication between devices happens on a network.				
Understand forms of attack and threats posed to a network				
Understand the impact on the environment as well as ethical and cultural aspects that computers affect.				
Understand key computational terms				
Understand key searching algorithms				
Understand how data can be sorted into order				
Use a bubble, insertion and merge sort				
To understand what Boolean Logic is				
To understand what logic gates are and how they are used in a CPU				
Understand how denary numbers are represented in binary				
Understand how binary numbers can be added together				
Understand how binary is used in images				

Computing Knowledge Organiser – Digital Graphics

1 TIER THREE VOCABULARY

Term	Definition
Annotate/Annotation	To add notes (text or diagram) by giving comments or explanation.
Assets	The content collected or created for a final product, such as images, sound and video.
Application software	Software for use by users for a specific task
Bitmap (bmp)	An image file format that can be used to create and store computer graphics .
Browser	Computer program that allows users to navigate the World Wide Web.
Client brief	Is a clear statement of the client's business problem that needs solving.
Colour Theory	how colours work together and affect our emotions and perceptions
Composition	how you arrange and place design elements on a page
Copyright Law	Law or legislation that gives the owner of a work the right to say how other people can use it.
Demographics	The traits of a group of people or things
DPI resolution	A property of an image that states how many 'dots per inch' to use. Printing publication normally requires 300dpi whereas web or online publication requires 72dpi.
File	An object on a computer that stores data
File format	Is the structure of a file that tells a program how to display its contents. For example, PDF, JPEG, TIFF, GIF, MP3, WMV
File types	The type of file it is. For example, the graphic file types would be raster and vector.
File properties	The characteristics of a file format.
File naming convention	This refers to a method of naming your files and folders so that it is easily identified for quick access.
Folder	A storage space where many files can be placed into groups and organise the computer. A folder can also contain other folders.
Graphic	Something related to a visual product which may be drawn or produced digitally.
Layer (in graphic design)	Different levels at which one can place an object or image file. In a photo editing program, layers can be stacked, merged, or defined when creating a digital image.

2 Purpose of Graphics

Purpose of Digital Graphics	Definition
To Entertain	Digital graphics are used in entertainment media such as video games, movies, and online videos to create visually appealing and immersive experiences for the audience.
To Inform	Graphics are employed to convey information clearly and effectively, such as in infographics, educational diagrams, and instructional materials.
To Advertise	Used in marketing and advertising campaigns to attract and engage potential customers, highlighting products, services, or brand messages.
To Promote	Graphics are used to promote events, campaigns, and causes, often seen in posters, banners, and social media content aimed at raising awareness and interest.
To Educate	Educational materials often use graphics to aid learning by simplifying complex information and making it more accessible and understandable.

3 Colours

- Excitement Youthful Bold
- Friendly Cheerful Confidence
- Optimism Clarity Warmth
- Trust Dependable Strength
- Peaceful Growth Health
- Creative Imaginitive Wise
- Balance Neutral Calm

4 Resources & Assets

Resources: defined as the computer hardware, equipment, peripherals and software applications needed to create the digital graphic.

Resources can be grouped into:

- **Hardware:** e.g. computer (and Peripheral Devices e.g. scanner)
- **Software:** which image editing software could you use? And another other software
- **People:** who might be involved
- **Materials:** what extra material might need for planning?

Where can you get images from: (why are they suitable

- ❖ **Internet:** need to check pixel dimensions (larger the better)
- ❖ **Photographs:** taken yourself or by others
- ❖ **Scanned images**
- ❖ **Library images** e.g. clipart
- ❖ **Graphics or logos** (maybe given by the client)

Asset: An asset is a convention/image that media producers use to make a media product. A group of assets will make up a full digital graphic - example a CD cover.

Potential Assets - these are images you are planning to use to create the full digital graphic. These could change later

Computing Knowledge Organiser – Digital Graphics

1 — TIER THREE VOCABULARY

Legislation	**A collection of laws such as Copyright Act, Trademark etc.**
Mind map	A diagram to show the development of ideas from one main point into many sub points.
Mood board	Mood boards are physical or digital collages that arrange images, materials, text, and other design elements into a format that's representative of the final design's style
Pixel	A square containing data from an image. The more pixels there are in an image, the sharper and higher the quality of an image.
Pre-production	Process of planning some of the elements involved in a digital media product.
Purpose	What the product is intended to be used for or the reason the product has been made.
Raster	Also known as bitmap graphics which are made up of little squares known as pixels.
Resolution	It is the number of pixels (individual points of colour) contained on a display monitor. The more pixels an image has, the higher the resolution, the bigger the file size of an image.
Resources	Physical things that someone might need to create a graphic
Rule of Thirds	Is when you split an image into nine equal parts.
Symmetry	When elements in your graphic design are arranged in the same way on both sides
Target audience	This refers to a specific group of people to whom your end product is aimed at.
Vector	Type of image that is made up of curves using mathematical calculations. When a vector image is enlarged, the quality is not affected. The file size is usually smaller than a raster.
Visualisation diagrams	A visualisation diagram shows an idea for how a final graphic should look when designed
White space	Unused space of a layout of a graphic design.

4 — Compositions

WHITESPACE

Compositions

Text size
This is important!
This is less important

SYMMETRY
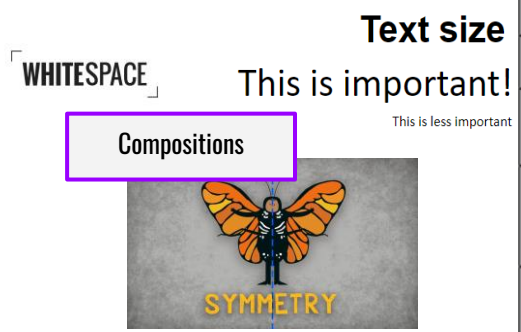
5 — File Types

File format	Name	Properties
.tiff	tagged image file format	Uncompressed format for high quality printing. File sizes are larger due to the format being uncompressed.
.jpg	Joint photographic experts group	can reduce files sizes up to 60% of their normal size. some detail is lost in the compression but this is usually minimal.
.png	Portable Network Graphics	is a raster graphics format that supports lossless data compression. PNG's can be saved with transparent backgrounds.
.bmp	Bitmap	Another popular format like jpg for saving graphics compressed.
.gif	Graphics Interchange Format	Gif's are popular for making animated gif's where you can include many pictures into one file.
.pdf	Portable Document Format	One of the most popular image file formats. Opened in Acrobat Reader and popular with graphic designers because they can be easilty compressed.
.psd	Photoshop Data file	This is used for photoshop and can make bitmaps or vectors. Usually large in size because of the amount of editing information in the file like layers, filters, layer masks etc.

3 — Target audience

DEMOGRAPHICS

- AGE
- INCOME
- SEX
- LOCATION
- OCUPATION
- LEVEL OF EDUCATION
- MARITAL STATUS
- RELIGION
- RACE
- ETHNICITY
- SEXUAL ORIENTATION
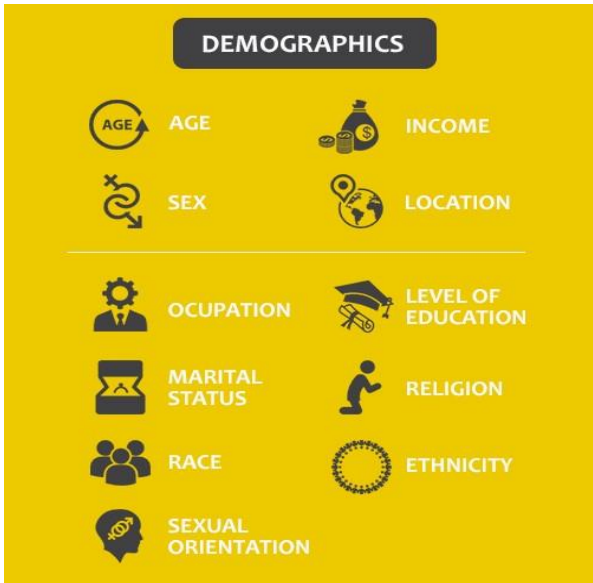
5 — Copyright & Trademarks

COPYRIGHT VS **TRADEMARK**

Protects pieces of works, like Movies, music, and literature, giving creator exclusive rights.

Protects words, phrases, design, or logos that distinguish one brand from another.

Computing Knowledge Organiser – GCSE Basics

1	TIER THREE VOCABULARY
Abstraction	The process of focusing on the essential features while hiding unnecessary details.
Algorithms	Step-by-step sets of instructions used to solve a specific problem or perform a specific task.
Binary system	A number system that uses only two digits, 0 and 1, to represent all values in a computer system.
Boolean logic	A system of logic that uses true and false values, typically represented as 1 and 0, respectively, and logical operators (AND, OR, NOT) to perform logical operations.
Cache Memory	Very fast memory location on the CPU that stores frequently used instructions
Central Processing Unit (CPU)	The main component of a computer responsible for processing data and instructions
Clock speed	The number of FDE cycles a processor can perform in a second
Computational devices	Physical devices, such as computers, smartphones, tablets, or embedded systems, capable of processing and executing instructions.
Computational thinking	A problem-solving approach that involves breaking down complex problems into smaller, manageable parts and using algorithmic thinking to devise solutions.
Computer hardware	The physical components of a computer system, including the CPU, memory, storage devices, input devices, and output devices.
Cultural Implications	Cultural implications refer to the impact and considerations related to the diverse cultural, social, and ethical norms, values, and practices when developing and deploying computer systems
Cybersecurity	Measures and practices designed to protect computer systems, networks, and data from unauthorized access, damage, or theft.
Data representation	The methods and formats used to encode and represent data in a computer system, such as binary, hexadecimal, or ASCII.
Environmental Impact	Environmental impact relates to the consequences and effects of technology on the natural environment.

2 Computer Hardware

System Fan, Video Card, Monitor, Hard Drive, Power Supply, Optical Drive, Motherboard, Processors (CPU), RAM Moduels

3 CPU

Clock speed — Cycles per second measured in hertz

Cache size — Superfast working memory

Number of cores — The number of duplicate processors linked together on a single chip

Fetch the instruction → Decode the instruction → Execute the instruction

4 Primary/Secondary Storage

Primary Storage   Secondary Storage

5 Networks

	WANs	LANs
Area	Wide geographic area	Single building or small geographic area
Ownership	Subscription to outside service provider	Owned by organization

STAR Topology   RING Topology   MESH Topology

6 Network Threats

Virus, Keylogger, Spyware, Worm, Adware, Trojan horse, Rootkit, DoS attack, DDoS attack

Computing Knowledge Organiser – GCSE Basics

1 — TIER THREE VOCABULARY

Term	Definition
Ethical Implications	Ethical implications refer to the potential consequences or considerations regarding the moral principles and values associated with the use, development, and impact of technology.
Input/output devices	Devices that allow users to input data into a computer system (e.g., keyboards, mice) or receive output from the system (e.g., monitors, printers).
Internet	A global network of interconnected networks that allows for communication and information exchange between devices and users worldwide.
Logic` gates	Basic building blocks of digital circuits that perform logical operations, such as AND, OR, and NOT, based on input signals.
Networks	A collection of interconnected devices, such as computers, servers, and routers, that can communicate and share resources with each other.
Pixel	The smallest unit of an image on a television or computer screen
Primary Storage	Primary storage holds data that the CPU can directly access
Problem-solving	The process of identifying, analysing, and solving problems through logical reasoning, critical thinking, and systematic approaches to reach a desired outcome or solution.
Resolution	The number of pixels in an image typically expressed as a horizontal x vertical measurement
Router	A router is a networking device that forwards data packets between computer networks.
Secondary Storage	Permanently holds data, it is non-volatile – it keeps its content when the power is switched off.
Social Engineering	the art of manipulating or 'conning' individuals into giving away private information or login IDs and passwords
Sorting Algorithm	An algorithm that puts elements of a list into an order.
Topology	A network's topology is the arrangement, or pattern, in which all nodes on a network are connected together.

6 — Concerns

Ethical Issues
- Ensuring public safety.
- Cyber bullying.
- Unequal access to materials.
- The Digital divide.
- Virtual Currencies.
- Social pressure to be online and keep up with the latest technology.
- Access to inappropriate / illegal content.

Environmental Issues

Positive	Negative
- Industries such as manufacturing and agriculture are becoming more efficient - Increase in renewable energy options. - Electronic communication reduces the need to travel.	- Extraction of natural resources depletes them. - Electronic components require precious metals - Devices need large amounts of energy - Large amounts of e-waste - People want the latest devices, causing old devices to go to waste

Cultural Issues
- Automation can improve the production process at the cost of jobs
- Technology has allowed jobs to be moved abroad where costs are lower
- Not everyone is proficient with technology
- Not everyone can afford technology
- Internet access may be poor in rural areas

9 — Logic Gates

7 — Searching

Binary Search

Linear Search — Find '20'

8 — Sorting

Bubble sort example

10 — Binary Numbers

Convert the 8 bit binary number 00011010 into denary

128	64	32	16	8	4	2	1
0	0	0	1	1	0	1	0

16 + 8 + 2 = 26

11 — Binary Images

Geography and History Personal Learning Checklists

Geography:	S	O	R	T
Locate the Middle East and label the major countries				
Describe the main physical and human characteristics of the Middle East Region				
Describe the challenges of living in a Hot Desert Climate				
Describe main changes shown on a climograph of the Middle East				
Identify the characteristics of key biomes found in this region				
Define the terms asylum seeker and refugee				
Describe the journey of refugees and asylum seekers from Syria to Europe				
Describe conflict in the Middle East and identify hotspots				
Explain the importance of the Middle East's oil industry to the rest of the World.				
Explain why conflicts can arise over the supply of oil from the Middle East.				
Give reasons for the Syrian refugee crisis				
Explain reasons for conflict in this region				
Explain why we need to consider sustainable energy options for the Middle East				

History:	S	O	R	T
What was the economic boom?				
Why did prohibition fail?				
What was the impact of the Wall Street Crash?				
How far did the lives of African Americans improve?				
How tolerant are Americans?				
What was the impact of McCarthyism?				
Who shot JFK?				
Why did the USA lose the Vietnam War?				

Geography Knowledge Organiser: The Middle East

1	TIER THREE VOCABULARY
Eurocentric	focusing on European culture or history to the exclusion of a wider view of the world; implicitly regarding European culture as pre-eminent.
Climatic zones	areas with distinct climates. These zones might correspond to weather patterns, latitude, or communities of plants and animals.
Climate graph	a graph that shows the average temperature and precipitation for a location over a period of time
Transcontinental region	Extending/joining two or more continents together
Asylum seeker	a person seeking protection from persecution and serious human rights violations in another country
Refugee	someone who has been forced to flee his or her country because of persecution, war or violence.
Allies	combine or unite a resource or commodity with (another) for mutual benefit. To side with or support.
Conflict	an active disagreement between people with opposing opinions or principles
Fossil Fuels	non-renewable energy sources that are formed from the remains of plants and animals that lived millions of years ago
Non-renewable energy	energy that comes from sources that will run out or cannot be replenished within a human lifetime

2 | The Middle East

Meeting the needs of the present without compromising the ability of future generations to meet their own needs

Global climatic zones
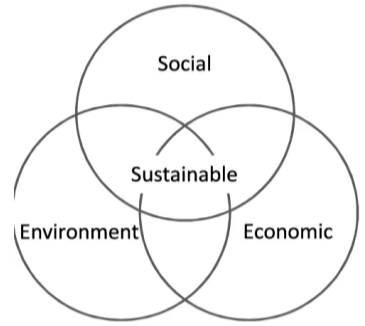
- Polar
- Temperate
- Arid
- Tropical
- Mediterranean
- Mountains
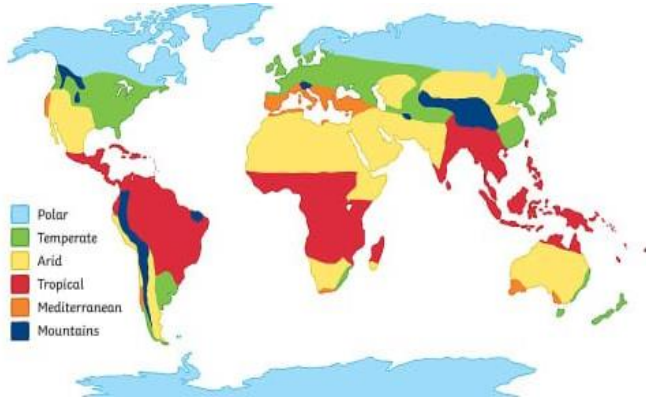
Conflict in Syria

Syria's conflict by the numbers

Since the conflict began in 2011, 210,000 confirmed deaths

Economic loss of approximately $202.6bn

Unemployment has jumped from 15% to 58% between 2010 – 14

51% of Syrian children did not attend school this academic year

840,000 people have been wounded

3.9 million registered refugees, second largest refugee population in the world

Total dead/wounded accounts for 6% of the population

4 out of 5 Syrians live below the poverty line

Life expectancy has dropped from 75.9 to 55.7 across a 4 year period (2010 – 14)

Geography Knowledge Organiser: Newquay & Retailing

Very Urban CBD (Highstreet) → Inner City (LQ Housing/ Old Industry) → Suburbs (MQ/HQ Housing) → Rural-Urban Fringe (Industry, O.O.T. Retail) → Greenbelt → Commuter/Dormitory Village → Accessible Rural → Remote Rural (Deep Green)

1 — TIER THREE VOCABULARY

Urban-rural continuum	A sliding scale with urban areas (cities) at one end and remote rural areas (countryside) at the other.
Sphere of influence	The area affected by a place or event. Effects can be good or bad.
Threshold Population	The minimum number of people needed to support a retail outlet or service.
Clone Town	Where the High Street or other major shopping areas are significantly dominated by **chain stores** (brand names), rather than **independent stores** (local shops).
Hierarchy	The rank order of places (according to population/importance) from hamlets to cities.
Infrastructure	Transport links such as roads, bus services, railways, airports and public utilities e.g. electricity, water supplies etc
Egan's wheel	Eight features of a community which can be used to decide how sustainable the community might be.
Teleworking	Working from home using technologies such as phones and the internet to communicate with a central workplace/office.
Primary data	Data that you collect yourself e.g. traffic survey
Secondary data	Data from other sources e.g. census data
Tourist Town (Honeypot)	A town or city which receives many holiday makers and has retail and services for tourists.

2 — Eagen's wheel

3 — Enquiry process

Trend
Evidence
Anomaly

4 — The Multiplier effect of Tourism

4 — Sphere of Influence

Low Order Goods/Services	High order Goods/Services
Buy/visit frequently, Cheap, Travel a short distance, Convenience Newspaper, Milk, Bread, Weekly shop, Post Office	Rarely buy/visit, Expensive, Travel far, Comparison, Furniture, Electricals, University, Major Hospital, Airport
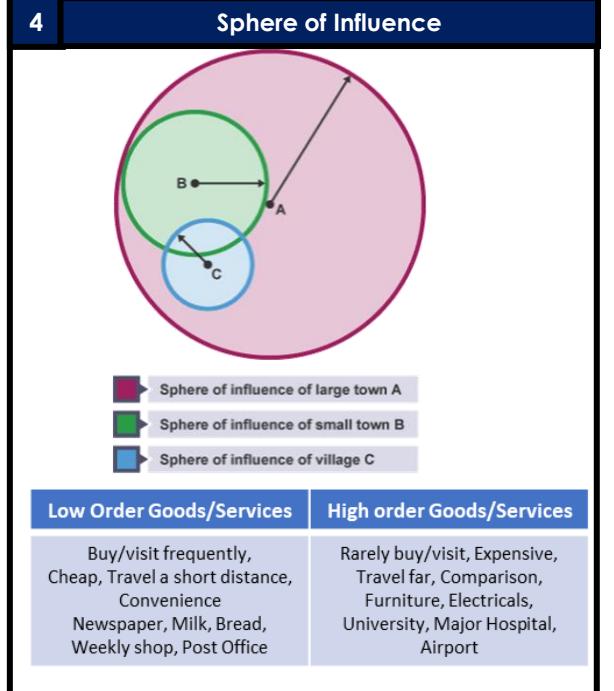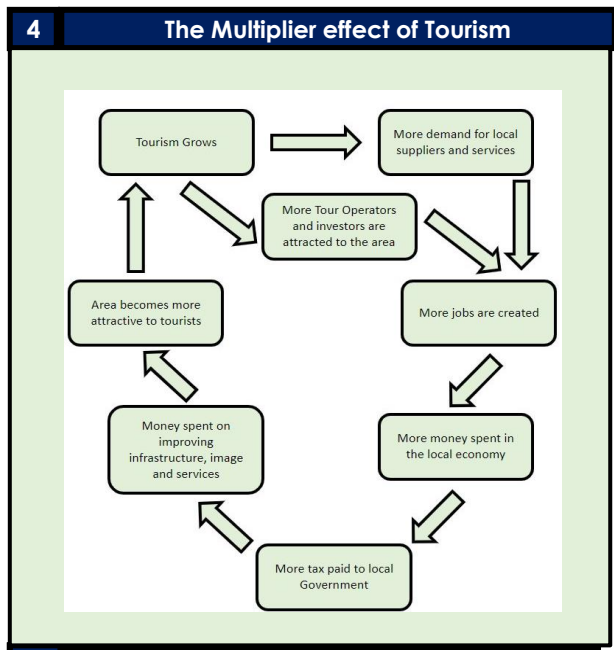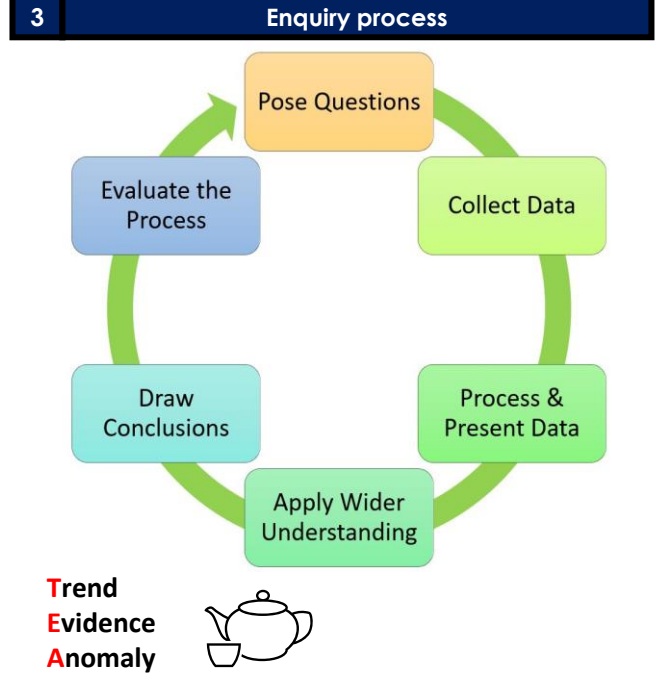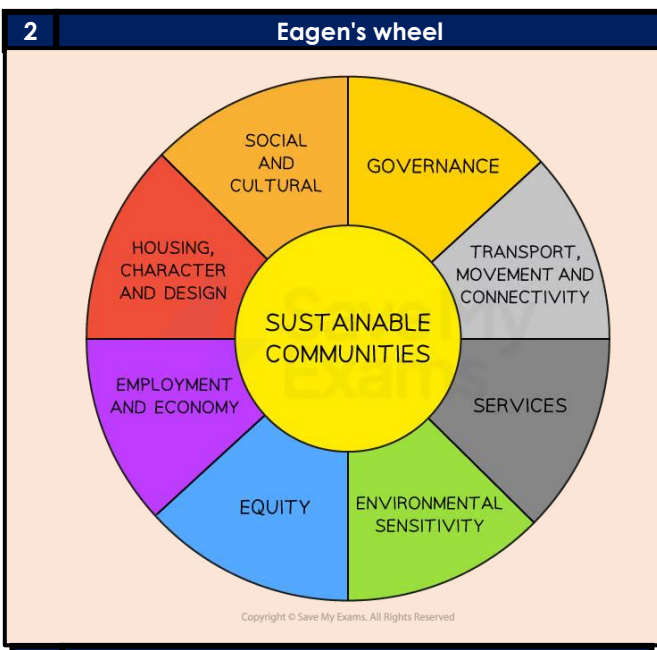
History Knowledge Organiser

1	TIER THREE VOCABULARY
Roaring Twenties	A decade of economic growth and cultural change in the U.S. during the 1920s, characterized by prosperity and technological advancements.
Prohibition	A period from 1920 to 1933 when the production, sale, and transportation of alcoholic beverages were banned in the United States.
Speakeasy	An illegal bar where alcohol was sold during Prohibition.
Bootlegging	The illegal production and distribution of alcohol during Prohibition.
Wall Street Crash	The sudden and severe stock market crash in October 1929 that marked the start of the Great Depression.
Great Depression	A decade-long period of severe economic hardship and high unemployment that began with the Wall Street Crash.
New Deal	A series of government programs and reforms introduced by President Franklin D. Roosevelt to help the U.S. recover from the Great Depression.
McCarthyism	The practice of making unfounded accusations of disloyalty or communism, led by Senator Joseph McCarthy in the early 1950s.
Red Scare	The fear of communism spreading in the United States, particularly during the early Cold War period.
Harlem Renaissance	A cultural movement in the 1920s that celebrated African American art, music, and literature, centered in Harlem, New York.
Great Migration	The movement of millions of African Americans from the rural South to northern cities between 1916 and 1970 in search of better opportunities and to escape racial discrimination.
Civil Rights Movement	A struggle for social justice in the 1950s and 1960s to end racial segregation and discrimination against African Americans.

CITY EDITION **London Herald** LATE PRICES

FRIDAY 25th OCTOBER 1929

WALL STREET CRASH!

Black Thursday in America

Stocks Plunge and Eleven Commit Suicide

Websites
The USA, 1919-1948 - GCSE History - BBC Bitesize

Books

Of Mice and Men – John Steinbeck

Documentaries (YouTube)
The Century: Americas Time

History Knowledge Organiser

Montgomery Bus Boycott	A civil rights protest in 1955-1956 where African Americans in Montgomery, Alabama, refused to ride city buses to protest segregated seating.
Suburbanization	The movement of people from cities to suburban areas, which became especially common in the 1950s.
Domestic Ideal	The 1950s cultural ideal that emphasized women's roles as homemakers and mothers.
Rock 'n' Roll	A genre of music that became popular in the 1950s, known for its strong beat and rebellious themes, appealing especially to teenagers.
Consumerism	The culture of buying and using goods and services, which became particularly prominent in the 1950s.
Bay of Pigs	The failed 1961 invasion of Cuba by Cuban exiles, supported by the U.S., in an attempt to overthrow Fidel Castro.
Vietnam War	A prolonged conflict from 1955 to 1975 between communist North Vietnam, supported by its communist allies, and South Vietnam, backed by the United States, ending with the withdrawal of U.S. forces and the unification of Vietnam under communist control.
Ho Chi Minh Trail	A network of jungle paths used by North Vietnamese forces to transport supplies and troops during the Vietnam War.
Napalm	A highly flammable sticky jelly used in incendiary bombs and flamethrowers, used extensively during the Vietnam War.
Rolling Thunder	A sustained bombing campaign against North Vietnam by the U.S. during the Vietnam War, starting in 1965.
Booby Traps	Hidden explosive devices or traps designed to cause injury or death, used extensively by both sides in the Vietnam War.
Fidel Castro	The communist leader of Cuba who came to power in 1959 and was a central figure during the Bay of Pigs invasion and the Cuban Missile Crisis.

Websites
The USA, 1919-1948 - GCSE History - BBC Bitesize

Books

One Minute to Midnight – Michael Dobbs

Documentaries (YouTube)
The Century: Americas Time

French Personal Learning Checklists

A l'horizon (Work and careers)	S	O	R	T
Discuss future plans and ambitions using the near future tense				
Form and use the simple future				
Use future expressions and si clauses to talk about future plans				
Talk about languages and travel.				
Discuss why it is important to learn a language				
discuss options.				
List a range of jobs (masculine/feminine nouns)				
Describe a typical day at work in the present tense				
Use common iirregular verbs in the present tense				
Say what you did yesterday at work using the past tense				
Describe my strengths by remembering character adjectives				
Use the conditional tense to say what job I would like to do in the future				
Translate sentences using vocabulary from this topic				
Write a 90 words piece based on the 'Work and Careers' topic				
Talk about carnival in France and French-speaking countries				
USE YOUR VOCAB BOOKLET TO SORT YOUR LEARNING				

Mon job d'été (My Summer Job)	S	O	R	T
Talk about part-time jobs and pocket money.				
Explain how you help at home.				
Use modal verbs (devoir, vouloir)				
Talk about earning money.				
Say what you spend my money on.				
Apply for a summer job in France.				
Apply for a local job in cafes/campsite.				
Write a CV.				
Use the perfect tense to talk about previous jobs				
Revise how to give personal information.				
Talk about school achievements (revision).				
Use formal language to write a letter of application				
Use negatives				
Take part in a job interview (roleplay)				
Talk about 'le poisson d'avril'				
USE YOUR VOCAB BOOKLET TO SORT YOUR LEARNING				

Spanish Personal Learning Checklists

El Trabajo (Work and Careers)	S	O	R	T
Talk about new year's resolutions using the near future tense				
Talk about my future using the near future tense				
Form and use the simple future				
Use future expressions and si clauses to talk about future plans				
Talk about why languages are important				
List a range of jobs (masculine and feminine nouns)				
Use the conditional tense to say what job I would like to do in the future				
Describe my strengths by remembering character adjectives				
Describe a typical workday in the present tense				
Translate sentences using vocabulary from this topic				
Use lo+adjective				
Write 90 words about work and careers				
Describe a photo about jobs				
Perform a role play about work				
Talk about how carnaval is celebrated in spanish speaking countries				
Use your vocab booklet to sort your learning				

Un Trabajo de Verano (A Summer job)	S	O	R	T
List a range of part-time jobs				
Describe what I do to help at home				
Use se debe / tengo que				
Use negatives				
Talk about earning money				
Explain how much money I receive for my job/pocket money				
Talk about what I spend my money on				
Apply for a summer job in spain/locally				
Write a CV				
Revise personal information and talk about achievements				
Use formal language to write a letter of application				
Understand how to form the perfect tense				
Use phrases to take part in a job interview				
Give information about semana santa in spain and spanish-speaking countries				
Give information about la feria de abril				
Use your vocab booklet to sort your learning				

Music and REP Personal Learning Checklists

Music Baroque Elegance Pachelbel's Canon	S	O	R	T
Identify Baroque instrumentation				
Identify and perform a ground bass line				
Identify at sight and aurally recognise block chords and broken chords				
Perform and maintain my part in a class ensemble				
Identify/demonstrate a conjunct/disjunct melody				
Identify and demonstrate the following textures: Monophonic, Homophonic, Polyphonic				
Create a new arrangement of Pachelbel Canon featuring a range of given melodies				
Extension: compose/improvise new melodies over the given ground bass				
GROUP TASK: Rehearse and perform an arrangement over the ground bass as an ensemble group featuring a range of timbres, textures and melodies.				

REP Spirituality in Cornwall	S	O	R	T
Explain what a Pantheon is				
State the name and roles of Pagan deities				
Explain the role of pre-Christian beliefs in Cornish culture				
Give three examples of Cornish folklore festivals				
Retell two of the Cornish folktales				
State 5 features of the story of St. Piran				
Know what the Cornish flag is and what it represents				
Understand what a Saint is and why there are so many Saints in Cornwall				
Explain the cultural and spiritual relationship between Cornwall and King Arthur				
Describe Who John Wesley is and what he contributed to Christianity in Cornwall				
Describe some of the key features of Truro Cathedral				
Describe the history and purpose of Truro Cathedral				

Baroque Elegance

1600 -1750

Pachelbel's Canon

Glossary	
The Baroque Period	A period of Music dating roughly from 1600 to 1750
Ground Bass	A bass line which is repeated over and over again throughout a piece of music
Variations	Melodies which constantly change and develop each time they are heard, adding interest to the music
Polyphonic	A textural device meaning many sounds being played at once
Canon	Another word for a round. Several instruments play the same part entering in sequence
Harpsichord	A keyboard musical instrument in which strings are plucked instead of hammered. It was one of the most important keyboard instruments in European music from the 16th through the first half of the 18th century
String Quartet	A musical ensemble made up of 4 string instruments. Most commonly violin, viola, cello and double bass

Further Baroque Listening

Handel – *Messiah*

Bach – *Brandenburg Concerto No.5*

Vivaldi – *Four Seasons*

The Ground Bass line played in Pachelbel's Canon

C   G   A   E   F   C   F   G

REP Knowledge Organiser – Spirituality in Cornwall

Lesson 1 – What does it mean to be Cornish?

Neolithic – final stage of the stone age where permanent settlements began to be established

Megalith – a neolithic stone monument, often a large stone placed upright in a pattern or as a marker (Stone Henge is an example of a megalith)

National Census – a once-in-a-decade survey that informs the government of the socio-economic structure of the country. The last census was in 2021

Devolution – giving regions such as Cornwall more say in local policies and how government funding is distributed.

Lesson 2 - Paganism

Paganism – a collective term for belief systems that focus on nature worship. Paganism had and continues to have a strong presence in Cornwall

Samhein Festival – the pre-Christian version of Halloween which marks the end of the harvest around the time of the Autumnal equinox

Town Pellar - A local Cornish term for the 'village witch'. The Town Pellar was a practitioner of natural medicines and remedies that people would go to before modern medicine was invented. The Town Pellar is still a profession today.

Lesson 3 - Cornish Myths and Legends

Folklore – traditional beliefs and practices done by people in a specific region

Folktale – a traditional story told by people from a specific area. The story will often have geographical or chronological importance.

Mythology – A narrative told to entertain but also to convey understanding of an idea or concept

Lesson 4 - St. Piran

Saint – a virtuous or Holy person who has performed service in aid of Christianity. Saints are elevated to heaven before Judgement Day and can be prayed to or asked for help in the form of guidance or miracles.

Beatification – the first act of a person becoming a saint. This usually takes place after death but not always.

Canonisation – the declaration by the Pope that a person is now recognised as a Saint.

Proselytising – The act of preaching the word of God to people in an effort to convert them to Christianity

Lesson 5 - Methodism

John Wesley – An 18th Century Christian theologian and cleric who established Methodism

Methodism - a simpler form of Christianity that focuses on the words of Jesus and avoids traditionally complicated and confusing religious rituals.

Lesson 6 – Truro Cathedral

Cathedral – a Church with a Cathedra (throne) – the formal seat of a Bishop.

Bishop – a senior priest within the church who oversees a diocese (large number of parishes) and is responsible for running the Church

Parish – a local area attended to by a priest.

Art Personal Learning Checklists

Art Portrait Print	Evidenced	Refined
I am building on my prior knowledge of…..		
Analysing artists' styles to influence my own work.		
How to use secondary sources to develop ideas.		
Collage skills to create backgrounds.		
How to use compositional skills to present outcomes effectively.		
I am developing my skills in…..		
Sketchbook presentation and artist studies.		
Exploring Lino cutting and printing techniques.		
Producing a series of creative outcomes using experimental backgrounds.		
How to present work through critical selection.		

Art Pop Art Text	Evidenced	Refined
I am building on my prior knowledge of…..		
Analysing artists' styles to influence my own work		
Using secondary sources to develop ideas		
Drawing for design purposes		
Compositional skills		
Understanding Proportion		
I am developing my skills in…..		
Exploring text and typeface		
Problem solving		
Creating a personal outcome linked to a positive message		
Use of colour, pattern, layers in a Pop Art style		
Cutting skills to produce stencils- understanding of bridges		
Use of registration to layer stencils successfully		

Art Knowledge Organiser

1	TIER THREE VOCABULARY
Analyse	Analyse - examine (something) methodically and in detail, typically in order to explain and interpret it.
Composition	Composition is the arrangement of elements within a work of art.
Contemporary Art	The term contemporary art is loosely used to refer to art of the present day and of the relatively recent past, of an innovatory or avant-garde nature
Designs	Designs are plans to explain your ideas in a visual way.
Expression	Expression is something that expresses or communicates ideas or feelings.
German Expressionism	German Expressionism was an early twentieth century German art movement that emphasized the artist's inner feelings or ideas over replicating reality, and was characterised by simplified shapes, bright colours and gestural marks or brushstrokes
Influence	Influence is to be inspired by the style of art styles and movements.
Linocut	A linocut is a relief print produced in a manner similar to a woodcut but that uses linoleum as the surface into which the design is cut and printed from
Medium	Medium can refer to both to the type of art (e.g. painting, sculpture, printmaking), as well as the materials an artwork is made from

Front cover- best image and title.

Explore colour & triangle corners.

Ripped papers and strips of paper to add borders.

Match colours and mount.

Rip and layer prints.

Presentation Ideas

Background ideas
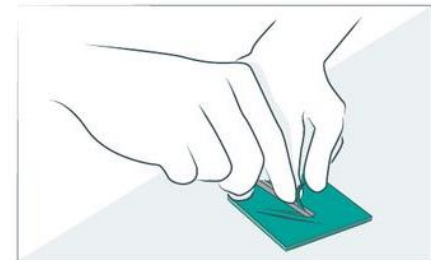
LINOLEUM BLOCK SAFETY

Follow these five tips to safely cut a linoleum block for printmaking.

1. Push the blade away from your body when carving.
2. Never put your hand on the other side of the blade.
3. Let your hand glide along the surface instead of pushing down.
4. Store unused blades properly.
5. Put away each blade after it is being used.

Lino Printing process:

Collect the following:

2 x rollers

Sheet of newspaper

Your lino

Wooden spoon

Sheet of acetate

Ink

Roll out a small square of ink on your acetate.

Dip into your line of ink.

Roll in all directions.

Don't roll to the edges.

Listen for the swooshing sound and look for the little waves in the light

47

Art Knowledge Organiser

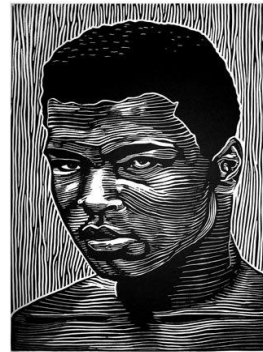| 1 Continued	TIER THREE VOCABULARY
Mood	Mood – the general atmosphere, or state of mind and feelings, that a work of art generates. For example, the mood of a painting could be disturbing or tranquil, dark or energetic.
Portrait	Portrait - A portrait is a representation of a particular person. A self-portrait is a portrait of the artist by the artist
Printmaking	Printmaking - A print is an impression made by any method involving transfer from one surface to another
Proportion	Proportion - Proportion is the relationship of one part of a whole to other parts
Refine	Refine – to improve your artwork
Tone	Tone - The lightness or darkness of something – this could be a shade, or how dark or light a colour appears
Mixed media	Mixed media is a term used to describe artworks composed from a combination of different media or materials
Monochromatic	Monochromatic - containing or using only one colour.
Woodcut	Woodcut is a method of relief printing from a block of wood cut along the grain.
Expression	Expression is something that expresses or communicates ideas or feelings.

4 Artists- Contemporary and Historical Printmakers

German Expressionists.   Larry Winston Collins.   Natalia Moroz   Alex Binnie
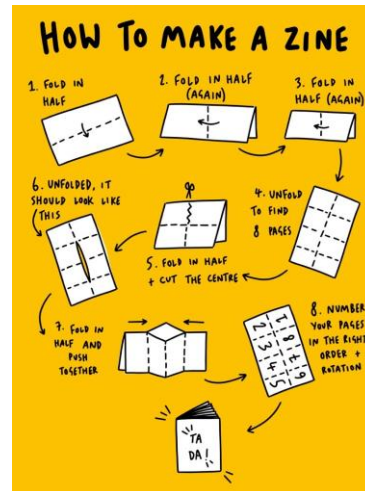
5 Extension Task

Create a zine with your spare prints. Use the Tate link to help you, add drawings, artist images and information. Be experimental exploring colour and presentation techniques.

6 LINKS & FURTHER READING

Explore how to make a zine as an alternative presentation technique.

Explore the importance of outcome presentation through BBC Bitesize at GCSE

Art Knowledge Organiser

1	TIER THREE VOCABULARY
Analyse	Analyse - examine (something) methodically and in detail, typically in order to explain and interpret it.
Composition	Composition is the arrangement of elements within a work of art.
Contemporary Art	The term contemporary art is loosely used to refer to art of the present day and of the relatively recent past, of an innovatory or avant-garde nature
Designs	Designs are plans to explain your ideas in a visual way.
Expression	Expression is something that expresses or communicates ideas or feelings.
Pop Art	Pop art is an art movement that emerged in the 1950s and flourished in the 1960s in America and Britain, drawing inspiration from sources in popular and commercial culture. Different cultures and countries contributed to the movement during the 1960s and 70s
Influence	Influence is to be inspired by the style of art styles and movements.
Digital art	Digital art is a term used to describe art that is made or presented using digital technology
Medium	Medium can refer to both to the type of art (e.g. painting, sculpture, printmaking), as well as the materials an artwork is made from
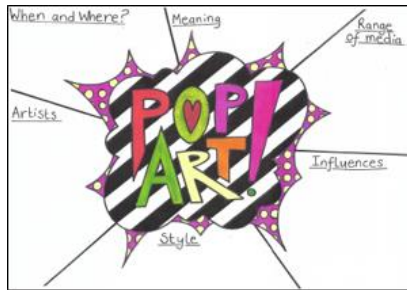
Explore Pop Art and analyse.

Design and Experiment.

Create and use stencils.

3   Health and Safety

CRAFT KNIFE SAFETY

1. Keep knife blades sharp.
2. Only use a knife for its intended purpose.
3. Use the appropriate knife for the job.
4. Don't cut toward your fingers with the sharp edge.
5. Always use a cutting mat.
6. Cut away from your body.
7. Point the knife blade down and keep the cap or cover on the knife when carrying.
8. To hand a knife to someone, set it down on a table and let them pick it up.
9. Properly dispose of old cutting blades.
10. Store the knife properly.

Typeface and Fonts:
Understand the difference and explore within your own work when creating design work.

Art Knowledge Organiser

1 Continued	TIER THREE VOCABULARY
Ben-Day dots	A commercial printing technique using small dots of colour, named after 19th-century illustrator and printer Benjamin Henry Day. American artist Roy Lichtenstein, enlarged and exaggerated them in many of his paintings and sculptures. Other illustrators and graphic designers have used enlarged Ben-Day dots in print media for a similar effect.
Font	A font is the combination of typeface, size, weight, slope, and style to make up a printable or displayable set of characters. Font characters include letters, numbers, symbols, and punctuation marks. Fonts because can affect readability, influence tone, and reflect professionalism all of which will influence how ideas are communicated
Primary Colours	The primary colours are **red**, **yellow** and **blue.** They cannot be made by mixing other colours together. The primary colours sit equal distances apart on the colour wheel.
Refine	to improve your artwork
Typeface	Typeface describes an entire typography family. For example, Times New Roman is a typeface that defines the shape of each character. Within Times New Roman, however, there are many fonts to choose from, such as different sizes, italic, bold, and so on.
Mixed media	Mixed media is a term used to describe artworks composed from a combination of different media or materials

4 Artists- Contemporary and Historical
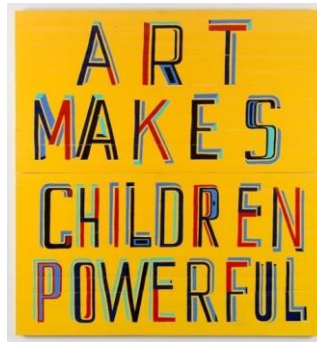

Richard Hamilton

Andy Warhol

Roy Lichtenstein

Bob & Roberta Smith

5 Extension Task

Using the further reading link explore the work of Bob and Roberta Smith more and create a powerful message poster.

6 LINKS & FURTHER READING

Explore making a protest poster-exploring different text artists.

Explore Pop Art further and create a piece of work in the style of Andy Warhol.

DT Personal Learning Checklists

Food: Meal Planning	S	O	R	T
I understand what meal planning is and what affects meal choice				
I can follow instructions / read a recipe independently				
I have a basic knowledge of nutrition and how to eat healthily				
I can plan my time well to complete tasks on time				
I can explain why I have chosen a dish or ingredient				
I can evaluate my work identifying my strengths and weaknesses.				

Textiles: Patchwork Cushion	S	O	R	T
I can identify and analyse styles of patchwork and the way it has developed				
I will understand & demonstrate how to join fabrics accurately using the sewing machine				
I am able to work to scale and ensure the pattern planned has impact and symmetry				
I understand the importance of precision with cutting and how to use tools to ensure a professional finish				
I am able to use a variety of construction techniques independently				

DT		S	O	R	T
Key Idea: Identifying a design problem and carrying out relevant research	Analysing the context to establish a problem, justified by research				
	Analysing products using the ACCESSFM approach				
	Examples of primary and secondary research and the advantages and disadvantages of each				
	Working properties of materials and choosing the right material for a product				
	Understand the origin of plastics, sustainability, the difference between renewable and non-renewable materials				
Key Idea: Generating design ideas using the iterative design process and developing ideas through the use of modelling	Generating imaginative ideas using 2D drawing techniques				
	Annotating ideas to explain opinion, materials, construction methods and target market opinion				
	Using compliant materials to model the most successful idea				
	Understanding scale and being able to produce a working drawing of the developed design idea				
	Be able to dimension a drawing to show the key measurements				
Key Idea: Developing practical skills to make quality products which are commercially viable	Using marking out tools to accurately mark out the key components of the product				
	Using cutting tools to accurately cut the key components of the product				
	Using shaping tools to accurately finish components to correct dimension				
	Assembling the product using permanent and non-permanent joining methods				
	Understand the reasons for and be able to apply a high-quality surface finish				

DT Knowledge Organiser: Food Meal Planning

Key Terms	Description
Allergies	When a person's immune system reacts strongly to certain foods causing symptoms like difficulty in breathing, swelling or hives
Ethical	Relating to moral principles
Cultural	Relating to the ideas, customs, and social behaviour of a society.
Vegan	A strict vegetarian who consumes no food that comes from animals. (such as meat, eggs, or dairy products)
Budget	How much money you have to spend on certain items- eg food
Cross Contamination	Transfer of bacteria from one source to another. Use of different coloured chopping boards.

Skills	Use in the lesson
Knife skills	Use of bridge and claw holds for safe cutting.
Sauce making	Reduction method to thicken curry sauce
Whisking	Making a swiss roll rise by aeration of the eggs and sugar.
Folding in	Gently mixing the flour into the mix without bursting air bubbles.
Presentation skills	Improving how the food looks- adding colour.
Safe use of meat	Safe storage and cooking.

Plan and make task in preparation for KS4 Hospitality and Catering Suitable menu choice, justification for choices, planning the practical session, producing the dishes, evaluation.

DT Knowledge Organiser: Textiles

Techniques	Explanation
Templates	Made with squared paper for accuracy and used to cut the fabrics
Pins	Used to hold the template to the fabric for cutting
Fabric shears	Used to cut through the layers of fabric, usually 2 to save time
Sewing machine	A straight stitch used to create stable and straight seams
Seam	Usually sewn with a 10mm allowance so accuracy is maintained
Hem	A neatly finished visible edge

DT Knowledge Organiser

1. Research sources

Primary research sources:
- Interviews
- Questionnaires
- Surveys
- Focus groups
- Case studies
- User observations
- Product testing and trials

Advantages
- Data is up to date and relevant
- Questions and surveys can be tailored to specific needs

Disadvantages
- A large number of people are needed
- Data gathering is time consuming

Secondary research sources:
- Government data
- Articles from books, magazines and the internet
- Company reports
- Exemplar work from others

Advantages
- Data is already collated and available
- Data may be free or low cost
- Huge amount of research is available and accessible

Disadvantages
- Data may not be up to date
- Data may not be specific to company needs
- Data is available for all

2. Product analysis

We use **ACCESS FM** to help us write a **specification** - a list of requirements for a design - and to help us **analyse and describe** an already existing product.

ACCESS FM - Helpsheet

A is for **Aesthetics**
Aesthetics means **what does the product look like?**
What is the: Colour? Shape? Texture? Pattern? Appearance? Feel? Weight? Style?

C is for **Cost**
Cost means **how much does the product cost to buy?**
How much does it: Cost to buy? Cost to make?
How much do the different materials cost? Is it good value?

C is for **Customer**
Customer means **who will buy or use your product?**
Who will buy your product? Who will use your product?
What is their: Age? Gender?
What are their: Likes? Dislikes? Needs? Preferences?

E is for **Environment**
Environment means **will the product affect the environment?**
Is the product: Recyclable? Reuseable? Repairable? Sustainable?
Environmentally friendly? Bad for the environment?
6R's of Design: Recycle / Reuse / Repair / Rethink / Reduce / Refuse

S is for **Size**
Size means **how big or small is the product?**
What is the size of the product in millimeters (mm)? Is this the same size as similar products? Is it comfortable to use? Does it fit?
Would it be improved if it was bigger or smaller?

S is for **Safety**
Safety means **how safe is the product when it is used?**
Will it be safe for the customer to use? Could they hurt themselves?
What's the correct and safest way to use the product? What are the risks?

F is for **Function**
Function means **how does the product work?**
What is the products job and role? What is it needed for? How well does it work? How could it be improved? Why is it used this way?

M is for **Material**
Material means **what is the product made out of?**
What materials is the product made from? Why were these materials used? Would a different material be better? How was the product made? What manufacturing techniques were used?

3. Working properties and tier 3 vocabulary

Definition	Property	Examples
The ability of a material to be stretched or drawn or pulled without breaking.	Ductility	Copper because it can be drawn out to make wire.
The ability to return to its original shape after stretching or compression.	Elasticity	Lycra is used for sportswear to provide freedom of movement.
The ability to withstand impact, wear, abrasion and indentation.	Hardness	Tungsten, used for knives, drills and saws.
The ability to be bent and shaped without cracking or splitting.	Malleability	Gold, copper, silver and lead can all be easily hammered into shape.
The ability to withstand a force such as pressure, compression, tension or shear.	Strength	May be strong in one force and not another. Concrete is strong under compression, but not tension.
The ability to absorb shock without fracturing	Toughness	Kevlar body armour absorbs impact.

4. The age of plastic

For more than 50 years, the global production and consumption of plastic has continued to rise. Approximately 300 million tons of plastic is produced each year, plastic is relatively inexpensive to produce and very versatile.

What are polymers?
Polymers are mostly synthetic materials. They are usually derived from finite resources such as coal, natural gas or crude oil. More renewable and sustainable materials such as vegetable starches are being used to make bio-plastics.

Renewable and non-renewable materials
Materials which can be 'grown' are classed as renewable. This includes timber and paper. It also includes materials which are derived from animals such as wool and leather as we can grow more animals. Non-renewable materials are materials which cannot be recreated in the human life-time. Examples are metals and plastics. Energy sources such as oil, coal and gas are also non-renewable.

Drama Personal Learning Checklists

Drama Blood Brothers	S	O	R	T
I can describe the plot, characters and themes of this GCSE text				
I can describe the class system in Britain through the exploration of complrehensive and private education				
I can apply theatrical skills to show character status in performance				
I can block a duologue/group performance to create meaning for an audience				
Performing/Directing a text	S	O	R	T
I will understand the plot of a set text				
I have an understanding of at least one key character in the play				
I will have blocked a key scene with a partner/in a group				
I have worked with a director to show that I understand how to respond to feedback				

David Cooper_2011

David Cooper_2011

Facts about Willy Russell The Playwright

•**British playwright**
•**Born in 1947**
•**Brought up near Liverpool**
•**Working class parents**
•**Troubled up bringing**

One of the playwright's aims is to show us that there are disadvantages to being poor and working class.

The failure to succeed in life is not because of a lack of ability, but a lack of opportunity. This can clearly be seen in Edward and Mickey.

We must ask ourselves whether this is still true in the 21st century.

Drama Key Vocabulary

DRAMA KEY WORDS		ADJECTIVES		
VOCAL SKILLS		• abrupt • angry • anxious • assured • cold • controlled • deep	• enthusiastic • firm • forceful • gentle • harsh • hesitant • loud	• sarcastic • sly • soft • stutter • timid • trusting
Tone Pitch Pace Intonation Silence	Pause Projection Inflection Accent Emphasis			
PHYSICAL SKILLS		• aggressive • defiant • dismissive • distraught • distressed • eager	• eye contact: direct, focused, avoiding, accusing • fearful • gentle • rapid	• relaxed • slow • sluggish • smooth • smug • strong • thoughtful
Body Language Facial Expressions Gestures Stillness Eye-Contact	Posture Movement Gait Stage Presence Interaction			
SPACE PERFORMANCE CONVENTIONS		• anger • anti-climax • appreciation • believable • delight • development • disappointment	• emotional response • empathy • emphasis • engagement • feeling • focal point • horror	• interest • intrigue • irritation • light-relief • realistic • sympathy • understanding
Levels Proxemics Stage Left/Right Centre Stage Transition Blocking **Cannon** **Duologue** **Soundscape**	Freeze- Frame Narration Split Scene Thought-Track Mime Improvisation Physical Theatre Unison Monologue	**Other Useful Vocabulary:** Hot-seating Character Motivation Warm-Up Role-on-the-Wall Genre	**Other Useful Vocabulary:** Rehearsal Sound Effects Naturalistic Abstract Minimalistic	

Glue your timetable here