KNOWLEDGE ORGANISER

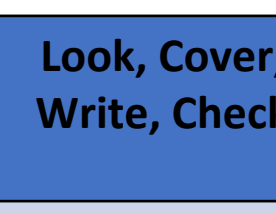
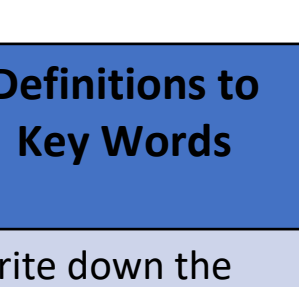
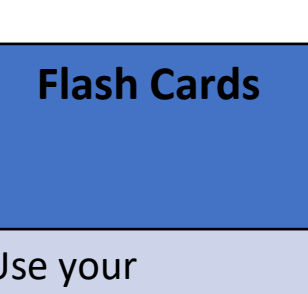
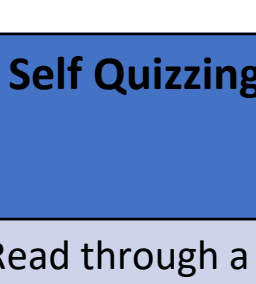
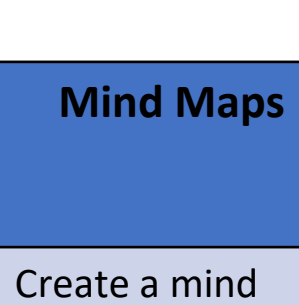
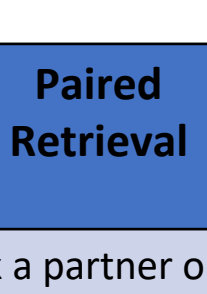
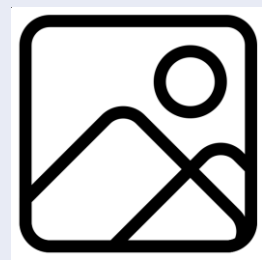
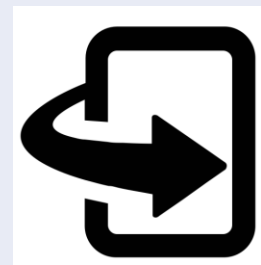
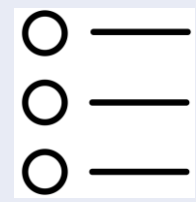
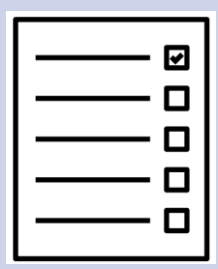
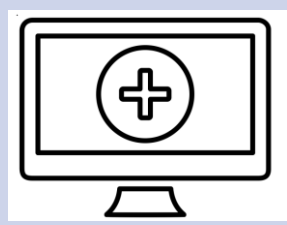
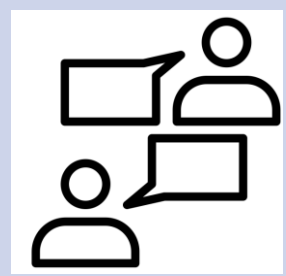
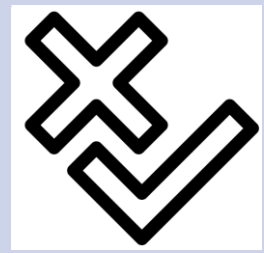
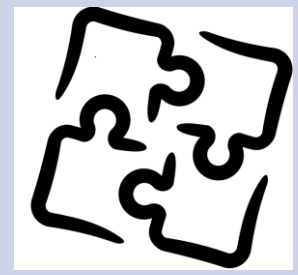
Year 9
Half Term 1

Name:	
Tutor Group:	
Academic Year:	

How to use your Knowledge Organiser

The aim of the knowledge organiser is to ensure that **ESSENTIAL KNOWLEDGE** is stored and retrieved over a long period of time.

You need to ensure that you keep your knowledge organiser in your bag, ready for revision, quizzing and to refer to at any time in all of your subjects.

	Look, Cover, Write, Check	Definitions to Key Words	Flash Cards	Self Quizzing	Mind Maps	Paired Retrieval
Step 1	Look at and study a specific area of your knowledge organiser 	Write down the key words and definitions. 	Use your knowledge organiser condense and write down key facts and/or information on your flash cards. 	Read through a specific area of your knowledge organiser 	Create a mind map with all the information that you can remember from your knowledge organiser. 	Ask a partner or someone at home to have the quiz questions or flash cards in their hands. 
Step 2	Flip the knowledge organiser and write everything you can remember. 	Try not to use the solutions to help you. 	Add diagrams or pictures if appropriate. Write the solutions on the back of the cards. 	Turn over and answer the questions related to that area. 	Check your knowledge organiser to correct or improve your mind map. 	Ask them to test you by asking questions on the section you have chosen from your knowledge organiser. 
Step 3	Check what you have written. Correct mistakes and add extra information. Repeat. 	Check your work. Correct using red pen and add more information if appropriate. 	Self quiz using the cards or ask some to help by quizzing you. 	Turn back over and mark your quiz. Keep quizzing until you get all questions correct. 	Try to make connections that links information together. 	Either say or write down you answers. 


CORE

Movements – Year 9 Unit 1 – English

1700

The Augustans (1700 – 1740s)

Features:
- The modern novel
- Satire

Key figures:
- Alexander Pope
- Jonathan Swift

Romanticism (1790 – 1850)

Features:
- Individualism
- Nature
- Emotion
- A response to the Industrial Revolution

Key figures:
- William Wordsworth
- William Blake
- Lord Byron
- Percy Shelley

Gothic Fiction (1764 – 1832)

Features:
- Supernatural
- The sublime
- Duality of man
- Fear and horror

Key figures:
- Horace Walpole
- Mary Shelley
- Edgar Allan Poe

Transcendentalism (1830 – 1855)

Features:
- Spirituality and the divine

Key figures:
- Henry David Thoreau

Realism (1860 – 1940)

Features:
- Mundane, everyday life
- Average people
- Focus on middle/lower classes

Key figures:
- Leo Tolstoy
- George Eliot
- John Steinbeck

Naturalism (1865 – 1900)

Modernism (1890 – 1950)

Features:
- Rejection of traditional forms
- A sense of disillusionment with the world

Key figures:
- F. Scott Fitzgerald
- James Joyce

Minimalism (1940 – 1980)

Features:
- Stripped-down prose
- Emotional distance from subjects

Key figures:
- Samuel Beckett
- Ernest Hemingway

Postmodernism (1951 – Present)

Features:
- Unreliable narrator
- Allusion to other works
- Social/political commentary

Key figures:
- Samuel Beckett
- Joseph Heller
- Kurt Vonnegut

Present Day

Poetic terms

Enjambment: a sentence in a poem that runs over more than one line.
Caesura: a pause in a line of poetry using punctuation
Dramatic Monologue: A poem spoken by a single character that tells a story.

Context: The Romantics

At the time of the Industrial Revolution, society was becoming increasingly scientific, logical and rational. Romantic writers focused on the beauty of nature, emotion and spontaneity. They were individualists who rebelled against social expectations.

Context: Gothic Fiction

Gothic fiction allowed Victorian writers to push the boundaries of what was acceptable in society. It explored the darker side of human nature, and, as scientific ideas developed with the publication of Darwin's 'On the Origin of Species', it asked questions about the dangers of forbidden knowledge and the 'animal' side of humans.

Critical Theory

Marxism

Marxist theory considers how texts present the struggle between the working and ruling classes, and how the characters' lives and worlds are shaped by Capitalist exploitation.

Feminism

Feminist theory considers how texts present the role and purpose of women. For example, do female characters act independently, or are they victims of patriarchal oppression?

Psychoanalytical Theory

Psychoanalytical theory investigates the hidden, psychological motivations of the characters in a text and asks if the author's unconscious thoughts are expressed though their writing.

The Harlem Renaissance

Harlem is an area of New York that became a centre for African-American artistic expression in the early 1900s.

The Beat Generation

In the 1950s, a group of poets rejected social tradition social and poetic form to write free, rebellious, explicit poems.

Movements – Year 9 Unit 1 – English

Present Day 1700

- Draw out the timeline from 1700 to the present day. Can you name the literary movements in order?
- For each literary movement, research one key text. Write a paragraph about why it is considered important.
- Choose one feature associated with each movement and explain how or why it was used. For example, why were Gothic writers interested in exploring the duality of man?
- Think back over the texts you have studied in year 7 and 8 that have been written between 1700 and present day (i.e. not Shakespeare or Greek myths). Which literary movement would you place each text in? Why?

Context: The Romantics

- What was the romantic era, in large part, a reaction to?
- What were the values of Romantic writers?
- Choose one Romantic writer and research their work. Complete a page of your reflection log to explain what influenced their writing.
- **Stretch**: read and summarise the article from the British Library: https://www.bl.uk/romantics-and-victorians/articles/the-romantics

Context: Gothic Fiction

- What elements of society was Gothic fiction a response to?
- How did Darwin's scientific theories influence Gothic literature?
- Choose one Gothic writer and research their work. Complete a page of your reflection log to explain what influenced their writing.
- **Stretch:** read and summarise the article from the British Library: https://www.bl.uk/romantics-and-victorians/articles/the-origins-of-the-gothic

Critical Theory

- Watch the video on literary criticism and make a page of notes in your reflection log: https://tinyurl.com/2svmah8h

Marxism

- Watch the video on Marxist criticism, complete your own research and make a page of notes in your reflection log: https://www.youtube.com/watch?v=RhU57_nP3zM

Feminism

- Watch the video on feminist criticism, complete your own research and make a page of notes in your reflection log: https://www.youtube.com/watch?v=fRQtBsS-XaU

Psychoanalytical Theory

- Watch the video on psychoanalytical criticism, complete your own research and make a page of notes in your reflection log: https://www.youtube.com/watch?v=c4NXNfBEwZg

The Harlem Renaissance

- Read and summarise the article on the Harlem Renaissance: https://tinyurl.com/harl3mr3n
- What was the Harlem Renaissance?

Poetic terms

- What is enjambment?
- What is caesura?
- What is a dramatic monologue?
- Can you give an example of enjambment and caesura from a poem you have studied?

The Beat Generation

- Read and summarise the article on the Beat Generation: https://tinyurl.com/b3atg3n
- Research Jack Kerouac and Allen Ginsberg. Complete a page of your reflection log, describing what inspired their poetry.
- **Research:** How were the Beats responding to social pressures?

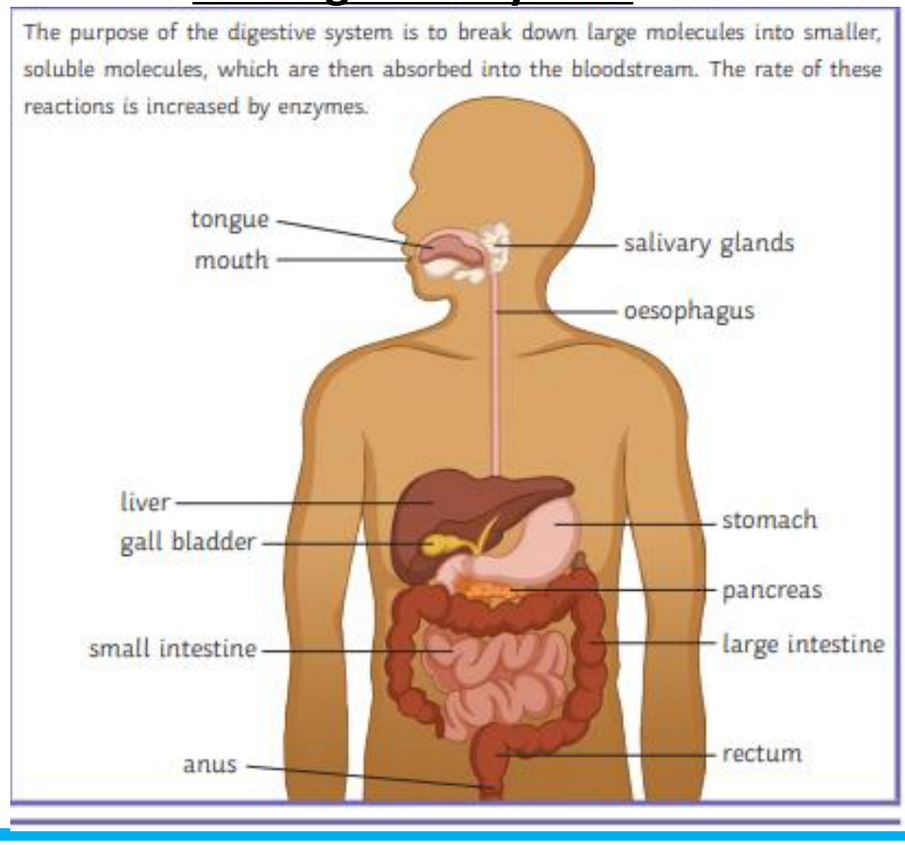
Energy from Food -Knowledge Organiser (part 1)

Major food groups

Food Group	Function in the Body
Protein	growth and repair of tissues – fish, meat, beans and pulses.
Carbohydrate	energy for the body – potatoes, rice, bread, cane sugar, sweets.
Fat	long term store of energy, insulation, hormones, cell membranes, nerves – meat, butter oils.
Vitamins and minerals	Health – various functions, fruit and veg
Fibre	Prevent constipation, plant based food, e.g. celery, cereals, bran, vegetables
Water	Chemical reactions, water, milk, fruit and vegetables

The Digestive system

The purpose of the digestive system is to break down large molecules into smaller, soluble molecules, which are then absorbed into the bloodstream. The rate of these reactions is increased by enzymes.

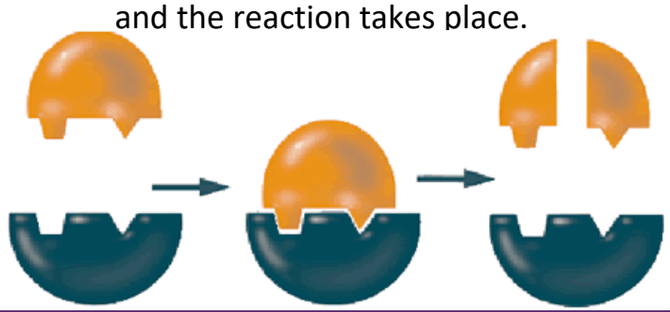


Enzymes

Organisms use enzymes to control chemical reactions.

Enzymes are **catalysts**, so they speed up chemical reactions.

They have an **active site** with a specific shape. A specific molecule called a substrate slots into the active site (like a key into a lock) and the reaction takes place.



Food Tests

Test for	Chemical	Result
Sugar	Add Benedict's solution	Turns brick red (or orange with less sugar)
Protein	Add Biuret solution	Turns purple
Starch	Add iodine	Turns blue black

Photosynthesis

Plants harness the Sun's energy in photosynthesis in order to make food.

$$\text{carbon dioxide} + \text{water} \xrightarrow{\text{light}} \text{glucose} + \text{oxygen}$$

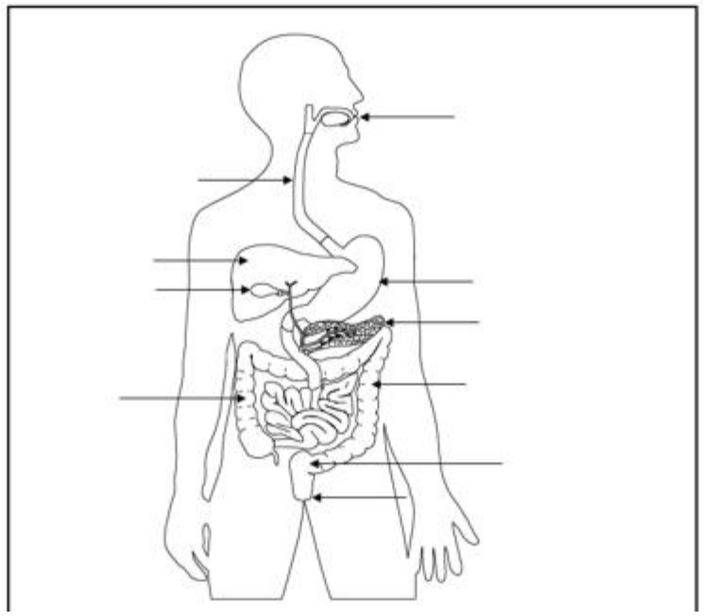
Reactants (what we start with)	Things we need…	Products (what we end with)
Carbon dioxide	Sunlight	Glucose
Water	Chlorophyll	Oxygen
Sunlight		

Energy from Food -Knowledge Organiser (part 1)

Major food groups

1. Name 4 major food groups.
2. Give 2 functions of fat.
3. Which food groups function is growth and repair of tissues.
4. Name 2 foods that are good sources of fibre.
5. What is the function of carbohydrates?
6. Name 2 food that are good sources of protein.

The Digestive system



1. On the picture opposite, label as many parts of the digestive system on the as you can.
2. What is the purpose of the digestive system?

Enzymes

1. What do organisms use enzymes for.
2. We say enzymes act as catalysts- what does this mean?
3. Which part of an enzyme has a specific shape?
4. What do we call the molecule that fits into the active site?
5. Draw a diagram showing the lock and key fit of the substrate into the active site of an enzyme.

Food Tests

1. Which chemical tests for sugar?
2. What does biuret solution test for?
3. What is the positive result for protein?
4. Describe how we test for starch and the result we would get if starch was present.

Photosynthesis

1. Write the equation for photosynthesis.
2. What are the reactants for photosynthesis?
3. What are the products of photosynthesis?

Further Opportunities

1. Research deficiency diseases and make a poster explaining about one deficiency disease.
2. Research how plants are adapted for effective photosynthesis.

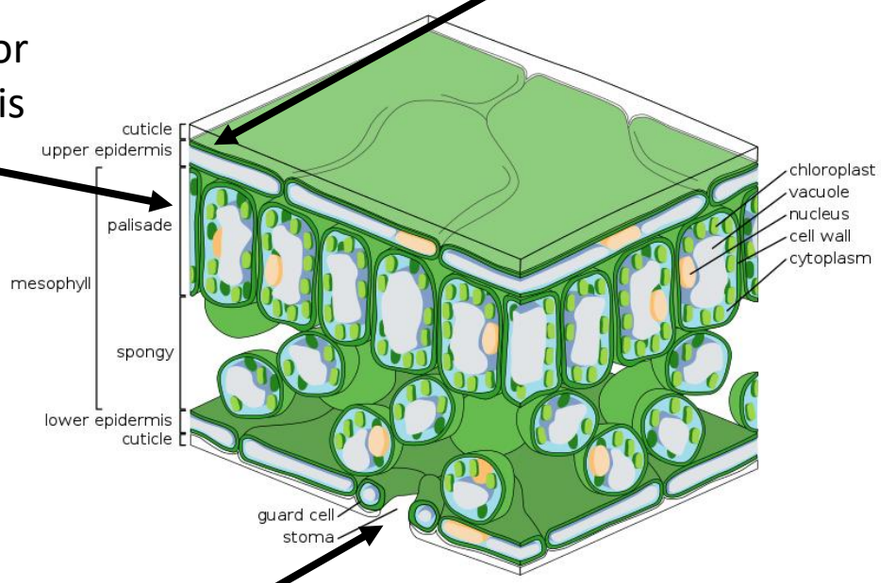
IN UNITY WE SUCCEED
ACADEMY BLACKPOOL

Energy from Food -Knowledge Organiser (part 2)

Leaf adaptations

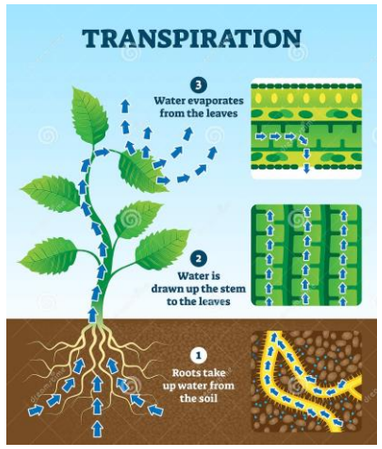
Lots of chloroplasts for photosynthesis

Waxy to stop water escaping



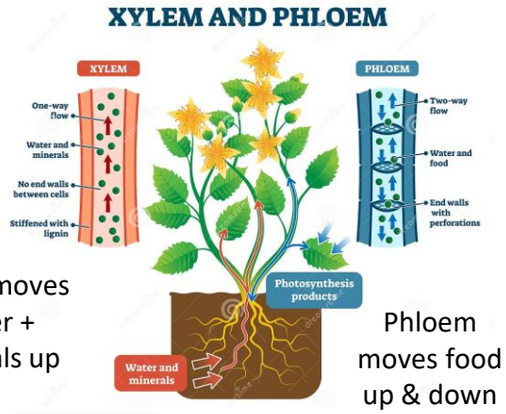
Allows gas to pass in & out

Movement of water in plants



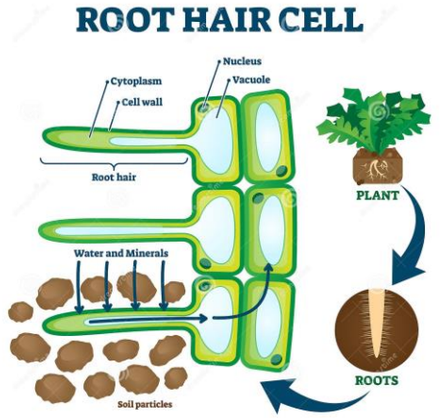
Transpiration moves water up the plant.

Water evaporates out of the leaves, which brings water up the stems from the roots.



Xylem moves water + minerals up

Phloem moves food up & down



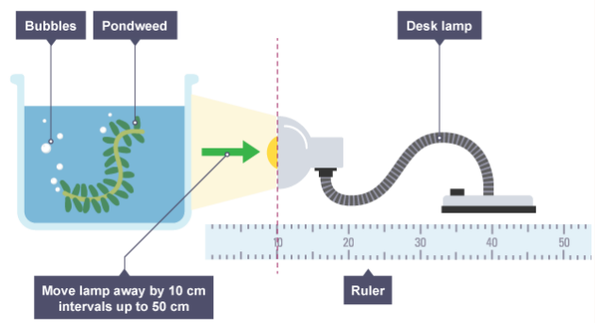
Root cells have a large surface area to absorb lots of water & minerals from the soil

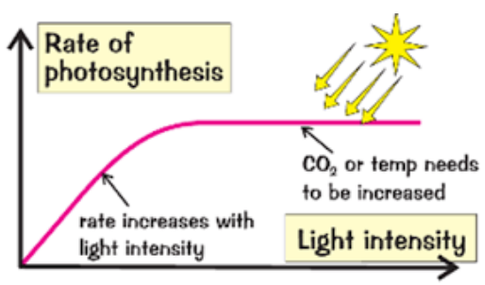
Food Tests

Test for	Chemical	Result
Sugar	Add Benedict's solution	Turns brick red (or orange with less sugar)
Protein	Add Biuret solution	Turns purple
Starch	Add iodine	Turns blue black

Rate of Photosynthesis

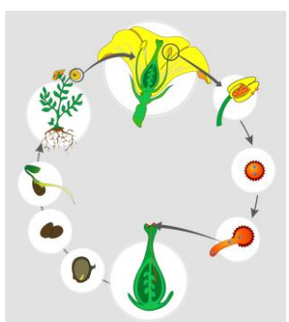
More bubbles means faster rate



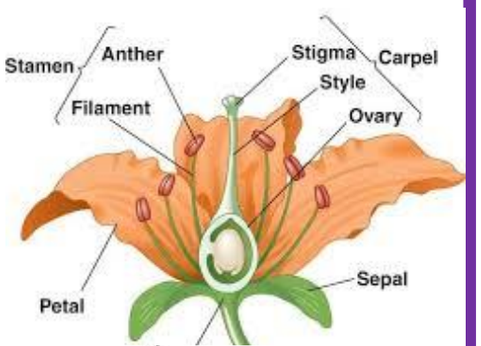


Plants need enough light, CO_2 and heat

Reproduction in plants

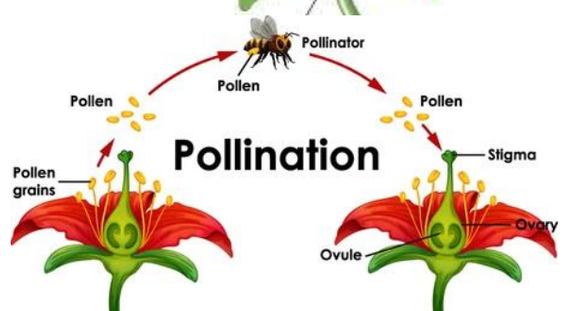


Pollen is found on the anther. Ovules are round in the ovary.



Pollen from one plant fertilises ovules from another plant to produce seeds.

This often requires a pollinator such as a bee.



Energy from Food -Knowledge Organiser (part 2)

Leaf adaptations

1. Name the top layer of cells in a leaf.
2. Which layer of a leaf contains the most chloroplasts?
3. Where are stomata found?
4. What do stomata and guard cells do?
5. Why is the top layer of a leaf waxy?
6. Why are there so many chloroplasts in the cells of a leaf?

FURTHER EXTEND YOUR LEARNING:

Try drawing a diagram of the structure of a leaf
Label each layer of cells
Stretch yourself by trying to explain why each layer of cells has the structure that it does

Movement of water in plants

1. Why do root hair cells have a large surface area?
2. Name 2 substances found in the soil needed by plants.
3. What does the xylem do?
4. What does the phloem do?
5. How does water escape out of the leaves of a plant? (name the process)
6. How is water absorbed by the roots and up the stem? (name the process)

FURTHER EXTEND YOUR LEARNING:

Try drawing a diagram of the roots in a plant
Describe how water and minerals are absorbed
Stretch yourself by explaining transpiration

Food Tests

1. Which chemical tests for sugar?
2. What does biuret solution test for?
3. What is the positive result for protein?
4. Describe how we test for starch and the result we would get if starch was present.

Rate of Photosynthesis

1. How does light intensity affect the rate of photosynthesis?
2. How could you tell if photosynthesis is happening at a faster rate?
3. Briefly describe how the light intensity shining on a plant could be changed.

Reproduction in plants

1. Name the part of a flower containing pollen.
2. Name the part of a flower where the ovules are found.
3. What is a pollinator?
4. What forms after an ovule has been fertilised by pollen?

FURTHER EXTEND YOUR LEARNING:
Try to explain why many plants need pollinators such as bees

YEAR 9 – REASONING WITH ALGEBRA...

Straight Line Graphs

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:

- Compare gradients
- Compare intercepts
- Understand and use y= mx + c
- Find the equation of a line from a graph
- Interpret gradient and intercepts of real-life graphs

Keywords

Gradient: the steepness of a line

Intercept: where two lines cross. The y-intercept: where the line meets the y-axis.

Parallel: two lines that never meet with the same gradient.

Co-ordinate: a set of values that show an exact position on a graph.

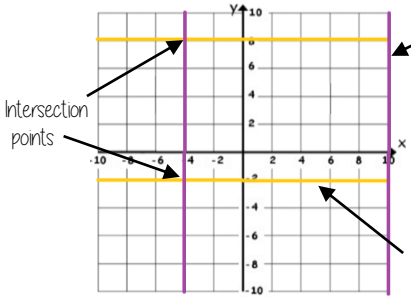
Linear: linear graphs (straight line) – linear common difference by addition/ subtraction

Asymptote: a straight line that a graph will never meet.

Reciprocal: a pair of numbers that multiply together to give 1.

Perpendicular: two lines that meet at a right angle.

Lines parallel to the axes (R)



All the points on this line have a x coordinate of 10

'a' can be ANY positive or negative value including 0

Lines parallel to the **y axis** take the form **x = a** and are **vertical**

Lines parallel to the **x axis** take the form **y = a** and are **horizontal**

All the points on this line have a y coordinate of -2

e.g (3, -2) (7, -2) (-2, -2) all lay on this line because the y coordinate is -2

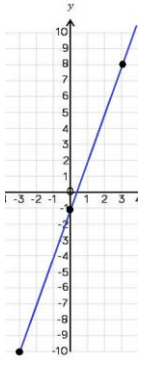
Plotting y = mx + c graphs (R)

$y = 3x - 1$ → 3 x the x coordinate then – 1

x	-3	0	3
y	-10	-1	8

Draw a table to display this information

This represents a coordinate pair (-3, -10)



You only need two points to form a straight line

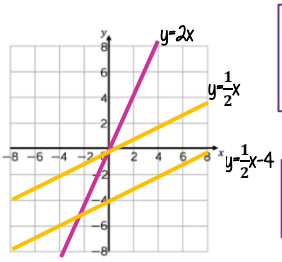
Plotting more points helps you decide if your calculations are correct (if they do make a straight line)

Remember to join the points to make a line

Compare Gradients

$y = mx + c$

The **coefficient** of x (the number in front of x) tells us the gradient of the line



The **greater** the gradient – the **steeper** the line

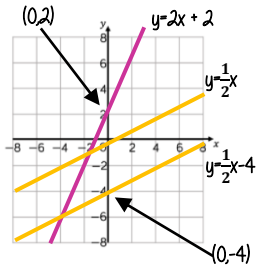
Parallel lines have the **same** gradient

Positive gradients

Negative gradients

Compare Intercepts

$y = mx + c$ ← The value of **c** is the point at which the line crosses the y-axis. **Y intercept**



The coordinate of a y intercept will always be (0,c)

Lines with the **same** y-intercept cross in the **same** place

y = mx + c

The **coefficient** of x (the number in front of x) tells us the gradient of the line

$y = mx + c$ ← The value of **c** is the point at which the line crosses the y-axis. **Y intercept**

y and x are **coordinates**

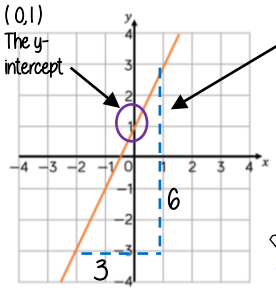
The equation of a line can be rearranged. E.g.

y = c + mx

c = y – mx

Identify which coefficient you are identifying or comparing

Find the equation from a graph



$y = 2x + 1$

The direction of the line indicates a positive gradient

Positive gradients

Negative gradients

Real life graphs

A plumber charges a £25 callout fee, and then £12.50 for every hour. Complete the table of values to show the cost of hiring the plumber.

Time (h)	0	1	2	3	8
Cost (£)	£25				£125

The y-intercept shows the minimum charge. The gradient represents the price per mile

In real life graphs like this values will always be positive because they measure distances or objects which cannot be negative.

Direct Proportion graphs To represent direct proportion the graph must start at the origin

When you have 0 pens this has 0 cost. The gradient shows the price per pen.

A box of pens costs £2.30

Complete the table of values to show the cost of buying boxes of pens.

Boxes	0	1	2	3	8
Cost (£)		£2.30			

YEAR 9 – REASONING WITH ALGEBRA...

Straight Line Graphs

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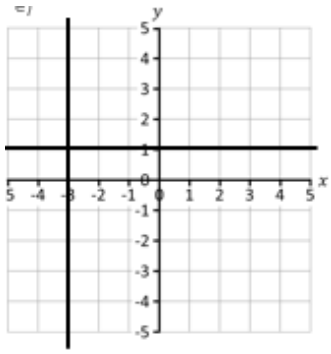
Lines Parallel to the Axes

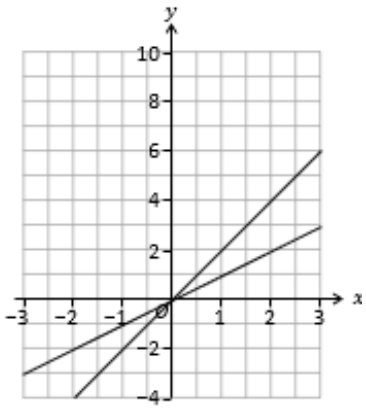
State the equation of the lines shown below:



Compare Gradients

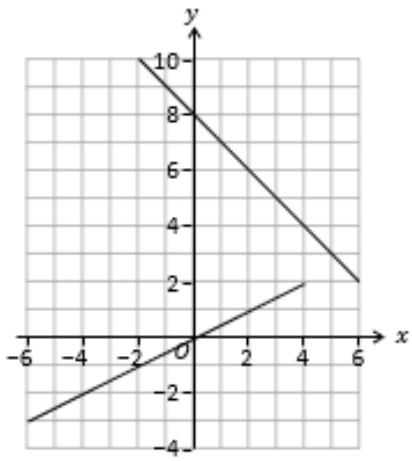
Find the gradients of the lines below.

Are they different? How do you know?



Compare Intercepts

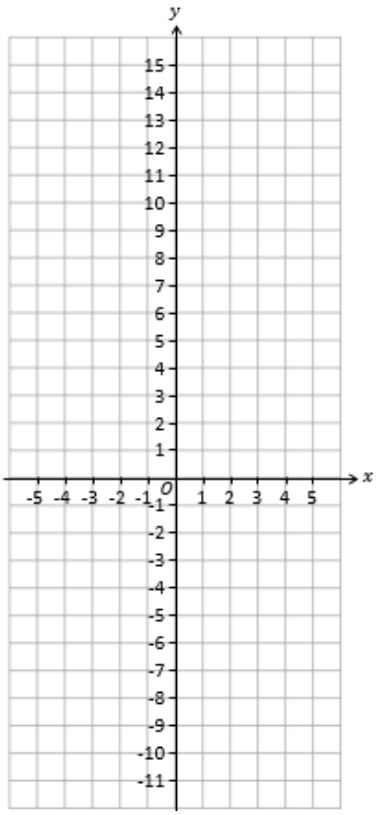
Find the y intercept of the lines below:



Plotting y = mx + c Graphs

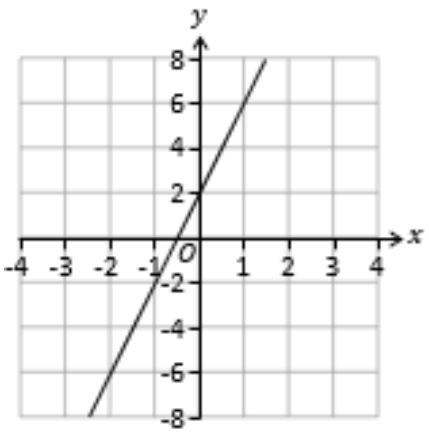
$y = 4x - 3$

x	−5	−4	−3	−2	−1	0	1	2	3	4	5
y											



Find the Equation from a Graph

Find the equation of the line below:



YEAR 9 – REASONING WITH ALGEBRA...

Forming and Solving Equations

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What do I need to be able to do?

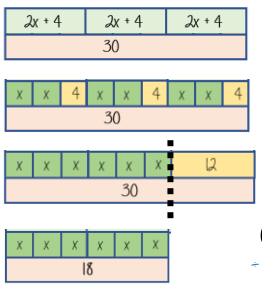
By the end of this unit you should be able to:

- Solve inequalities with negative numbers
- Solve equations with unknowns on both sides
- Solve inequalities with unknowns on both sides
- Substitute into formulae and equations
- Rearrange formulae

Keywords

Inequality: an inequality compares who values showing if one is greater than, less than or equal to another
Variable: a quantity that may change within the context of the problem
Rearrange: Change the order
Inverse operation: the operation that reverses the action
Substitute: replace a variable with a numerical value
Solve: find a numerical value that satisfies an equation

Solve equations with brackets (R)



$3(2x + 4) = 30$

Expand the brackets

$6x + 12 = 30$

$-12 \quad -12$

$6x = 18$

$\div 6 \quad \div 6$

$x = 3$

Form and solve inequalities (R)

Two more than treble my number is greater than 11

Find the possible range of values

$3x + 2 > 11$

Solve

$x \leftarrow -3 \leftarrow -2 \leftarrow 11$

$x > 3$

Inequalities with negatives

Method 1 Make x positive first

$2 - 3x > 17$

$+3x \quad +3x$

$2 > 17 + 3x$

$-17 \quad -17$

$-15 > 3x$

$\div 3 \quad \div 3$

$-5 > x$

x is true for any value smaller than -5

Smaller ← → Bigger

-7 -5 -3

✓ CHECK IT!
$2 - 3(-6) = 20$
TRUE/ CORRECT

Method 2 Keep the negative x

$2 - 3x > 17$

$-2 \quad -2$

$-3x > 15$

$\div -3 \quad \div -3$

$x > -5$

x is true for any value bigger than -5

This cannot be true...

$x < -5$

When you multiply or divide x by a negative you need to reverse the inequality

Equations with unknown on both sides

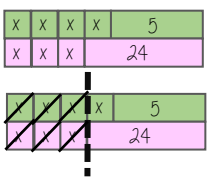
$4x + 5 = 3x + 24$

$-3x \quad -3x$

$x + 5 = 24$

$-5 \quad -5$

$x = 19$



Inequalities with unknown on both sides

Solving inequalities has the same method as equations

$5(x + 4) < 3(x + 2)$

$5x + 20 < 3x + 6$

$2x + 20 < 6$

$2x < -14$

$x < -7$

Check it!

$5(-8 + 4) < 3(-8 + 2)$

$5(-4) < 3(-6)$

$-20 < -18$

✓ -20 IS smaller than -18

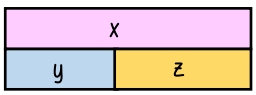
Formulae and Equations

Formulae – all expressed in symbols

Substitute in values

Equations – include numbers and can be solved

Rearranging Formulae (one step)



$x = y + z$

Rearrange to make y the subject.

$y = x - z$

$y \rightarrow +z \rightarrow x$

$y \leftarrow -z \leftarrow x$

Using inverse operations or fact families will guide you through rearranging formulae

Rearranging can also be checked by substitution

Language of rearranging....

Make XXX the subject

Change the subject

Rearrange

Rearranging Formulae (two step)

In an equation (find x)

$4x - 3 = 9$

$+3 \quad +3$

$4x = 12$

$\div 4 \quad \div 4$

$x = 3$

In a formula (make x the subject)

$xy - s = a$

$+s \quad +s$

$xy = a + s$

$\div y \quad \div y$

$x = \frac{a + s}{y}$

The steps are the same for solving and rearranging

Rearranging is often needed when using $y = mx + c$

e.g. Find the gradient of the line $2y - 4x = 9$

Make y the subject first $y = \frac{4x + 9}{2}$

Gradient $= \frac{4}{2} = 2$

YEAR 9 – REASONING WITH ALGEBRA...

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Forming and Solving Equations

Solve Equations with Brackets

Solve
$3(x + 5) = 27$

Inequalities with Negatives

Solve
$-5x + 24 > 54$

Equations with Unknowns on Both Sides

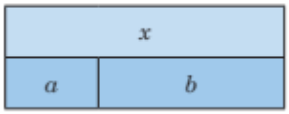
Solve
$3x + 1 = 2x + 5$

Inequalities with Unknowns on Both Sides

Solve
$4 + 5g < 3g - 8$

Rearranging Formulae (one step)

Use the bar model to write b in terms of x and a.



Make y the subject:

$c = y + z$

Rearranging Formulae (two step)

Make a the subject:

$5a + 4 = b$

$\frac{a}{6} - 5 = b$

YEAR 9 – REASONING WITH ALGEBRA...

Testing conjectures

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What do I need to be able to do?

By the end of this unit you should be able to:

- Use factors, multiples and primes
- Reason True or False
- Reason Always, sometimes never true
- Show that reasoning
- Make conjectures about number
- Expand binomials
- Make conjectures with algebra
- Explore the 100 grid

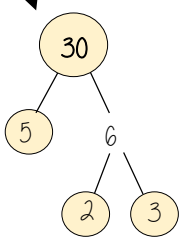
Keywords

Multiples: found by multiplying any number by positive integers
Factor: integers that multiply together to get another number.
Prime: an integer with only 2 factors.
HCF: highest common factor (biggest factor two or more numbers share)
LCM: lowest common multiple (the first time the times table of two or more numbers match)
Verify: the process of making sure a solution is correct
Proof: logical mathematical arguments used to show the truth of a statement
Binomial: a polynomial with two terms
Quadratic: a polynomial with four terms (often simplified to three terms)

Factors, Multiples and Primes

R

Multiplication part-whole models



All three prime factor trees represent the same decomposition

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

Common factors are factors two or more numbers share

LCM – Lowest common multiple

LCM of 9 and 12

9: 9, 18, 27, 36, 45, 54

12: 12, 24, 36, 48, 60

Common multiples are multiples two or more numbers share

True or False?

Conjecture

A pattern that is noticed for many cases

1, 2, 4....
The numbers in the sequence are doubling each time.

Counterexamples

This sequence isn't doubling it is adding 2 each time

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

Always, Sometimes, Never true.

Always – Every value always supports the statement

Sometimes – Examples show the statement being true and counter examples to show when it is false.

Never – No example supports the statement

Examples to try
- 0 and 1
- Fractions
- Negative numbers

Show that

Numerical verification – Show the stages to a solution with numerical values

Algebraic verification – Show algebraic properties of the solution
You may want to use pictorial images to support this

Proof – Simple proofs using algebra

Compare the left hand side of an equation with the right hand side – are they the same or different?

Conjectures

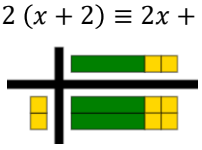
Even
$(2n)$
Multiple of 2

Odd
$(2n + 1)$
One more than any even

Use numerical verification first
Use pictorial verification – the representations of numbers of odd and even

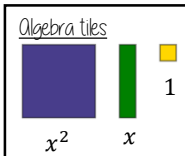
Expanding binomials

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



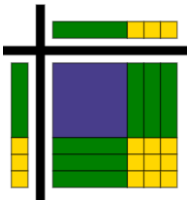
Algebra tiles can represent a binomial expansion
Has two terms

Algebra tiles



Positive values

$(x + 3)(x + 3) \equiv x^2 + 6x + 9$



This is a quadratic
It has four terms which simplified to three terms

The order of the binomial has no impact on the outcome
e.g. $(x + 3)(3 + x)$

Exploring the 100 square

In terms of 'n' is used to make generalisations about relationships between numbers

Positions of numbers in relation to n form expressions
Eg one space to the right of n
$n + 1$

Eg One row below n
$n + 10$

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The size of the grid for generalisation changes the relationship statements

YEAR 9 – REASONING WITH ALGEBRA...

Testing conjectures

Factors, Multiples and Primes

Find the Highest Common Factor of 72 and 90.

Find the Lowest Common Multiple of 12 and 18.

Find the product of prime factors for 900.

Expanding Binomials

Expand the following:

$4(y + 5) =$

$d(d + 6)$

$(a + 2)(a + 4) =$


EBACC

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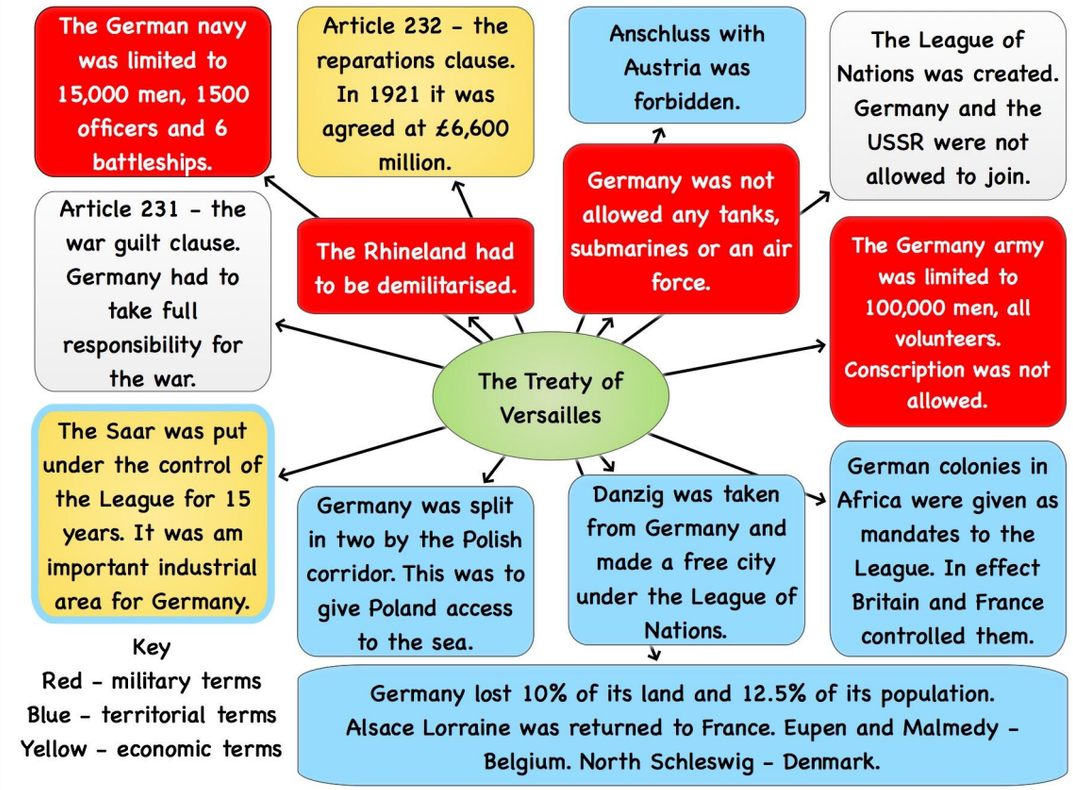
History Knowledge Organiser
From war to peace and back again - The peace treaties

The Treaty of Versailles



Key
Red - military terms
Blue - territorial terms
Yellow - economic terms

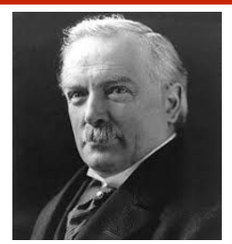
Key people - the big three

Woodrow Wilson
USA

Aims - world peace. He wanted self-determination for countries to rule themselves and suggested the creation of the League of Nations.

Opinion - so harsh that Germany would seek revenge leading to another war. Happy league was established but sad that USA did not join.

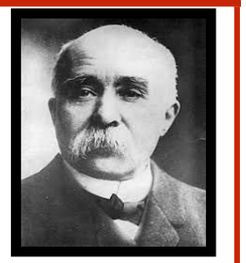
David Lloyd George
Britain



Aims - elected by promising to punish the Germans but wanted them to be strong enough to trade with. To protect the empire and navy.

Opinion - felt it was too harsh, that Britain would have to fight another war in 25 years' time. Pleased with military terms and Empire larger than ever.

Georges Clemenceau
France



Aims - Germany destroyed so that it would never again be able to invade France. Wanted them to pay for the damage caused to French land.

Opinion - felt it was not harsh enough as Germany was not destroyed. More money wanted and the Rhineland should be independent. Voted out.

Key dates

28/6/19	Treaty of Versailles
10/9/19	Treaty of St Germain
27/11/19	Treaty of Neuilly
4/6/20	Treaty of Trianon
10/8/20	Treaty of Sevres
July 1923	Treaty of Lausanne

The other peace treaties

St Germain - Austria. Land to Italy, Romania, Czechoslovakia, Yugoslavia and Poland. Army 30,000 no conscription, no navy. No anschluss with Germany. Reparations but amount not fixed.

Neuilly - Bulgaria. Land to Yugoslavia, Greece and Romania. £100 million. Army 20,000, no conscription, no air force, 4 battleships.

Trianon - Hungary. Land to Romania, Czechoslovakia, Yugoslavia and Austria. Reparations not fixed. Army 30,000, no conscription, 3 patrol boats.

Sevres - Turkey. Land to Greece and all European land except area around Constantinople. Army 50,000 7 sail 6 torpedo boats.

Lausanne. Turkey regained some land from Greece, control of Dardanelles, Bosphorus straits and armed forces. Reparations cancelled.

KEY VOCABULARY/ TERMS

Diktat, demilitarise, Anschluss, conscription, mandates, League of Nations, isolationism, clause, armistice, Rhineland, disarmament, self determination

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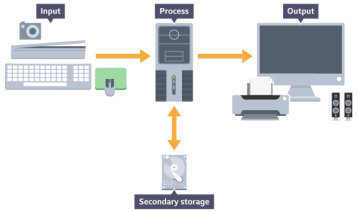
History Knowledge Organiser
From war to peace and back again - The peace treaties

Questions		Answers
1	What were the territorial terms of the treaty of Versailles?	
2	What were the economic terms of the Treaty of Versailles?	
3	What were the military terms of the Treaty of Versailles?	
4	What other terms were there?	
5	Which terms do you think the Germans hated most and why?	
6	What was the aim of Woodrow Wilson at Versailles?	
7	What was Wilson's opinion of the Treaty of Versailles?	
8	What was the aim of Georges Clemenceau at Versailles?	
9	What was Clemenceau's opinion of the Treaty of Versailles?	
10	What was the aim of David Lloyd George at Versailles?	
11	What was Lloyd George's opinion of the Treaty of Versailles?	
12	What did the Germans call the Treaty of Versailles?	
13	Which treaty dealt with Austria?	
14	Which treaty dealt with Bulgaria?	
15	Which treaties dealt with Turkey?	
16	What did Turkey get back in the second treaty?	
17	What international peacekeeping organisation was established as a part of the peace treaties?	
18	Who wanted to introduce this organisation?	
19	Which key country did not join this organisation?	
20	When was the last treaty signed and how long after WW1 was this?	

Computer Science
9.1 Computer Systems

Overview



Computer systems are **a combination of both hardware and software working together to process data**. **Hardware** is the physical components of the computer, such as the central processing unit (CPU), memory and storage. **Software** is the programs that run on a computer, controlling the hardware.

A computer system requires both hardware and software to function. Aside from the internal components of a computer, additional hardware allows the user to communicate with the system through **inputs** and **outputs**.

Hardware Components

The **PROCESSOR** is the component that executes program instructions.

The instruction and data are fetched from memory, decoded and executed.

Terminology: commonly referred to as the CPU (central processing unit).

The main **MEMORY** (primary storage) is the component that stores the programs and data currently in use.

Memory is volatile: its contents are lost when the power is turned off.

Terminology: The main memory is commonly referred to as RAM (random-access memory).

SECONDARY STORAGE is the set of components that store programs and data that are not-in use.

Storage is persistent or non-volatile: it retains its contents when the power is off.

Terminology: Typical secondary storage devices include, Hard drives, solid state drives, SD cards, Optical Disks etc.

Operating Systems

An **operating system** is the most important software that runs on a computer. The operating systems main functions are to:

- controlling hardware components
- providing a user interface
- managing processes to allow multi-tasking
- managing the computer's memory
- managing security

Without an operating system, a computer cannot operate!

There are numerous operating systems, controlling a variety of devices (computers, phones, tablets etc). Five of the most common operating systems are Microsoft Windows, Apple macOS, Linux, Android and Apple's iOS.

Computer programs

Programs are a sequence of instructions that specify the operations to be performed on data. Programs can be to control the computer system (system software) or to assist the user complete tasks (application software)

General Purpose Computers

A **general purpose computer** is designed to execute programs, thus allowing it to carry out many different tasks. Desktop computers and laptops are examples of general purpose computers.

SCAN ME

Computers are Digital

A computer is built from hardware. Hardware components are basically a collection of transistors (special switches), at least 1 million transistors per square millimetre which are joined together to form circuits.

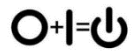
Transistors (switches) can only have two states:

- on - a current is flowing through the component
- off - a current is not flowing through the component

These two states can easily be represented by using binary:

1 = on (TRUE)

0 = off (FALSE)



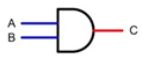
2 or more switches joined together in a circuit is called a logic gate. The logic gates operate in different ways depending on the digital data passing through them. There are 3 logic gates you need to understand; the AND gate, the OR gate and the NOT gate.

Logic Gates

Logic gates receive binary data, apply a Boolean operation, then output a binary result. Each gate is shown by a different symbol.

Truth tables show all possible input combinations of 1s and 0s and their corresponding outputs.

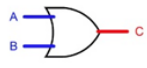
1. AND gates take two inputs and give one output.
2. If both inputs are 1, the output is 1, otherwise the output is 0.



AND Gate

Input A	Input B	Output C
0	0	0
0	1	0
1	0	0
1	1	1

1. Or gates take two inputs and give one output.
2. If one or more inputs are 1, the output is 1, otherwise the output is 0.

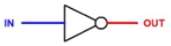


OR Gate

Input A	Input B	Output C
0	0	0
0	1	1
1	0	1
1	1	1

1. NOT gates take one put and give one output.
2. If the input is 1, it outputs 0. If the input is 0, it outputs 1.

NOT Gate



Input	Output
0	1
1	0

The IOT

The Internet Of Things is where objects, animals and people are connected to the internet and share data with other connected 'things' automatically. Most devices that are connected to the internet that weren't once are called 'smart devices' and it allows them to have more functionality and be controlled remotely. The IOT is based around the sharing of data.

Computer Science - 9.1 Computer Systems

What I need to know:

Computer Systems (features, components and facts)
What is a computer system?
Describe the three main hardware components that make up a computer system?
List the key functions of an operating system.
Name the five most common operating systems.
What is a computer program?
What are the two types of computer program?
What is a general purpose computer?
What is the processor, and by what acronym is it commonly known as?
What is RAM (primary storage) used for in a computer?
What does RAM stand for?
Name and describe three different types of secondary storage.
What does volatile mean in relation to computer memory?
What does it mean to state that secondary storage is persistent?
What is hardware built from?
What is a transistor?
Why are 0 and 1 (binary digits) used?
What is a logic gate?
Describe an AND gate.
Describe an OR gate.
Describe a NOT gate.
What are Truth Tables?
What does IOT stand for?
Describe what is meant by the IOT

1 What is a general purpose computer?

- A computer found in a digital watch
- A computer designed to perform more than one task
- A small computer that forms part of a larger system

2 What is clock speed measured in?

- Bytes
- Hertz
- Seconds

3 Which of the following are components of the central processing unit (CPU)?

- Registers, read only memory (ROM) and cache
- Resisters, read only memory (ROM) and arithmetic logic unit (ALU)
- Registers, cache and arithmetic logic unit (ALU)

4 Which central processing unit (CPU) component makes logical decisions?

- Control unit (CU)
- Cache
- Arithmetic logic unit (ALU)

5 What is a register?

- A small amount of high speed random access memory (RAM) contained within the processor
- A small amount of high speed read only memory (ROM) contained within the processor
- A small computer that forms part of a larger system

6 What is a core?

- A second processing unit within a control unit (CU)
- A system that has many processors
- A processing unit within a CPU

SCAN ME

7 What are the three types of bus?

- Address, control and instruction
- Address, control and data
- Address, data and instruction

8 Which of these statements about Von Neumann architecture is true?

- Only data is stored in main memory
- Only instructions are stored in main memory
- Data and instructions are both stored in main memory

9 Which register holds the address of the next instruction to be fetched from memory?

- Program counter (PC)
- Memory address register (MAR)
- Current instruction register (CIR)

10 What is hardware?

- The physical parts that are attached to the motherboard
- The logical components of a computer system
- The physical components of a computer system

Do some research and then write a summary of each of the following keywords

Computer, system, device, program, software, instructions, hardware, data, general purpose, purpose-built, embedded.	architecture, hardware, RAM, ROM, CPU, secondary storage, specs, communication, memory, component.	fetch, decode, execute, read-only, volatile, non-volatile, persistent, BIOS, boot-up
transistor, switch, state, logic-gate, circuit, truth table, binary	software, program, application, system-software, operating system, driver, utility, compress, defrag, encrypt, user-interface.	internet, connected, data, sensor, innovation, cyber-security, breach, automated, exploit.

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RE Knowledge Organiser
Religious symbolism

Christianity

There are a number of symbols that feature in Christianity. This has always been the case, partly due to the persecution of Christians under the Romans.

- The most common symbol linked to Chritstianity is the cross. It is most commonly used by Protestants and the empty cross represents the resurrected Christ. This is similar to the Crucifix, which is a cross with Jesus on it. This symbolises his sacrifice and reminds Christians that his death was to make up for the sins of people. This is more commonly used by Catholic and Orthodox Christians.
- The Triquetra is one continuous line that represents the eternal nature of God, which also looks like three parts - the Trinity.
- The word 'ichthus' is Greek in origin and means fish. The Ichthus is one of the earliest symbols of Christianity. A Christian would draw the fish shape and if the other person drew an eye on it then they knew it would be safe to talk about their beliefs
- The Chi-Rho monogram of early Christianity is basically two Greek letters - Chi and Rho. Theres are the first two letters of Christ in Greek. A Christian might draw one of the two and another might add the second. This was again meant for times when it could be dangerous to talk about their beliefs.

Judaism

In Judaism symbols have a number of uses. For example, The Magen David, or Star of David, is one of the most frequently seen symbols of the Jewish religion and the Jewish people. It has only recently that it has become a major symbol. It appears on the flag of Israel.
A Menorah is a seven-branched candlestick that used to burn in the Jewish Temple over 2000 years ago. The Torah says that the design for the original menorah was given to Moses by God when he was given the Covenant on Mount Sinai. A picture of a menorah features on the seal of the state of Israel. It is considered sinful to copy any furniture that used to stand in the Temple, so if a synagogue has a menorah, it is likely to have just six branches.

Islam

Islamic art is a mixture of religious and cultural traditions. It is used in paintings, architecture and floorings such as tile work. It has been used across Middle Eastern countries since the 17th century. Many of these artworks include Calligraphy, which features especially in Mosques. Muslim art does not feature people or animals, as this is classed as blasphemy. This is because people and animals are God's creation, and by drawing them, we try to imitate God. One feature of the Mosque that is highly decorated is the Mihrab. The Mihrab shows the direction in which Muslims need to pray (towards Mecca). It is decorated with texts from the Qur'an or the 99 names of Allah written in calligraphy around it. Prayer mats are also highly decorative and usually feature images of the great Mosques of Mecca and Medina.

Hinduism

All hindu symbols have spiritual meaning. Two key symbols in the Hindu faith is the Aum and the Swastika.

- The aum represents Brahman in three parts - the Trimurti.
- The swastika points in all directions and represents Brahman being everywhere. It fuses two words - su ('good') and asati ('to exist') - the idea that all existence should be good. It is a sign of good fortune.

Each deity in Hinduism has an animal, called a Vahana. This animal can represent a deity's strength. For example, Ganesha is sometimes seen resting his foot on a mouse, showing he can crush useless thoughts which swarm our head like mice. There are also a lot of symbolism in murtis, which are statues of specific deities. People will pray to these deities for different things.

Buddhism

In Buddhism there are many different symbols including not only images, but also actions and gestures.The most common symbol linked to Buddhism is the Dharmachakra (Dharma wheel) which is a wheel with eight spokes, representing the Noble Eightfold path. Other symbols include the Lotus flower represents karma, the law of cause and effect and the Triratna. The Triratna is an image of three jewels which represent the three things buddhists commit themselves to: the Buddha, the Dharma and the Sangha.
Images of the Buddha are called rupas. Their body shapes, particularly their hand gestures (called mudras) have meanings. These could show a variety of aspects of the Buddha including his teaching, his courage and fearlessness and also his composure during meditation..

KEY VOCABULARY/ TERMS

Ichthus, Chi-Rho Monogram, Triquetra, Cross, Crucifix, Calligraphy, Mihrab, Aum, Swastika, Vahana, Dharmachakra, Triratna, Rupas, Mudras, Shin, Chai, Magen David, Menorah

RE Knowledge Organiser
Religious symbolism

Quiz questions

What does the aum represent?	
What is the Ichthus?	
What symbol does the flag on a Gurdwara have on it?	
Which deity has its foot held over a mouse?	
What images are blasphemous in Islam?	
What is a Vahana?	
What does the Lotus flower represent?	
What style of writing would you find in Islamic artwork?	
What does the Triratna show?	
What might feature images of two famous mosques on them?	
What is a Menorah?	
What is the Star of David also known as?	
What is the name of the symbol that is a wheel with eight spokes on it?	
What did the Chi-Rho Monogram help Christians do?	
What are images of Buddha called?	
Which flag has the Magen David on it?	
What are the Buddha's hand gestures called?	
What does the Mihrab show Muslims?	

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History Knowledge Organiser
From war to peace and back again 2. The League of Nations

Key facts

The idea of American President Woodrow Wilson to bring the world together in peace. It would be a group of countries that would work together to solve world problems.

Aims

- To stop war from breaking out again
- To encourage disarmament
- To improve working conditions
- To tackle deadly diseases

Based in Geneva, Switzerland where the Red Cross was also based.

The USA never joined when the Senate refused to agree.

The plan was to keep peace through collective security, where the countries worked together to keep the peace and look after the interests of every nation.

Structure

The Assembly

Worked like an international parliament.
It met once a year on the first Monday of September.
Every country sent one member and had one vote.
All votes had to be unanimous.
When it began there were 42 countries involved.

The Council

The Assembly was too big to react quickly in an emergency. The Council met more regularly and had the power of veto to stop and Assembly vote.
There were four permanent members: Britain, France, Italy and Japan. Four and later nine other countries were non-permanent members.

The Secretariat

The civil service of the League.
It was in charge of administration and organising any action the League wanted to take.
It had experts who were responsible for carrying out decision except military issues.

LEAGUE OF NATIONS
SOCIETE DES NATIONS

The Permanent Court of International Justice

This was a court of law that would settle international arguments. Any country could bring an issue to the eleven judges and four deputy judges.
The court came to a verdict but this was not compulsory but without an army they could not force countries to follow it. It was elected by the assembly for 11 years.

Special commissions

Special groups to tackle issues the League was worried about including:
The International Labour Organisation (ILO)
The Disarmament Commission
The Health Organisation
The Slavery Commission
The Commission for Refugees
The Permanent Central Opium Board

Membership

Britain 1919 - 1945
France 1919 - 1945
Japan 1919 - 1933
Italy 1919 - 1937
Germany 1926 - 1933
USSR 1934 - 1939
USA never joined
At its largest it had 63 member states.

Strengths	Weaknesses
It was written into all of the peace treaties at the end of WW1. It had a large membership which could work well with mitigation, moral condemnation, and economic sanctions.	Membership. The USA did not join. The USSR and Germany were not allowed to join. Countries could leave when they wanted to. No army so could not enforce decisions. Decisions were difficult due to unanimous votes and the structure made it slow.

Key dates

25th March 1919	Lloyd George issued the Fontainebleau Memorandum in support of the League.
1921	Helped free 427 000 prisoners of war.
1922	Recommended banning white lead in paint. Set up refugee camps in Turkey and created the Nansen Passport.
1925	Other drugs now tackled by the newly named Permanent Central Narcotics Board
1928	77 countries set a minimum wage.
1930	Helped Greece set up social insurance.
1933	Tried to appoint a High Commissioner for refugees - mainly Jews from Germany (who voted against it)
1935	Attempted 8 hour day.

KEY VOCABULARY/ TERMS

Assembly, unanimous, veto, Secretariat, civil service, International Labour Organisation (ILO), slavery, refugee, Council, Geneva, collective security, Permanent Court of International Justice, Covenant, mitigation, moral condemnation, economic sanctions

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History Knowledge Organiser
From war to peace and back again 2. The League of Nations

Questions		Answers
1	Whose idea was the League of Nations?	
2	Which part of the League met once a year with all members?	
3	What did all votes have to be?	
4	Which countries were permanent members of the Council?	
5	Which countries were not allowed to join at the start?	
6	Which countries chose to leave the League? Bonus - do you know why?	
7	Give two aims of the League.	
8	Give two strengths of the League.	
9	Give two weaknesses of the League.	
10	Which country was considered to be the most powerful after WW1 but did not join?	
11	When was Germany a member?	
12	When was Japan a member?	
13	When was Italy a member?	
14	When was the USSR a member?	
15	What was the role of the Secretariat?	
16	Give three examples of special commissions.	
17	What was the role of the Permanent Court of International Justice?	
18	What did the League do in 1921?	
19	What did the League do in 1922?	
20	What did the League try to do in 1933?	

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History Knowledge Organiser
From war to peace and back again 3. Causes of WW2.

Hitler was to blame

In Mein Kampf Hitler vowed to overturn Versailles and take Lebensraum (living space). This was the basis of his foreign policy and meant he would have to invade countries. This could start a war. He also vowed to make Germany strong again.

Hitler hated Communism and wanted to stop it by invading Russia which would start a war.

Appeasement

The policy of appeasement aimed to prevent another war and is linked particularly with Chamberlain. Many believe he made a mistake by trusting Hitler. Britain and France could have stopped Germany. Opportunities such as the Rhineland were missed and Chamberlain even worked with Hitler in Munich to give him the Sudetenland. This prompted the Nazi Soviet Pact.

Key dates

1933	Hitler leaves League of Nations disarmament conference
1935	Rearmament Rally
7/3/1936	Remilitarisation of the Rhineland
October 1936	Rome-Berlin Axis
12/3/1938	Anschluss with Austria
Sep 1938	Munich Agreement
15/3/ 1939	Hitler invades Czechoslovakia
1939	Nazi Soviet Pact
1/9/1939	Germany invaded Poland
3/9/1939	Britain declares war on Germany

The failure of the League

Its structure and organisation made the League weak. Its lack of army meant it could not force nations to comply. Membership - countries could leave, the USA never joined and USSR and Germany were not allowed to join at first. Manchuria showed that the League was weak and would not deal with a member of the council. Abyssinia showed Britain and France undermine it.

The Nazi Soviet Pact

Stalin felt alienated by the Munich Agreement and this encouraged him to sign the pact even though he and Hitler hated each other. It was a truce to agree to share Poland. This would help Hitler avoid a war on two fronts and give him back up from the USSR. This made him more confident about invading Poland even though Britain and France had promised to protect them.

Key people

Mussolini
Lord Lytton
Emperor
Haile Selassie
Pierre Laval
Samuel Hoare





The Depression

The Wall Street Crash and subsequent depression made countries around the world look inwards and desperate to sort their own problems. This meant there was less international cooperation. Desperate people turned to extremist parties and Leaders including Hitler and Mussolini. The League also could not afford to put effective economic sanctions on aggressors.

Treaty of Versailles

By the 1930's many people believed that Germany had been treated too harshly including Britain. As a result they didn't stop the Anschluss. Germany had lost land to create new countries like Poland (also the USSR who wanted the land back) and Czechoslovakia. Hitler has promised to overturn the Treaty of Versailles and reunite all German speaking peoples in a greater Germany.

KEY VOCABULARY/ TERMS

Tier 2 - significant, conclude, imply, attitude, contrast, overall, cooperate, furthermore, infer, bias, widespread, trigger

Tier 3 - Communism, Mein Kampf, Lebensraum, Treaty of Versailles, Manchuria, Abyssinia, Depression, aggressors, economic sanctions, international cooperation, appeasement, Nazi-Soviet Pact, Anschluss, dictators, extremist.

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History Knowledge Organiser
From war to peace and back again 3. Causes of WW2.

Questions		Answers
1	What was the name of the book Hitler wrote?	
2	What was Lebensraum?	
3	What was Hitler's opinion of Communism?	
4	What made the League of nations weak?	
5	What had Manchuria shown us about the League?	
6	What had Abyssinia demonstrated about the League?	
7	What did the Wall Street Crash lead to?	
8	What types of political parties did people turn to?	
9	Did the Wall Street Crash help or hinder international cooperation?	
10	What was the policy of appeasement?	
11	When was the Anschluss with Austria?	
12	When was the Munich Agreement?	
13	When was the Nazi Soviet Pact?	
14	Why was this pact surprising?	
15	How had people's attitudes to the Treaty of Versailles changed?	
16	Who was the leader of Abyssinia (Ethiopia) who asked the League for help?	
17	Who was the dictator of Italy?	
18	Who was the leader of the USSR?	
19	Who wrote a report about the Manchurian crisis?	
20	Which two men tried to complete a secret deal over Abyssinia?	

Geography 9.1.1 – Coastal Landscapes

1 - Processes

There are three main processes: erosion, transportation and deposition.

1. Erosion

Attrition: Rocks in the load bash together to become smoother/smaller.

Solution: A chemical reaction that dissolves rocks in cliffs.

Abrasion: Rocks hit or rub against the base of a cliff and break pieces apart.

Hydraulic Action: Water enters cracks in the cliff, as the trapped air compresses it puts pressure on the crack making it bigger and weaker

2. Transportation

Solution: Minerals dissolve in water and are carried along.

Suspension: Sediment is carried along in the flow of the water.

Saltation: Pebbles that bounce along the seabed.

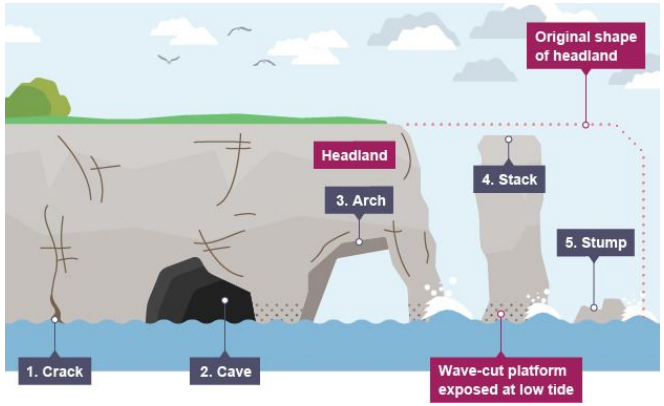
Traction: Boulders that roll or slide along the seabed.

3. Deposition

Due to energy being lost as water gets shallower or wind dies down. Heaviest material is dropped first.

3 - Formation of a stack

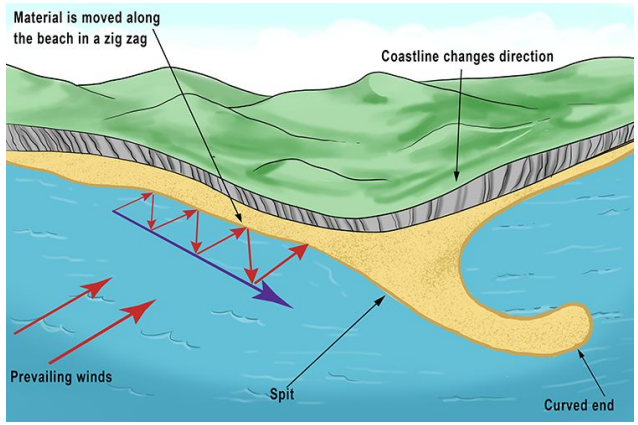
Stacks are formed by erosion.



1. Formed where a headland juts out from the coast. Erosion (hydraulic action and abrasion) widens cracks in the cliff face over time.
2. Eventually the crack develops into a cave.
3. Caves from both sides of the headland break through to form an arch.
4. The top of the arch is weakened by weathering and the base is widened by erosion until the arch collapses to form a stack
5. Further weathering and erosion turns the stack into a stump

4 - Formation of a spit

Spits are formed by deposition.



1. Formed where longshore drift transports material along the beach in a saw-tooth motion.
2. When there is a sudden change in direction of the coastline deposition occurs due to a loss of energy when hitting 'slack' (slow moving) water
3. Over time the deposited material will extend out from the coastline - This is called a spit.
4. Sand blown from the spit is deposited in the sheltered area behind the spit. This is called a salt marsh.
5. A change in prevailing wind direction forms a hook on the end of the spit.

5- Key terms

Erosion The breakdown and removal of material such as rocks.

Transportation The carrying of material, as load, from one place to another.

Deposition The dumping of the material being transported.

Questions

1 - Processes

What are the three main processes?

What are the four types of erosion?

What is attrition?

What is solution?

What is abrasion?

What is hydraulic action?

What are the four types of transportation?

What is saltation?

What is traction?

What is solution?

What is suspension?

Why does deposition happen?

What material is deposited first?

What process is both a type of transport and a type of erosion?

In what way is attrition different to abrasion?

3 - Formation of a stack

What process creates a stack?

Where on the coast are stacks formed?

What is a stump?

Draw a diagram of a headland and label the key parts.

Describe how a stack is formed. Remember to use key terms and keep the description in sequence by making use of connectives:

Key terms:
Crack
Cave
Arch
Stack
Stump
Erosion
Weathering

Connectives:
Firstly
Then
Next
Eventually
Finally
After this

4 - Formation of a spit

What process creates a spit?

What is longshore drift?

Where on the coast are spits formed?

Draw a diagram of a spit and label the key parts.

Describe how a spit is formed. Remember to use key terms and keep the description in sequence by making use of connectives.

Key terms:
Longshore drift
Transportation
Deposition
Change in
Direction
Wind
Salt marsh

Connectives:
Firstly
Then
Next
Eventually
Finally
After this

5- Key terms

What is erosion?

What is transportation?

What is deposition?

INNOVATION

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Textiles Knowledge Organiser
Year 9 – Decorative techniques

FCAT
The best we can be

Key Vocabulary Learn the spelling and meaning of each word.	
Appliqué	A method where shapes are cut from fabric and sewn by hand or by machine onto a background to create an image or picture.
Transfer paint	– a special paint that is used to paint a design onto paper and then transferred onto fabric using the heat press.
Hand Embroidery	The art of working raised and ornamental designs on fabric with a needle.
Heat press	Large metal plates that lock together and are used instead of an iron to transfer the design from paper to fabric.
Fabric pens	Like felt tip pens but can be used on fabric.
Resist dyeing	A resist is something added to the fabric to stop it from absorbing the dye. Wax is used in batik, while string or rubber bands are used in the tie-dye process.
Machine embroidery	To use the sewing machine to create decorative stitching.
Free machine embroidery	To use the sewing machine to draw designs freehand.
Embellish	To add other decoration to the fabric.

Textiles Knowledge Organiser
Year 9 – Decorative techniques

Key Vocabulary Write out the definition of the keywords.	
Appliqué	
Transfer paint	
Hand Embroidery	
Heat press	
Fabric pens	
Resist dyeing	
Machine embroidery	
Free machine embroidery	
Embellish	

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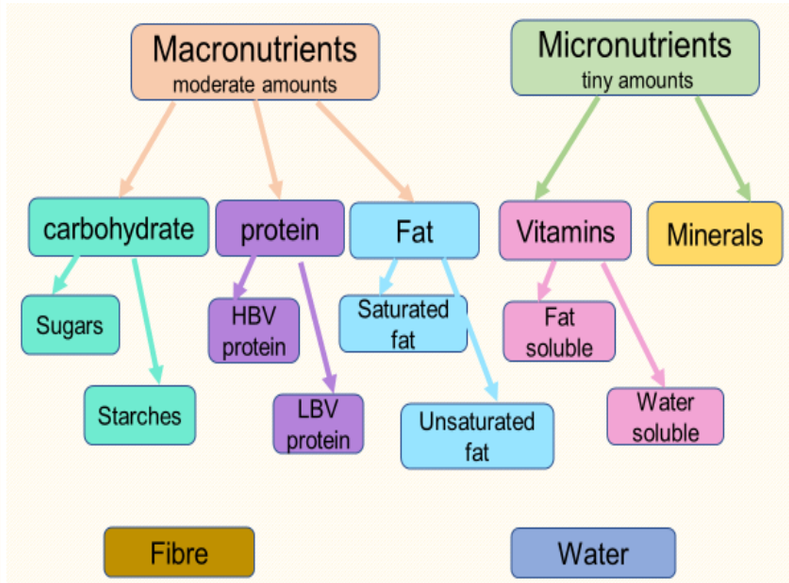
Year 9 Food Knowledge Organiser
Nutrition: Function of Nutrients in the body – Protein and Carbohydrates

FCAT
The best we can be

Nutrients



Protein

What is the function of protein?

- Protein provides the amino acids for the body to grow especially in children and pregnancy
- Protein is used to repair body tissues after illness, injury or surgery
- Produces enzymes for digesting foods
- A secondary source of energy for the body
- Protein contains a variety of amino acids with different forms of protein containing all or some of the amino acids needed by the body

Types of protein.

Proteins : HBV

Proteins that contain all the amino acids needed by the body are called High Biological value HBV – all animal sources except soya

Proteins : LBV

Plant proteins that contain some of the amino acids needed are called Low Biological value LBV – all plant sources. By eating a variety of LBV you can get all the amino acids needed

Carbohydrate

What is the function of carbohydrate?

- Carbohydrate provides an important source of energy for the body.
- Carbohydrate provides 16kJ per gram which is used both for energy to move and be active as well as energy for body processes such as breathing, heart beating
- Vitamin B (thiamine and riboflavin) help release the energy to the body
- All carbohydrates are converted to **glucose** when digested and this is converted to energy
- If the energy is not used up then it is stored as body fat

Carbohydrate Types

Carbohydrates: Sugars

- Sugar gives a fast release of energy that means your blood sugar levels go up
- Some foods contain natural sugars such as milk, fruit & honey.

Many foods such as fizzy drinks, cakes, biscuits & jam contain added table sugars. This is the sugar that can be bad for our health and our teeth!

Carbohydrate Types

Carbohydrates: Starches

Starchy foods provide a slow release of energy and help our blood sugar levels stay the same so we don't feel tired. (Also known as complex carbohydrates)

KEY VOCABULARY/ TERMS

High biological value, Low biological value, complex, complimentary, protein, carbohydrate, essential, starch

Year 9 Food Knowledge Organiser
Nutrition: Function of Nutrients in the body

Protein	Carbohydrate
What is the role of protein in the body?	What is the role of carbohydrate in the body?
What is the difference between LBV and HBV proteins?	What is the difference between simple and complex carbohydrates?
What is the reference intake (RI) for protein?	Identify some food sources of simple and complex carbohydrates.
Identify some food sources of LBV and HBV proteins.	What happens if you don't eat enough/too much carbohydrate?
How do some people become protein deficient?	Are there any health problems associated with carbohydrate based foods?
What are the health problems if you become protein deficient?	What is the reference intake (RI) for carbohydrate?

KEY VOCABULARY/ TERMS
Learn the spelling of each word and look up any you do not know.

High biological value	Low biological value	Complex	Complimentary
Amino Acid	Essential	Starch	Deficient
Simple	Protein	Carbohydrate	Reference intake (RI)

KS3 | BADMINTON BASIC SKILLS

Big picture: To develop knowledge and understanding of the basic rules in badminton

Types of Shots

Back Hand Short Serve
This serve is most widely used in doubles. It is more common to use the backhand serve than the forehand one. The flick serve starts off in the same way as a Low Serve, but a last minute change of pace and flick of the wrist should take the shuttle over the opponents reach, but should not allow them much time to run back and hit an effective return.

Push Return
This shot is particularly useful if you are returning your opponent's serve and you want to push it away from him. As the terms suggest, you push it away from your opponent , so your opponent cannot get to it. It's very useful, with net shots in general, to hold the grip a little bit closer up the handle like this, because you typically get allot more control, even though a little less power.

Back Hand Drive
This is a safe shot in badminton and if played correctly it will force an opponent to hit an upward return, giving the other player a chance to attack. The backhand drive is the same as the forehand version except for the slight grip change, and starting in the back swing with the palm facing down and finishing the stroke with it facing up, opposite to that of the forehand.

Net Play
Badminton net play is a vital skill when you're playing along the net with your opponent. This is a fairly difficult skill to master because you need EXTREMELY good control over your racket.

Back Hand Clear
This is one of the toughest shots to play in badminton. Usually, the backhand clear is used to get a player out of trouble and the player is not in the position to play a forehand shot. However, the purpose is still the same, to force your opponent as far back as possible.

Singles Tactics

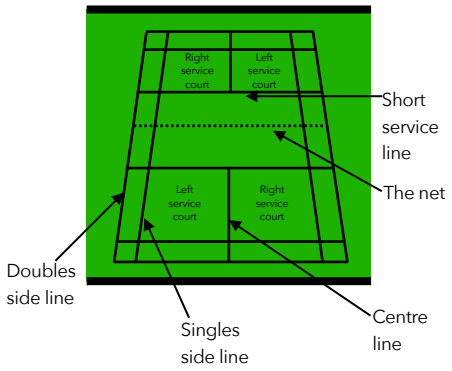
- Make opponent move quickly by using different shots
- Make shots to the corners
- After making a shot, always come back to the center of the court
- Make quick decisions (what kind of shot you are going to make and where to hit the birdie)
- Change the pace regularly but unexpectedly
- Overhead strokes must look the same
- Long and deep serves work better

Doubles Tactics

- Short serves are better
- Target the space between opponents
- When receiving, play aggressively toward the net
- Should switch quickly from defence to attack and from attack to defence.
- When attacking, adopt a formation with one player in the front part of the court, and the other player towards the rear part of the court
- When defending, adopt a side-by-side formation in order to cover the full width of the doubles court.

The court

The court markings
Here is a labelled image of the court markings:

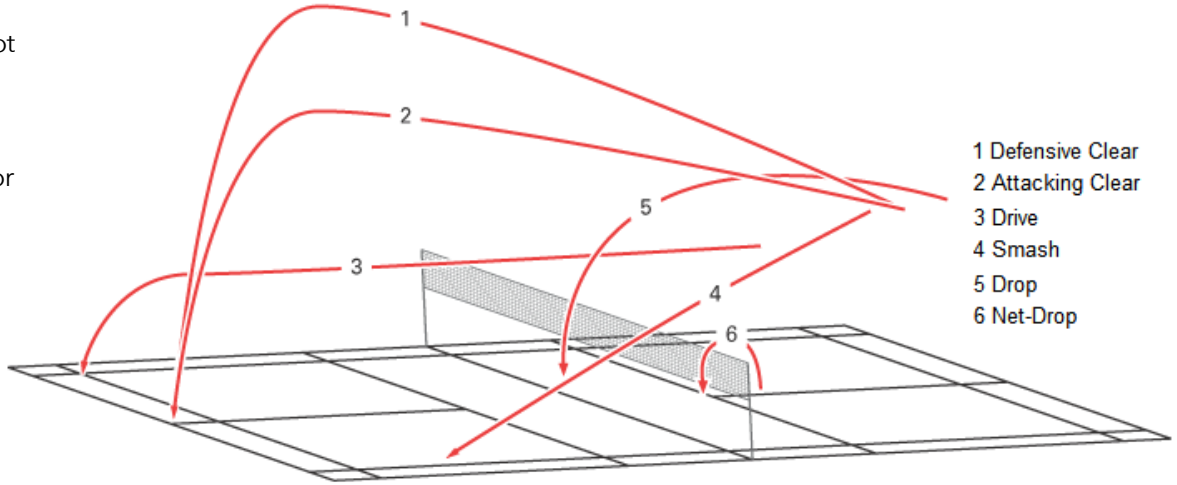


Shot Areas

Below is the court areas where the shuttle should be landing for each shot during a game situation.

The areas may slightly change depending on whether it is a singles or doubles game.

This would relate to the HANDS and HEAD part of the curriculum as pupils will need to understand the rules and tactics whilst executing the shot using their skills.



HOMEWORK | SUPPORT | UNDERSTANDING

These questions, key terms and links can all be used for homework/ home learning on this topic

Key Questions

1. Describe how to perform the flick serve.
2. Why is the flick serve effective?
3. Why is the flick serve used in doubles rather than singles?
4. How should you return the flick serve? Why?
5. Describe how to perform the push return.
6. Why is the push return used in badminton?
7. How do you perform the back hand drive?
8. When should this be used in badminton?
9. Why is net play an important tactic/strategy to use?
10. What makes a good net player?
11. Describe how to perform the back hand clear.
12. Describe singles tactics in badminton.
13. Describe doubles tactics in badminton.
14. What is a good way to tire out your opponent?
15. Why is it important to be able to play a range of different shots?

Key Terms

Flick serve - *noun*
a fast and offensive serve that travels in an upwards direction towards the far service line.

Effective - *adjective*
successful in producing a desired or intended result.

Return - *verb*
give, put, or send (something) back to a place or person.

Push shot - *noun*
gentle shot played by pushing the shuttle with little wrist motion, usually from net or midcourt to the opponent's midcourt.

Tactic/Strategy - *noun*
strategic intention of preparing the player or team in real conditions of a match and solve situation in match.

Back hand - *noun*
hitting the shuttle with your racket WHILE the back of your hand is facing the shuttle

Youtube Links

The Flick serve -
https://www.youtube.com/watch?v=0unO4JuDBxQ

Push Return
https://www.youtube.com/watch?v=85OlpokFCaw

Backhand Drive -
https://www.youtube.com/watch?v=BHDNpeclhmg

Net Play -
https://www.youtube.com/watch?v=2ByjAixfocA

Backhand Clear
https://www.youtube.com/watch?v=96gsbytl_7c

KS3 | NETBALL RULES & SKILLS

Big picture: To develop knowledge and understanding of the complex skills in Netball

Rules

Distance

In netball it is important to stand 0.9 (1meter) away from the person holding the ball. Netball is a non contact game therefore this would be classed as a fault.

Pivot

The landing foot must remain where it first landed. You can move the second foot which you did not land on. The second foot is also known as the pivoting foot, you can rotate around in a circle using this foot to push off from.

Footwork

Both feet or one foot must be grounded when landing. If you landed on a single foot that must not move. If you land 2 feet you can decide which foot to move.

The Court

The court is divided into 3 sections, attacking third, centre third and defending third. All positions have specific areas they can move around in.

Reposession

When you accidentally or deliberately drop the ball and try to regain possession by picking the ball up. A free pass is awarded for this.

Interception

Interception is when a defending play interrupts the play of the other team. They can do this by catching the ball or knocking the ball away/out of play.

This is used to stop the opposition from getting closer to the attacking third and scoring.

Footwork/Jumping

Turning in the air

- Run to receive the ball at speed
- Jump with power
- Catch and turn with the ball in hands
- Turn your hips to face a different direction
- Rotate head round to face the same direction as hips
- Land with bent knees

Jumping for the ball

It is important to jump for the ball when defending or attacking to give you an advantage over the opposition. You may need to jump to intercept the ball or jump to retrieve a loose ball, a ball not currently in possession.

Shooting

- Bend your knees
- Feet hip width apart
- Elbows at 90 degrees
- Strongest hand to hold the ball
- Weaker hand, supports the ball with fingertips
- Flick your wrists
- Follow through, extending arms above

When shooting, if the ball bounces off the netball net you must try to catch the ball to try and shoot again. However the defending team will also be trying to intercept the ball.

Defending

Shadowing

When players shadow another, they are trying to force an error on the opponent. This means they are trying to put them off.

- Stand in front of the opponent
- Stand with body half way in front of the opponent
- Keep arms to the side of your body to avoid contact
- Keep your feet hip width apart
- Always be watching the attacker and the ball
- Fast small steps staying with your opponent.

Double Marking

When two players guard a single opposing player to ensure that the player remains without the ball.

When double marking players should stand side on to the attacker, its important to have one person either side of the player to avoid the player rolling off, using blind side.

Attacking

The roll off

A movement in which a player will bend away from the opposing player and quickly turn their back while moving in a different direction.

- Run in a diagonal line towards feeder
- Push off with your inside leg to turn your back to defender
- Identify their blind spot
- Orbit around the defender
- Head towards their blind side to receive the pass

Umpire/official

What does an umpire do?

Umpires will officiate half a court, on the side line. The upper will score to the right of the direction they are facing. When umpiring the game they will move up and down the court using the side step motion

If the ball reaches the goal circle that they are officiating, the umpire will run behind the net, whilst remaining off court.

The umpire will award a toss up if there is no distinct player with clear possession of the ball. You should face the way you are shooting with your hands by your side at this time.

Officiating Vocabulary

- Replaying/Repossession
- Contact
- Obstruction
- Over a third
- Held ball
- Footwork
- Toss up

Set Play

It refers to the execution of plan prearranged from the beginning, that comes to fruition later.

Set plays are usually used on centre passes to execute a strong start to the game and ensure the team gain possession of the ball.

HOMEWORK | SUPPORT | UNDERSTANDING

These questions, key terms and links can all be used for homework/home learning on this topic

Key Questions

1. What is footwork?
2. What is a pivot?
3. What are the benefits of turning in the air?
4. If you land with two feet, which foot can you move?
5. Name 2 teaching points for the turn in the air?
6. What is the roll off?
7. Explain what set play is.
8. How can you effectively move the ball up court as an attacker?
9. Name 2 teaching points for the roll off?
10. Elaborate on the teaching points you have mentioned?

Key Terms

Set play - *noun*
(in sport) a prearranged manoeuvre carried out from a restart by the team who have the advantage.

Pivot - *noun*
Turning around whilst keeping one foot planted.

Repossession- *noun*
the action of retaking possession of something

Footwork - *noun*
the manner in which one moves one's feet.

Marking - *noun*
The act of sticking with a player to avoid opposition from gaining any advantage

Shooting - *noun*
An act of scoring or attempting to score .

Interception - *noun*
The action or fact of preventing someone or something from continuing to a destination.

Umpire - *noun*
(in some sports) an official who watches a game or match closely to enforce the rules and arbitrate on matters arising from the play.

Youtube Links

The Dodge - LINK

Shooting LINK

Marking LINK

Court LINK

Over a third LINK

Passing LINK

Rules Overview LINK

Interception LINK

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ART Knowledge Organiser
Year 9 : Term 1:1

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ARTIST – ROY LICHTENSTEIN

Relevant dates

1923 - 1997

Artist information

American painter, sculptor, printmaker and decorative artist. His paintings based on the motifs and style of comic strips and advertisements made him one of the central figures of American POP ART.

Description of work

His pictures are usually on a large scale, often painted in acrylic using limited flat colours. His best known works feature thick outlines, bold colours and Benday Dots to create lighter variations of colours. Rather than attempt to reproduce his subjects, his work tackles the way mass media portrays them. In addition to paintings, he also made sculptures in metal and plastic including some notable public sculptures

KEY VOCABULARY

Primary colours – Three pure colours – red, yellow and blue
Graphical – A picture made by sticking cloth, pieces of paper, photographs and other items onto a surface.
Pop Art – The name given to a group of artists in 60's America, who use everyday objects as inspiration for their art work.

WORK EXAMPLE

ASSESSMENT CRITERIA

ASSESSMENT OBJECTIVE 1 - Develop ideas through investigations, demonstrating critical understanding of sources.

ASSESSMENT OBJECTIVE 2 - Refine work by exploring ideas, selecting and experimenting with appropriate media, materials, techniques and processes.

ASSESSMENT OBJECTIVE 3 - Record ideas, observations and insights relevant to intentions as work progresses.

ASSESSMENT OBJECTIVE 4 - Present a personal and meaningful response that realises intentions and demonstrates understanding of visual language.

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Write 3 relevant facts about the artist
1.
2.
3.

Write the definitions for these words
Primary colours –
Graphical –
Pop Art –

Write about your likes/dislikes of the artist's work
Likes:
Dislikes:

Copy part of the picture in your book

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