



Rayner Stephens  
HIGH SCHOOL

**YEAR 8**

**KNOWLEDGE ORGANISERS**

**Spring Term 2024/25**



# Year 8 Blood Brothers Knowledge Organiser

Key Vocabulary:		
1	Proletariat	Working-class
2	Bourgeoisie	Middle-class
3	Stereotypes	Widely held belief about something or someone
4	Characterisation	The way characters are crafted using their description, speech and interactions with other characters.
5	Dialect	Language that is spoken in a particular part of the country.
6	Colloquialism	Informal language
7	Dramatic irony	The audience know more than the characters
9	Cyclical structure	The ending of a narrative is shown at the beginning

10	Plot Summary:
	<p>At the beginning we see a preview of the play's final moments - Mickey and Edward both die. Mrs Johnstone sings about how she can't afford to feed them.</p> <p>Mrs Johnstone goes to clean at Mrs Lyons' house. Mrs Lyons reveals that she and her husband can't have children. Mrs Lyons persuades Mrs Johnston to give her one of the babies that she is pregnant with.</p> <p>Mrs Lyons takes one of the babies. Mrs Lyons fires Mrs Johnstone and tells her that both boys will die if they ever find out they are twins.</p> <p>When the twins are seven, Mickey and Edward meet. Mrs Johnstone is horrified when she realises who Mickey's new friend is. Mickey goes to see Edward but Mrs Lyons sends him away. Edward is angry and uses swear words he learnt from Mickey. Edward sneaks out to play with Mickey and Linda. Mrs Lyons tells her husband that they need to move away. Soon afterwards, a policeman catches Edward, Mickey and Linda misbehaving, which persuades Mr Lyons to move his family. Edward goes to Mrs Johnstone's house upset about moving and she gives him a locket. The Johnstone's find out that they're being moved too.</p> <p>When Edward is fourteen, he is suspended from his boarding school. Mickey and Linda are also suspended from their comprehensive school. Back home, Mickey and Edward meet again and recognise each other. Mrs Lyons sees the boys together and tries to bribe Mrs Johnstone to move away. When she refuses, Mrs Lyons tries to attack her. Edward leaves for university and Mickey and Linda get married. Unfortunately, Mickey loses his job and has to go on the dole. Edward comes home from university. Mickey resents him and they fall out. Mickey's sentenced to seven years in prison. He becomes depressed. Mickey is released early but he is still depressed. Linda begs him to stop taking the pills. Linda gets them a new house and a job for Mickey, but Mickey knows that Edward, who is now a local councillor, is responsible for both. Linda and Edward kiss. Mrs Lyons shows Mickey that Edward and Linda are together. Mickey takes Sammy's gun and goes to confront Edward at the Town Hall. Mrs Johnstone tells the boys they are brothers. Mickey loses control and accidentally shoots Edward. The police shoot and both Eddie and Mickey die.</p>

Characters:	
11	<b>Mrs Johnstone</b>
	Mickey , Edward and Sammy's mother. She is working-class and gives up Edward so he'll have a better life.
12	<b>Mickey Johnstone</b>
	The twin Mrs Johnstone keeps. He's a friendly child but ends up unemployed and in trouble with the law.
13	<b>Mrs Lyons</b>
	A middle-class woman who longs for a child. She manipulates Mrs Johnstone into giving Edward to her.
14	<b>Eddie Lyons</b>
	The twin Mrs Lyons takes. He's well- educated and grows up to be a successful local councillor.

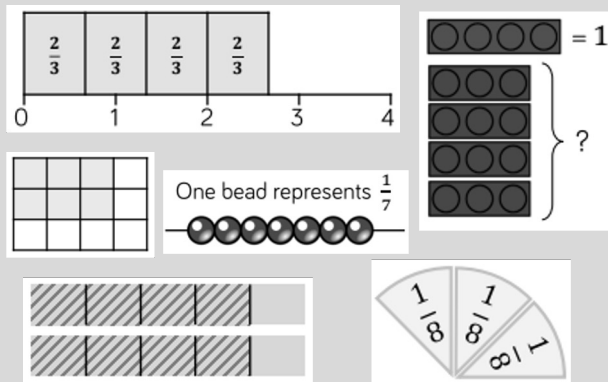
# Year 8 Mathematics – Knowledge Organiser – Multiplying and Dividing Fractions – Spring Term

## Key Vocabulary:

1	Unit Fraction	A fraction with 1 as its numerator, and an integer (whole number) as its denominator. E.g. $\frac{1}{4}$
2	Numerator	The top number in a fraction.
3	Denominator	The bottom number in a fraction.
4	Product	The answer when two or more values are multiplied together.
5	Whole	All of something. A thing that is complete in itself.
6	Non-unit Fraction	A fraction where the numerator is greater than 1. E.g. $\frac{3}{4}$
7	Commutative	An operation is commutative when you can change the order of the calculation and still get the same answer. Both addition and multiplication are commutative.
8	Quotient	The answer we get after we divide one number by another.
9	Reciprocal	The reciprocal of a number is always 1 divided by the number. E.g. the reciprocal of 2 is $\frac{1}{2}$ . When we multiply a number by its reciprocal, we get 1. E.g. $2 \times \frac{1}{2} = 1$

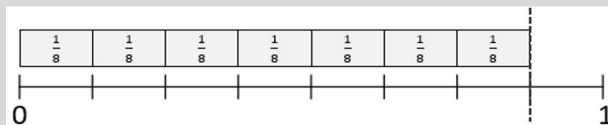
## 10 Representing Fraction Multiplication

Fraction multiplication can be represented in many different ways, using the idea of repeated addition as well as pictures/physical objects and bar models.



## 11 Multiplying a Fraction by an Integer

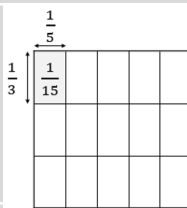
We can use a number line to understand how to multiply a fraction by an integer. For example:  $7 \times \frac{1}{8} = \frac{7}{8}$



## 12 Finding the Product of Unit Fractions

We can use a grid to understand how to find the product of a pair of unit fractions. Remember, each side of the original grid has a unit length of 1.

For example:  $\frac{1}{3} \times \frac{1}{5} = \frac{1}{15}$

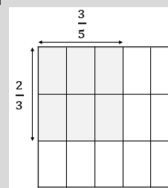


## 13 Finding the Product of Any Fractions

We can continue to use a grid to understand how to find the product of any fractions. We should remember to simplify if possible.

For example:  $\frac{3}{5} \times \frac{2}{3} = \frac{6}{15} = \frac{2}{5}$

One way to quickly multiply fractions is to multiply the numerators and multiply the denominators.

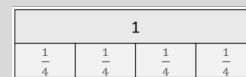


## 14 Dividing an Integer by a Fraction

We can use bar models to understand how to divide an integer by a fraction, e.g.,  $1 \div \frac{1}{4} = 4$

We can link dividing by a fraction with multiplying by an integer to help us understand the relationship between the two.

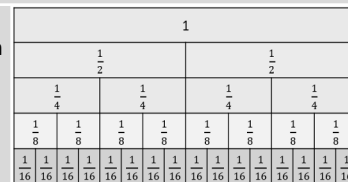
For example:  $3 \div \frac{1}{4} = 12$  and  $3 \times 4 = 12$



## 15 Dividing a Fraction by a Unit Fraction

We can use a fraction wall to help us divide a fraction by a unit fraction. Think about how many unit fractions we would need to make the original fraction. E.g.,  $\frac{1}{2} \div \frac{1}{4} = 2$

E.g.,  $\frac{1}{2} \div \frac{1}{4} = 2$



## 16 Understanding and Using the Reciprocal

We need to know that:

- The reciprocal of a number is always 1 divided by the number.
- Division is the same as multiplying by the reciprocal.
- A number multiplied by its reciprocal is always 1.

For example:  $7 \div \frac{1}{5} = 35$  and  $7 \times 5 = 35$

## 17 Dividing any Pair of Fractions

Now that we know dividing by a number is the same as multiplying by its reciprocal, we can apply this to divide any pair of fractions.

For example:

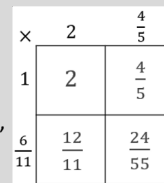
$$5 \div \frac{2}{3} = 5 \times \frac{3}{2} = \frac{15}{2} = 7\frac{1}{2}$$

$$\frac{5}{9} \div \frac{2}{3} = \frac{5}{9} \times \frac{3}{2} = \frac{15}{18} = \frac{5}{6}$$

## 18 Multiplying and Dividing Improper and Mixed Fractions

When multiplying mixed numbers, we can convert them into improper fractions first before multiplying the numerators and denominators, then simplifying.

Another way would be to use a grid method, splitting up the mixed number into integers and fractions, e.g.,  $2\frac{4}{5} \times 1\frac{6}{11}$



## 19 Multiplying and Dividing Algebraic Fractions

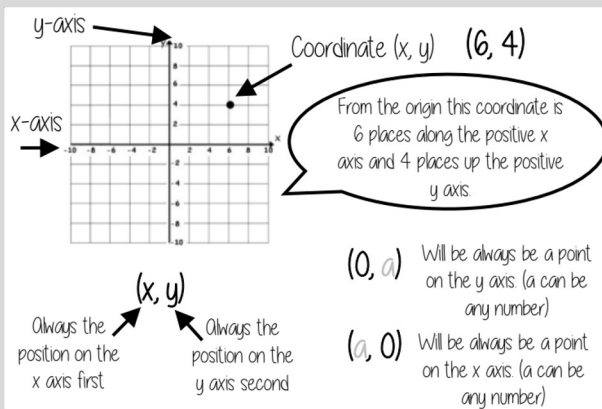
Although we are using algebra, multiplying and dividing algebraic fractions follows the same rules as numerical fractions.

# Year 8 Mathematics – Knowledge Organiser – Working in the Cartesian Plane – Spring Term

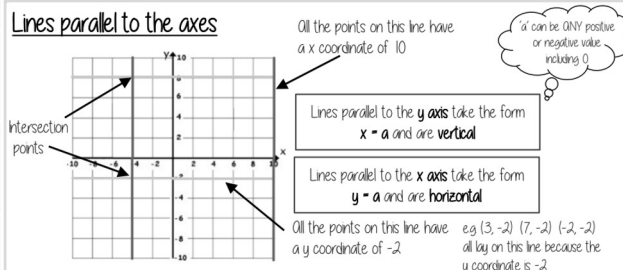
## Key Vocabulary:

1	Quadrant	Any of the 4 areas made when we divide a graph by the x-axis and y-axis.
2	Co-ordinate	A set of values that show an exact position. E. g. (3, 4); the first value being the x coordinate and the second value the y coordinate.
3	Horizontal	A straight line from left to right (parallel to the x-axis).
4	Vertical	A straight line from top to bottom (parallel to the y-axis).
5	Origin	(0,0) on a graph. The point where the two axes cross.
6	Parallel	Lines that never meet.
7	Gradient	The steepness of a line.
8	Intercept	The point where lines cross.
9	Axes	The reference lines on a graph that are used to plot values or coordinates.
10	Midpoint	The point halfway along.
11	Direct Proportion	Where two variables increase by the same amount. E.g. pencils cost 12p each, for every pencil you buy the cost goes up by 12p.

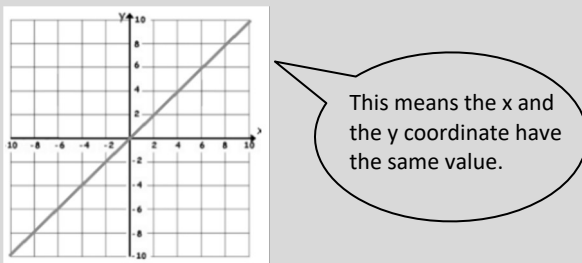
## 12 Coordinates in Four Quadrants



## 13 Lines Parallel to the Axes



## 14 Recognising and Using the Line $y = x$

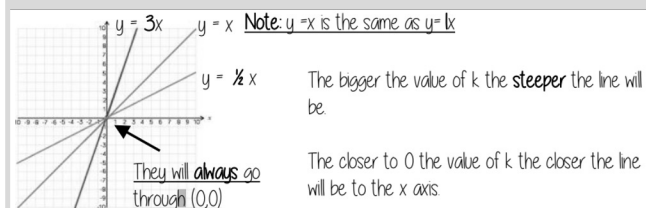


Examples of coordinates on this line (0, 0) (-3, -3) (8, 8)

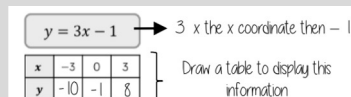
The axes **scale is important** – if the scale is the same  $y = x$  will be a straight line at  $45^\circ$ .

## 15 Recognising and Using the Lines $y = kx$

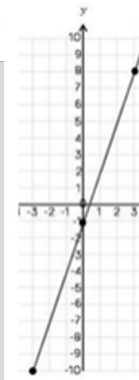
The value of  $k$  changes the steepness of the line.



## 16 Plotting $y = mx + c$ Graphs



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

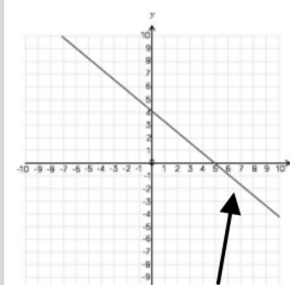


You only need a minimum of two points to form a straight line.

Plotting more points help you to decide if your calculations are correct – they should make a straight line!

Remember to join the points to make a line. Use a ruler and a pencil!

## 17 Lines with Negative Gradients



Any straight-line graph with a negative x value has a negative gradient

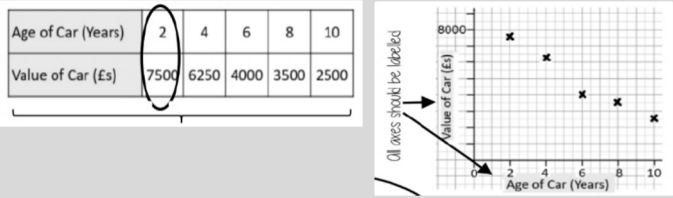
Eg  $y = -2x$   
 $y = -x$   $y + x = 12$

# Year 8 Mathematics – Knowledge Organiser – Representing Data – Spring Term

## Key Vocabulary:

1	Relationship	The link between two variables. For example: sunny days and temperature.
2	Outlier	Data that doesn't match the overall pattern or trend.
3	Frequency	The number of items in a given list or category.
4	Correlation	The mathematical definition for the type of relationship. This could be positive, negative or no correlation.
5	Line of Best Fit	A straight line on a graph that represents the trend or correlation of the data on a scatter graph.
6	Origin	Where two axes meet on a graph. Often referred to as (0,0).
7	Discrete	Data that you can count. For example, the number of students in a class.
8	Continuous	Quantitative (numerical) data that has an infinite number of possible values within its range.
9	Quantitative	Numerical data.

## 10 Drawing and Interpreting Scatter Graphs

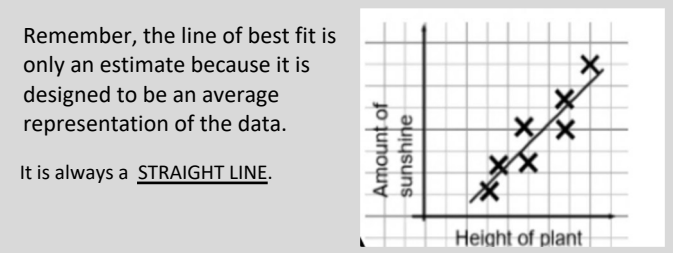


The x-axis should fit all the values on it and be equally spread out.

## 11 Understanding and Describing Linear Correlation

Positive Correlation	Negative Correlation	No Correlation
As one variable increases so does the other variable.	As one variable increases the other variable decreases.	There is no relationship between the two variables.

## 12 Drawing and Using a Line of Best Fit



## 13 Constructing and Interpreting Two Way Tables

Two-way tables represent discrete information in a visual way that allows you to make conclusions, find probability or find totals of subgroups.

	Squares	Circles	Total
Green	2	3	5
Red	2	1	3
Total	4	4	8

Using your two-way table

To find a fraction e.g. What fraction of the items are red? 3 red items but 8 items in total =  $\frac{3}{8}$

**Interleaving:** Use your fraction, decimal percentage equivalence knowledge

## 14 Ungrouped Data in Frequency Tables

**Ungrouped Data**

The number of times an event happened

The table shows the number of siblings students have. The answers were 3, 1, 2, 2, 0, 3, 4, 1, 1, 2, 0, 2

2 people had 0 siblings. This means there are 0 siblings to be counted here.

Number of siblings	Frequency
0	2
1	3
2	4
3	2
4	1

Best represented by discrete data (Not always a number)

2 people have 3 siblings so there are 6 siblings in total

OVERALL there are 0 + 3 + 6 + 6 + 4 Siblings = 21 siblings

## 15 Grouped Data in Frequency Tables

If we have a large spread of data, it is better to group it. This is so it is easier to look for a trend. Form groups of equal size to make the comparison more valid and spread the groups out from the smallest to the largest value.

Discrete Data: The groups do not overlap

Cost of TV (£)	Tally	Frequency
101 - 150		7
151 - 200		11
201 - 250		5
251 - 300		3

We do not know the exact value of each item in a group – so an estimate would be used to calculate the overall total (Midpoint)

Continuous Data: To make sure all values are included inequalities represent the subgroups

x	Frequency
Weight(g)	
40 < x ≤ 50	1
50 < x ≤ 60	3
60 < x ≤ 70	5

e.g. this group includes every weight bigger than 60kg up to and including 70kg



# Year 8 Mathematics – Knowledge Organiser – Tables and Probability – Spring Term

## Key Vocabulary:

1	Outcomes	The result of an event that depends on probability. E.g. rolling a dice: 1, 2, 3, 4, 5 or 6 are all outcomes.
2	Probability	The chance that something will happen.
3	Set	A collection of "things" (objects or numbers). E.g. {1, 2, 3, 4} is the set of counting numbers less than 5.
4	Chance	The likelihood of a particular outcome.
5	Event	The outcome of a probability – a set of possible outcomes.
6	Biased	A built in error that makes all values wrong by a certain amount.
7	Union	Notation 'U' meaning the set made by combining the elements of two sets.
8	Sample Space	A diagram used to display all possible outcomes of an event.
9	Intersection	Notation '∩' meaning the intersection of two sets. It has only the elements that are common to both sets.
10	Two-Way Table	A way of sorting and representing data so that the frequency of each category can be seen quickly and easily.

## 11 Sample Space Diagrams

### Construct sample space diagrams



Sample space diagrams provide a systematic way to display outcomes from events

The possible outcomes from tossing a coin

The possible outcomes from rolling a dice

	1	2	3	4	5	6
H	1H	2H	3H	4H	5H	6H
T	1T	2T	3T	4T	5T	6T

This is the set notation to list the outcomes S =

In between the { } are a; the possible outcomes

$$S = \{ 1H, 2H, 3H, 4H, 5H, 6H, 1T, 2T, 3T, 4T, 5T, 6T \}$$

### Probability from sample space

The possible outcomes from rolling a dice

The possible outcomes from tossing a coin

	1	2	3	4	5	6
H	1H	2H	3H	4H	5H	6H
T	1T	2T	3T	4T	5T	6T

What is the probability that an outcome has an even number and a tails?

This is the set notation that represents the question P

$$P(\text{Even number and Tails}) = \frac{3}{12}$$

In between the ( ) is the event asked for

There are three even numbers with tails

Numerator: the event

Denominator: the total number of outcomes

There are twelve possible outcomes

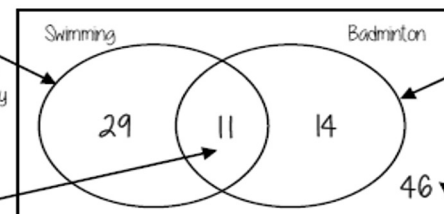
## 12 Venn Diagrams

### Probability from Venn diagrams

100 students were questioned if they played badminton or went to swimming club. 40 went swimming, 25 went to badminton and 11 went to both.

This whole curve includes everyone that went swimming. Because 11 did both we calculate just swimming by 40 - 11

The intersection represents both swimming AND badminton



This whole curve includes everyone that went to badminton. Because 11 did both we calculate just badminton by 25 - 11

The number outside represents those that did neither badminton or swimming

$$P(\text{Just swimming}) = \frac{29}{100}$$

$$100 - 29 - 11 - 14$$

## 13 Two-Way Tables

### Probability from two-way tables

	Car	Bus	Walk	Total
Boys	15	24	14	53
Girls	6	20	21	47
Total	21	44	35	100

$$P(\text{Girl walk to school}) = \frac{21}{100}$$

The event

The total in the set

The total number of items

## 14 Product Rule for Counting

### Product Rule

The number of items in event a

x

The number of items in event b

# Year 8 Mathematics – Knowledge Organiser – Brackets, Equations and Inequalities – Spring Term

## Key Vocabulary

1	Simplify	Grouping and combining similar terms.
2	Substitute	Replace a variable with a numerical value.
3	Equivalent	Something of equal value.
4	Coefficient	A number used to multiply a variable.
5	Product	Multiply terms.
6	Highest Common Factor	The biggest factor or number that multiplies to give a term.
7	Inequality	Compares values showing if one is greater than, less than or equal to another.
8	Expression	A sentence with a minimum of two numbers and one mathematical operation.
9	Equation	A statement that two things are equal.
10	Term	A single number or variable.
11	Identity	An equation where both sides have variables that cause the same answer. Includes the $\equiv$ symbol.
12	Formula	A rule written with all mathematical symbols. E.g.: area of a rectangle. $a = b \times h$

## 13 Forming Expressions

For unknown variables, a letter is used in its place.

More than – **add**      Less than – **subtract**

E.g.: 4 more than  $t \longrightarrow t + 4$   
 8 less than  $k \longrightarrow k - 8$

Only similar terms can be grouped together.

Only similar terms can be grouped together  
 e.g. Find the perimeter of this shape  
 (Perimeter = length around outside of shape)

$t + 2t + 1 + t + 2t + 1 \longrightarrow 6t + 2$

## 14 Multiply Single Brackets

$3(2x + 4)$  can be represented as:

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

## 15 Factorise into a Single Bracket

$$8x + 4$$

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

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

$8x + 4 \equiv 2(4x + 2)$  This is also factorised, but the HCF has not been used.

## 16 Solve Equations with Brackets

$$3(2x + 4) = 30$$

$$6x + 12 = 30$$

$$-12 \quad -12$$

$$6x = 18$$

$$-6 \quad -6$$

## 17 Simple Inequalities

$<$  less than       $\leq$  Less than or equal to  
 $>$  More than       $\geq$  More than or equal to

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

$10 > x$   
 Say this out loud  
 "10 is more than the value"

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

$x + 2 \leq 20$   
 "my value + 2 is less than or equal to 20"

$x \leq 18$   
 The biggest the value can be is 18

## 18 Form and Solve Inequalities

Two more than treble my number is greater than 11

Form  $x \rightarrow x \times 3 \rightarrow +2 \rightarrow 11$   
 $3x + 2 > 11$

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

Check  
 This would suggest any value bigger than 3 satisfies the statement  
 $3 \times 3 + 2 = 11 \checkmark$        $10 \times 3 + 2 = 32 \checkmark$

# Year 8 Changing Substances Science Spring Term

## Key Vocabulary:

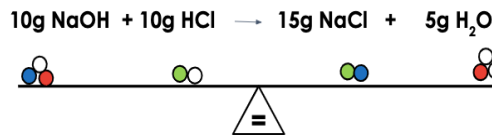
1	<b>Atom</b>	The smallest particle of an element that can exist.
2	<b>Chemical formula</b>	The symbols that show how many of each type of atom are present in an element or compound.
3	<b>Chemical change</b>	A chemical reaction where a new substance is formed.
4	<b>Combustion</b>	A high temperature reaction with oxygen (burning).
5	<b>Compound</b>	A substance made up of two or more elements chemically bonded together.
6	<b>Conservation of mass</b>	The law that says atoms cannot be created or destroyed in a chemical reaction so the total mass of products is equal to the total mass of reactants.
7	<b>Oxidation</b>	The gain of oxygen.
8	<b>Acid</b>	A substance which has a pH lower than 7.
9	<b>Coefficient</b>	A number placed in front of a chemical formula that applies to the whole formula.
10	<b>Subscript</b>	The small number in a chemical formula that only applies to the part of the formula directly before it.

## 8 Chemical and Physical Changes

A chemical change produces a new substance whereas in a physical change no new substance is produced.  
 A chemical change is irreversible whereas a physical change is reversible.  
 Melting, evaporating, condensing, freezing and sublimation are examples of physical changes because they only change the state (solid, liquid or gas) of the substance.  
 These processes only change the energy that each particle has (how much it moves) and not its arrangement or properties (e.g. its boiling or melting point).

## 9 Chemical Reactions

A chemical change can also be called a chemical reaction.  
 The number and type of atoms do not change in a chemical change and are only rearranged.  
 The total overall mass is conserved in a chemical change (the mass of the reactant is equal to the mass of the products).  
 Every reactant atom will become a product atom. Extra atoms cannot be made, and atoms cannot disappear.



## 10 Reactions of Metals with Oxygen

Metals react with oxygen to produce metal oxides.  
 The general equation is: Metal + oxygen → Metal oxide  
 Example 1: Copper + oxygen → copper oxide  
 Example 2: Lithium + oxygen → lithium oxide  
 These reactions are oxidation reactions because the metals gain oxygen  
 Reduction is the loss of oxygen  
 Oxidation is the gain of oxygen

## 11 Reactions of Metals with Acid

Acids react with some metals to produce salts and hydrogen  
 Metal + acid → salt + hydrogen  
 This can be remembered by MASH: Metal + Acid → Salt + Hydrogen  
 Example 1:  
 Copper + Hydrochloric acid → copper chloride + hydrogen  
 Example 2:  
 Sodium + Nitric Acid → sodium nitrate + hydrogen

## 12 Reactions of Acids with Alkalis, Bases and Metal Carbonates

Acids are neutralised by alkalis (e.g. soluble metal hydroxides) and bases (e.g. insoluble metal hydroxides and metal oxides) to produce salts and water,  
 Acid + alkali → salt + water  
 Acid + base → salt + water  
 Acids are neutralised by metal carbonates to produce salts, water and carbon dioxide.  
 Acid + metal carbonate → salt + water + carbon dioxide  
 The particular salt produced in any reaction between an acid and a base or alkali depends on the acid and metal in the base, alkali or carbonate  
 Hydrochloric acid produces chloride salts,  
 nitric acid produces nitrate salts,  
 and sulfuric acid produces sulfate salts

## 13 Tests for Gases

The test for hydrogen uses a burning splint held at the open end of a test tube of the gas. Hydrogen burns rapidly with a squeaky pop sound.  
 The test for carbon dioxide uses a solution of calcium hydroxide (limewater).  
 When carbon dioxide is shaken with or bubbled through limewater the limewater turns milky (cloudy)



# Year 8 Science Spring Term - Magnetism

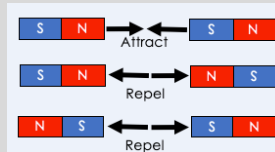
Key Vocabulary:		
1	Attract	A pulling force causing objects to move towards each other.
2	Bar magnet	A permanent magnet with a North pole and South pole.
3	Coil	A length of wire wrapped to form a spiral.
4	Core	The centre of an object.
5	Current	The rate of flow of charge.
6	Electromagnet	A solenoid (coil of wire) with a current flowing through it, containing an iron core.
7	Field Lines	Imaginary lines running from the North to South pole of a magnet, showing the direction and strength of the magnetic field.
8	Geographical Pole	Either of the two points on Earth where the axis of rotation meets the surface.
9	Induced	When something is caused or produced as a result of being near something else.
10	Magnet	A material that produces a magnetic field, causing other magnetic materials to be attracted or repelled.
11	Magnetic	Relating to magnetism and magnetic fields.
12	Magnetic Field	The area around a magnet that is affected by the non-contact magnetic force.
13	Permanent	Lasting forever or indefinitely.
14	Repel	A pushing force causing objects to move away from each other.
15	Solenoid	A coil of wire with a current flowing through it.
16	Steel	An alloy made up of iron and other substances.
17	Temporary	Lasting for a limited period of time, not permanent.

## 18 Magnetic Force

- The magnetic force is a non-contact force.
- Only some metals are magnetic: iron, cobalt, nickel and their alloys (such as steel).

## 19 Magnets

- Magnets have a north and a south pole.
- The poles of a magnet are where the magnetic force is the strongest.
- Opposite poles attract and like poles repel (remember, opposites attract!)



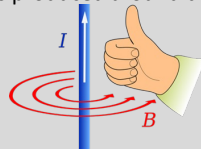
- Permanent magnets are magnetic all the time. Bar magnets are permanent magnets.
- Magnetic materials, including the Earth, create magnetic fields.

## 20 Magnetic Fields

- Magnetic field lines are used to describe the strength and direction of the magnetic field.
- The direction of the magnetic field at any point is given by the direction of the force that would act on another north pole placed at that point
- The arrows on the magnetic field lines always point from the North pole to the South pole.
- Magnetic field lines never cross or touch.
- Field lines flow from the North pole to the South pole.
- Closer field lines demonstrate that the magnetic force is stronger.

## 21 Induced Magnetism

- Induced magnets are materials that become magnetic when placed in a magnetic field and when removed, lose their magnetism.
- When a current flows through a conducting wire a magnetic field is produced around the wire.

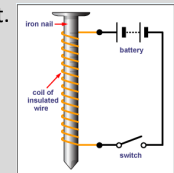


## 21 Induced Magnetism

- The strength of the magnetic field depends on the current through the wire and the distance from the wire.
- When a wire is wrapped around into a coil shape, we call it a solenoid.
- Shaping a wire to form a solenoid increases the strength of the magnetic field created by a current through the wire. The magnetic field inside a solenoid is strong.
- The magnetic field around a solenoid has the same pattern as the magnetic field around a permanent bar magnet.

## 22 Electromagnets

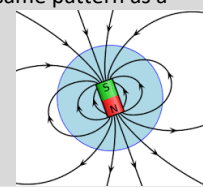
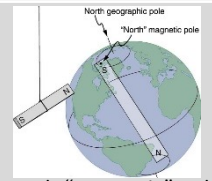
- An electromagnet is a solenoid with an iron core. We can make an electromagnet by wrapping a wire around an iron nail and turning on the current.



- The strength of the magnetic field around a solenoid is increased by adding more turns in the coil, adding a magnetic material as a core or increasing current.

## 23 Earth's Magnetic Field

- The Earth has a magnetic field.
- A compass will point to Earth's North "magnetic" pole which is different to Earth's geographic North pole which is also different to the true North pole of the Earth's magnetic field.
- The Earth behaves like it has a giant bar magnet inside it, because of currents of molten iron and nickel in its core.
- Molten means melted.
- The Earth's magnetic field has the same pattern as a permanent bar magnet.



# Year 8 Science Spring Term Knowledge Organiser Life Diversity

Key Vocabulary:		9. Variation	11. Natural Selection	
1	<p><b>Abiotic</b></p> <p>Something that is not to do with a living thing. <i>Light, temperature and water availability are all <b>abiotic</b> factors.</i></p>	<p>Variation is the different characteristics between individual organisms. There is variation between populations of different species. There is also variation within a species. Examples of variation within humans include hair colour, eye colour, height, weight, skin colour, nose shape and finger length. Variation can be caused by inherited (genetic) factors, environmental factors or a combination of the two. Characteristics can be physical, behavioural, and physiological. Characteristics are inherited from parents through reproduction. Inherited variation is caused by the fusing of gametes in sexual reproduction and by random mutations in DNA. The DNA inherited that causes a characteristic is called the genotype. The phenotype is the physical characteristic resulting from the genotype. DNA that is passed to offspring can be randomly mutated and result in new phenotypes that were not present in previous generations.</p> 	<p>Within a community, organisms compete for biotic and abiotic factors to survive and reproduce. Adaptations are characteristics that allow an organism to survive and reproduce in its habitat. Adaptations can be physical structures, behavioural or functional. Natural selection is when variation in the population makes some organisms better suited to live and reproduce in a particular environment.</p>	
2	<p><b>Adaptation</b></p> <p><b>A characteristic that allows an organism to survive and reproduce in its habitat.</b> <i>Some prey animals camouflage to their surroundings, which is an <b>adaptation</b>.</i></p>		12. <b>Evolution.</b>	<p>Evolution is a change in the inherited characteristics of a population over time, caused by natural selection. Evolution can cause the formation of a new species. If two populations cannot interbreed to form fertile offspring, then they are different species. The Theory of Evolution by Natural Selection states that all life has evolved from simple organisms more than three billion years ago.</p>
3	<p><b>Biotic</b></p> <p><b>Something to do with a living thing.</b> <i>Food availability, disease and predators are all <b>biotic</b> factors.</i></p>		13. <b>Extinction and Human Impact</b>	<p>Extinction is when there are no living individuals of a species left in the wild and in captivity. Extinction can be caused by changes to habitats, new predators or competitors, or new diseases. Extremophiles are organisms that live in extreme conditions of temperature, pH, salt or pressure. This is an extreme example of how environmental pressures result in species specifically suited to thriving in that environment.</p>
4	<p><b>DNA</b></p> <p>The molecule that contains all the genetic information (code) for each organism. <i>We inherit half our <b>DNA</b> from each parent.</i></p>		10. <b>Artificial Selection</b>	<p>An ecosystem is made up of populations of different species interacting with each other and the abiotic environment. Each species competes with other species for natural resources. A variety of species helps to maintain the cycling of nutrients and population control. The more species and the more variation in the ecosystem, the more resilient it can be to environmental disturbance.</p>
5	<p><b>Evolution</b></p> <p><b>The change in inherited characteristics of a population over time caused by natural selection.</b> <i>Charles Darwin proposed the theory of <b>Evolution</b>.</i></p>			
6	<p><b>Extinction</b></p> <p><b>When there are no living individuals of a species left in the wild and/or in captivity.</b> <i>Global warming is putting many different species at risk of <b>extinction</b>.</i></p>			
7	<p><b>Extremophile</b></p> <p><b>Organisms that live in extreme conditions of temperature, pH, salt or pressure.</b> <i>Some <b>extremophile</b> fish are able to live under great pressure deep in the sea.</i></p>			
8	<p><b>Genotype</b></p> <p><b>The DNA inherited that causes a characteristic.</b> <i>The girl's <b>genotype</b> is having DNA that codes for brown hair.</i></p>			

# Year 8 Science Spring Term Knowledge Organiser – Earth

## Key Vocabulary

1	Magma	Molten rock underground
2	Lava	Molten rock above ground
3	Intrusive	Rocks that have cooled slowly and have large crystals
4	Extrusive	Rocks that have cooled quickly and have small crystals
5	Weathering	Breaks down rocks on the surface of the Earth; Biological, Chemical or Physical
6	Erosion	Movement of pieces of rock away from where they started
7	Sedimentation	Layers of sediment build in layers and the bottom layer becomes compressed
8	Cementation	Dissolved minerals fill any spaces and bind rock particles together
9	Precipitation	Where droplets in clouds are heavy, they fall back to earth as hail, rain, sleet or snow
10	Transpiration	Plants take water from the ground and move it to their leaves where it evaporates into the atmosphere

## Air Pollution

- 12 Burning fossil fuels produces atmospheric pollutants such as:
- Carbon dioxide (CO<sub>2</sub>) – leads to global warming
  - Carbon monoxide (CO) – odourless, poisonous gas
  - Sulfur dioxide (SO<sub>2</sub>) – leads to acid rain
  - Soot/ carbon particulates – global dimming

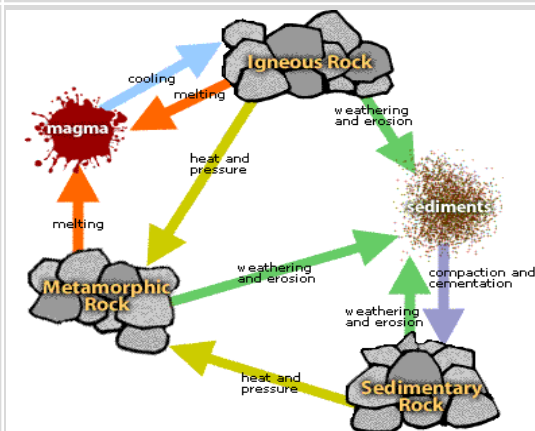
## 13 Igneous Rocks

- 14
- When molten rock cools it solidifies to form igneous rocks.
  - Igneous rocks formed from magma underground are intrusive rocks.
  - Intrusive rocks cool slowly and have large crystals. . **E.g., granite.**
  - Igneous rocks formed from lava above ground are extrusive rocks.
  - Extrusive rocks cool quickly and have small crystals. **E.g., obsidian.**

## 15 Sedimentary Rocks

- 16
1. Rocks can be weathered, eroded, and the pieces transported away.
  2. The pieces of rock could be deposited in a lake or sea, eventually forming new **sedimentary** rock.
  3. Sedimentation, compression, and cementation form sedimentary rocks. **E.g., chalk or sandstone.** The formation of rocks is related to each other in the rock cycle

## 17 The Rock Cycle



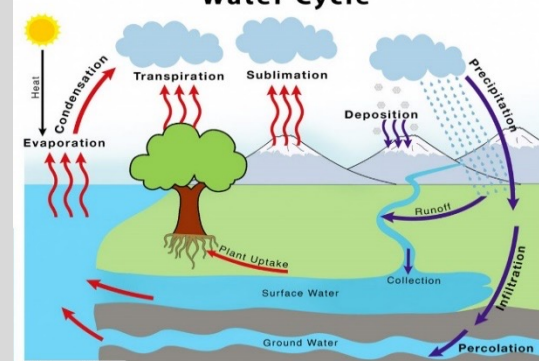
## 18 Metamorphic Rock

- 19
1. **Sedimentary** rocks can change into **metamorphic** rocks due to heat and pressure from the movements of the Earth.
  2. If rocks are pushed deep underground they experience tremendous heat and pressure
  3. Heat and pressure change the structure of igneous and sedimentary rocks to form metamorphic rocks (**E.g. marble formed from chalk**)

## 20 Water Cycle

- 21 Water constantly evaporates from land surface, rivers and the sea
- 22 Animals and plants produce water through **respiration, excretion** water in urine, faeces, and sweat and through **decay**.
- 22 As water vapour rises it condenses into droplets. Clouds are formed from **condensed** water droplets.
- 23 When droplets in clouds are heavy, they fall back to earth as **precipitation**. Precipitation is hail, rain, sleet, and snow.
- 24 Water that falls over the sea goes back into the sea. Water that falls over land goes into rivers or groundwater and makes its way back to the sea. This cycle is called the water cycle

## 25 Water Cycle



## Year 8 Art and Design Spring Term Knowledge Organiser

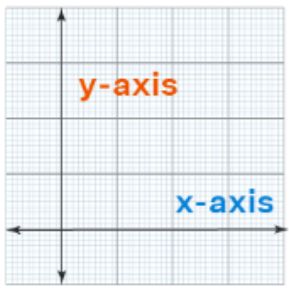
### Key Vocabulary:

<b>1</b>	<b>The Formal Elements of Art</b>	The formal elements of art are used to make a piece of artwork. The art elements are line, tone, texture, shape, pattern and colour. They are often used together, and how they are organised in a piece of art determines what the finished piece will look like.
<b>2</b>	<b>line</b>	A line is a mark or link between two points.
<b>3</b>	<b>mark</b>	Mark making describes the different lines, dots, marks, patterns and textures to produce a work of art. Artists use gesture to express their feeling and emotions in response to something seen or something felt .
<b>4</b>	<b>tone</b>	Tone refers to the light and dark values of an object when drawing. There are three different types of tone: shadows, mid tones and high lights. <b>Value</b> in art is essentially how light or dark something is on a scale and refers to tone.
<b>5</b>	<b>texture</b>	The texture stimulates two different senses: sight and touch.
<b>6</b>	<b>shape</b>	Shape is a flat, enclosed area such as a square or triangle.
<b>7</b>	<b>form</b>	A form can refer to a three-dimensional composition or object.

<b>8</b>	<b>scale</b>	The scale of something is its size. To scale something is to enlarge it. To scale down is to do a smaller version.
<b>9</b>	<b>balance</b>	If a picture or piece of artwork has balance then each part of it works well together in a whole piece.
<b>10</b>	<b>space</b>	A space is the gap between objects.
<b>11</b>	<b>tint</b>	Tint is when a colour becomes lighter by adding white.
<b>12</b>	<b>harmonious colours</b>	Colour harmony is achieved using colours that relate to one another in some way.
<b>13</b>	<b>mixed media</b>	Mixed media refers to a visual art form that combines a variety of media in a single artwork.
<b>14</b>	<b>The Golden Ratio</b>	The Golden Ratio is a mathematical ratio. It is commonly found in nature, and when used in a design, it adopts an organic and natural-looking composition. This is aesthetically pleasing to the eye.
<b>15</b>	<b>composition</b>	The arrangement of elements in a piece of art.

# Year 8 Computing Spring Term Knowledge Organiser: Block Based Coding in Scratch

## Key Vocabulary:

1	<b>Program</b>	A program is a set of instructions that tell a computer what to do.
3	<b>Sequence</b>	The order of the instructions in the code
4	<b>Iteration</b>	Repeat
5	<b>Selection</b>	A decision in the code.
6	<b>Conditional Statement (IF)</b>	A point where a decision is made by the user.
7	<b>Variable</b>	A piece of memory that stores a value that can be changed
8	<b>X and Y coordinates</b>	<p>This will help you remember... X is like a cross and Y in the sky!!</p> <p>To write co-ordinates X, Y – X always comes first, like in the alphabet XYZ</p>
		
9	<b>Input</b>	Any method of getting data into the computer
10	<b>Output</b>	Any method of getting data out of the computer
11	<b>Decomposition</b>	Break into smaller chunks
12	<b>Abstraction</b>	Remove unneeded parts of the code
13	<b>Program execution</b>	To run the code
14	<b>Syntax error</b>	A mistake in the spelling or punctuation
15	<b>Algorithm</b>	Sequence of instructions

## CODE BLOCK IN SCRATCH

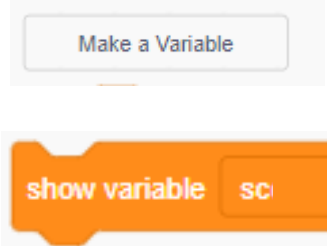
### ITERATION



### SELECTION




### VARIABLE





# Year 8 Drama Spring Term Knowledge Organiser

Key Vocabulary:		
1	Stage Levels	To show power, status or just different locations for the scenes.
2	Staging	Where actors and set are in the space.
3	Genre	How the performance makes you feel: Comedy? Thriller? Science Fiction?
4	Monologue	A character speaks directly to the audience about their feelings
5	Theme	The topic of the performance e.g. Supernatural.
6	Stylised	How performance is presented non naturalistically.
7	Analysing	Realising how a performance is made up of theatrical skills.

Johnny and the Dead Rehearsals	
8	<p><b>Key skills</b></p> <p>Communication – with each other during rehearsals Freeze Frames – to exaggerate a point in the play Teamwork – everyone has a say in what they do and who they are Characterisation – all must be in the shoes of someone else Script writing – planning what the characters say Reading – making sure you are able to access your script Vocal and physical – developing the character using voice and movement</p>
9	<p><b>Key knowledge</b></p> <p>Dramatic tension is how you keep an audience hooked to the story of your play. It is about creating and maintaining an audience's involvement in the “journey” of your play. One of the main ways of creating tension is by planting questions in the “mind” of the audience.</p>
10	<p><b>What we do</b></p> <ul style="list-style-type: none"> <li>• Explore vocal acting skills</li> <li>• Experiment with strategies for use of stage voice to show meaning.</li> <li>• Read and interpret characters in scripts.</li> <li>• Learn to look for the given circumstances.</li> <li>• Explore character motivation and develop vocal performance from this.</li> <li>• Prepare for and perform scenes from the play</li> </ul>
11	<p><b>Facial expression and emotions</b></p> <p>What are the emotions?</p> 

Johnny and the Dead Performance	
12	<p><b>Line Learning</b></p> <p>When learning a script, it is important for a performer to also learn their cues . For example, a character's first line may follow a lighting change at the start of the play and even if they are on stage prior to the lighting change they must not speak until they have seen or heard their cue</p>
13	<p><b>Plot Summary</b></p> <p>One day, while taking a shortcut through an old cemetery, 12-year-old Johnny Maxwell discovers he can see the spirits of the dead, who are not happy about having their cemetery levelled to make space for an office building. As Johnny gets to know them, he finds out that there are several remarkable people spending their afterlife there and he decides that it is important to keep the cemetery intact for them. He becomes involved in trying to save it, taking on both the city council and the big corporation, which has bought the land. At the same time he tries to make the afterlife more pleasant for the spirits. His friends, of course, think he's crazy. Things become complicated when both the big corporation and the spirits take matters into their own hands</p>
14	<p><b>Conventions of a Play Text</b></p> <p>Character list – a list of names. Scene title – usually the setting, a theme or even just a number. Stage Directions – descriptions of action placed in brackets during dialogue or in italics elsewhere. Character Names – written in the left hand margin, often in capitals or before a colon Dialogue – speech between characters Scene – a moment of continuous action Act – a grouping of scenes within a play</p>

# Year 8 DT Knowledge Organiser Pewter Casting - Spring Term

## Key Vocabulary:

1	Natural	Existing in or derived from nature; not made or caused by humankind. For example, gold is naturally occurring but a gold bar or gold ring is man-made.
2	Environment	The natural environment or natural world encompasses all living and non-living things occurring naturally, meaning in this case not artificial. The term is most often applied to the Earth or some parts of Earth.
3	Sustainability	A societal goal with three dimensions: the environmental, economic and social dimension. Environmental sustainability occurs when natural resources are preserved.
4	Ferrous metals	are metals that contain iron (they rust and are magnetic).
5	Non-ferrous metals	are metals that do not contain iron (so they do not rust and are non-magnetic).
6	Specification	A list of requirements for a design and to help us to analyse and describe a product.
7	Illustrator	Somebody that turns words into pictures, but in this brief, Adobe Illustrator is a piece of design software.
8	Prototype	An early sample, model, or release of a product built to test a concept or process.

## Key Concepts

### 9. CAD/CAM

**CAD (Computer Aided Design)** is the use of a computer to help you visualise the product. CAD allows us to change the design quickly and allows the design to be shared easily via email etc. Multiple people can be working on the same design and at the same time making the process very efficient.

**CAM (Computer Aided Manufacturing)** It is important to remember that CAD can happen on its own because it's just a design, but for CAM to occur, CAD must be involved. CAM is when machines (such as the laser cutter) produce the work that you have created using CAD. The process is to send your CAD design to the CAM machine, and with a few simple instructions the CAM machine will make the product or part.

### 10. Finishing

The finish of a product is usually (but not always) the final part of your product. A finish is often based on the product's intended use, by this I mean considering what the product will be used for. For example: If you have made a child's toy, you may wish to paint the product a bright colour to stimulate the child to play with it. If you have made a garden bench, you may not require colour, but you do require a finish that is waterproof because it is going to live outside. Sanding is simply a method for rubbing abrasive particles against the surface of a workpiece to create a random, non-linear surface texture.

### 11. Evaluation

The evaluation of your product often is left to the end, but you should evaluate your product at every stage in order to make alterations and corrections as you go.

It is useful to use a structure when evaluating such as a SWOT analysis. Using a SWOT analysis tool allows you to check all the main aspects of your product have been considered. A good evaluation DOES NOT only focus on the good parts of your product, but makes honest judgements that allow you to make improvements next time, or as you go.

SWOT Evaluation Method



# Year 8 Geography Topic 3 Knowledge Organiser: Exploring Biomes

Vocab	Definition	2. Biome Characteristics			
Biome	A global area that has flora and fauna similarities.				
Ecosystem	A small scale community of interconnected plants and animals.	Tundra	Latitudes of 65 degrees north and south of the equator. E.g. Canada, Russia, Alaska/.	Rainfall: Low, below 500mm annually. Temperature: Cold winters and cool summers (below 10°C)	Small plants grow close to the ground and only in summer. Low number of animal species, most found along the coastline.
Flora	The different types of plants in an area.				
Fauna	The different types of animals in an area.				
Adaptation	The way organisms change to better suits its environment.	Polar	The points furthest north and south on the planet. Antarctica and the Arctic circle.	Rainfall: Very low less than 250mm per year. Temperature: Very low all year round, can be as low as -30°C.	Low biodiversity for flora and fauna. Extreme adaptations are needed to survive the harsh conditions.
Deforestation	Clearing a large area of trees.				
Biodiversity	The variety of plant and animal life in a particular habitat.	Tropical	Along the equator.	Rainfall: Very High over 200mm per year. Temperature: Hot all year round.	Highest biodiversity on the planet. Tall trees forming a canopy. Most animals living in the canopy layer.
Deciduous	A tree or forest that sheds its leaves seasonally.				
Tundra	The biome just below the polar biome, it is cold and has limited biodiversity.				
Permafrost	A layer of ground in the Tundra biome that is permanently frozen throughout the year.	Temperate	Between latitudes 40 degrees and 60 degrees north of the equator.	Rainfall: Variable rainfall 500-1500mm annually. Temperature: Warm summers and mild winters, no temperature extremes.	Mainly deciduous trees; a variety of species. Animals adapted to the warmer summer and cooler winter. Some species migrate.
Agriculture	The practise of farming.				
Mineral Extraction	Means the removal of minerals, including, sand, gravel, shale, rock, coal, soil for profit.				
Temperate	An area that has no extreme weather and climate.				
Afforestation	The process of planting trees after deforestation.				

3. Threats facing Tropical Rainforests.	
<b>Logging</b> <ul style="list-style-type: none"> <li>Most widely reported cause of destructions to biodiversity.</li> <li>Timber is harvested to create commercial items such as furniture and paper.</li> <li>Has lead to violent confrontation between indigenous tribes and logging companies.</li> </ul>	<b>Agriculture</b> <ul style="list-style-type: none"> <li>Large scale 'slash and burn' of land for ranches and palm oil.</li> <li>Increases carbon emission.</li> <li>River saltation and soil erosion increasing due to the large areas of exposed land</li> <li>Increase in palm oil is making the soil infertile.</li> </ul>
<b>Mineral Extraction</b> <ul style="list-style-type: none"> <li>Precious metals are found in the rainforest.</li> <li>Areas mined can experience soil and water contamination.</li> <li>Indigenous people are becoming displaced from their land due to roads being built to transport products.</li> </ul>	<b>Tourism</b> <ul style="list-style-type: none"> <li>Mass tourism is resulting in the building of hotels in extremely vulnerable areas.</li> <li>Has caused negative relationships between the government and tribes</li> <li>Tourism has affected wildlife (apes) by exposing them to human diseases.</li> </ul>

## 4. Threats facing Tundra/Polar Biomes

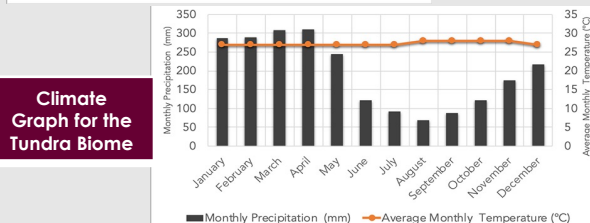
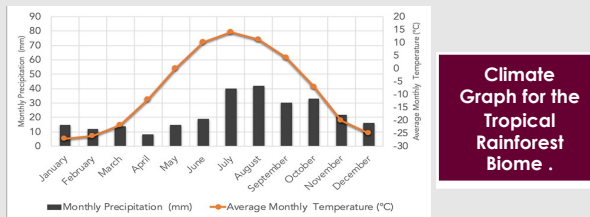
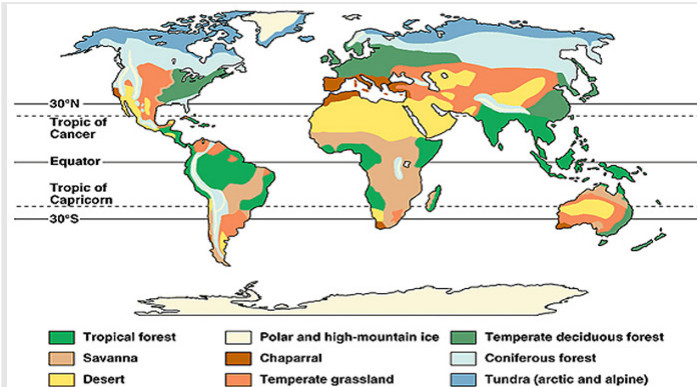
<b>Oil and Gas Exploration.</b> <ul style="list-style-type: none"> <li>Arctic holds a large amount of untapped oil and gas.</li> <li>Oil spills would threaten ecosystems as clean up operations would be slow.</li> </ul>	<b>Whaling</b> <ul style="list-style-type: none"> <li>Hunting of whales is a major industry – this led to a rapid decline in whale populations.</li> <li>Many countries have banned whaling, but some still continue</li> </ul>
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<b>Fishing</b> <ul style="list-style-type: none"> <li>Has made area possible to fish large untapped stocks.</li> <li>The polar areas are difficult to police due to harsh conditions.</li> <li>Collapse of the fish stocks might damage ecosystems.</li> </ul>	<b>Tourism</b> <ul style="list-style-type: none"> <li>The tourism industry is steadily growing within polar regions.</li> <li>Travel by tourists have increase emissions further.</li> <li>Wildlife may become disturbed by tourists getting up close.</li> </ul>
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## 5. Different types of management

**International agreements and debt for nature swaps, selective logging, afforestation.**

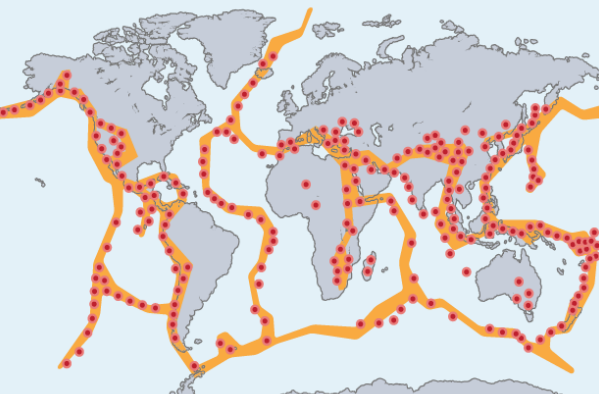
## 1. Global Distribution of biomes



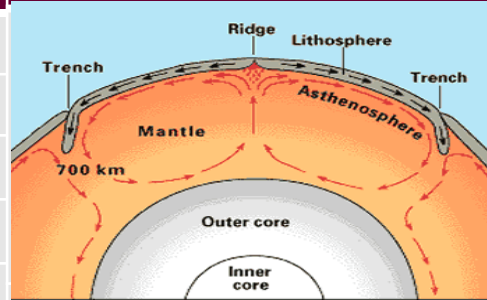
# Year 8 Geography Topic 4 Knowledge Organiser: Exploring Hazards

Vocab	Definition
Crust	The layer of the earth that we live on.
Mantle	The largest layer and made of molten rock.
Inner Core	The centre most point and the hottest layer in the earth.
Outer Core	The liquid layer that surrounds the solid inner core.
Mitigation	Reducing the severity of a disaster and trying to save lives and minimise costs.
Tsunami	A large wave caused by the movement of tectonic plates underwater.
Hurricane	An extreme low pressure weather system where winds faster than 74mph.
Tuned Mass Damper	A method of protecting sky scrapers by using a large metal ball.
Flooding	Land that is usually dry covered in water.
Richter Scale	The measure of the magnitude of an earthquake on a scale of 1 to 10.
Saffir-Simpson Scale	The measure of the strength of a hurricane from category 1 to 5.
Permeable	Water is able to pass through it for example soil.
Impermeable	Water is unable to pass through it, for example man-made surfaces such as

## 1. Global distribution of tectonic hazards



## 2. The movement of tectonic plates



- The Earth's crust is broken up into pieces called plates.
- The convection currents move the plates.
- Where convection currents diverge near the Earth's crust, plates move apart.
- Where convection currents converge, plates move towards each other.

## 4. Hurricane Katrina 2004

Katrina was a category 4 storm. Storm surges reached over 6 metres in height. New Orleans was one of the worst affected areas because it lies below sea level and is protected by levees. These protect it from the Mississippi River and Lake Ponchartrain. The levee defences were unable to cope with the strength of Katrina, and water flooded into the city. Despite an evacuation order, many of the poorest people remained in the city. People sought refuge in the Superdome stadium.

### Responses:

- Many people were evacuated, it was a slow process and the poorest and most vulnerable were left behind.
- \$50 billion in aid was given by the government.
- The National Guard was mobilised to restore and maintain law and order in what became a hostile and unsafe living environment.

## 3. Japan earthquake and tsunami 2011

On Friday 11 March 2011 at 14:46:24, an earthquake of magnitude 9.0 on the Richter scale occurred. High, powerful waves were generated and travelled across the Pacific Ocean. The area worst affected by the tsunami was the east coast of Honshu in Japan.

### Infrastructure

The waves travelled as far as 10 km inland in Sendai. The tsunami flooded an area of approximately 561 square km. Ports and airports in Sendai were damaged and closed. The massive surge destroyed three-storey buildings where people had gathered for safety.

### Social and economic

The total damages from the earthquake and tsunami are estimated at \$300 billion dollars (about 25 trillion yen). The number of confirmed deaths as of 10 April 2015 is 15,891. More than 2,500 people are still reported missing.

### Responses to the disaster

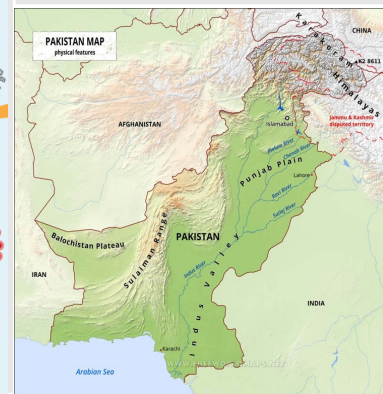
The country recently unveiled a newly-installed, upgraded tsunami warning system. Earthquake engineers examined the damage, looking for ways to construct buildings that are more resistant to quakes and tsunamis. Studies are ongoing.



## 5. Pakistan Floods 2022

In August and September 2022, Pakistan was hit by major floods causing thousands of deaths, injury, disease and homelessness.

- 1,700 people died, including 600 children
- 33 million people were affected, 15 million of these in Sindh Province
- 1,000 health facilities damaged in Sindh
- 1.8 million homes across Pakistan were damaged and many were destroyed. Mud brick homes were particularly vulnerable
- Infrastructure damaged, including 150 bridges and 3,500 roads, and no electricity for more than 10 days
- 700,000 livestock killed
- 3.6 million acres of crops destroyed, particularly rice and sugar cane in Sindh
- Food insecurity





# Year 8 History Spring Term Knowledge Organiser: Industrial Revolution

## Key Vocabulary:

1	Urban living	Living in cities/towns.
2	Industrial Revolution	A period of rapid change in the way people lived and worked.
3	Hygienic	Maintaining health and preventing disease, especially by being clean.
4	Privy	A toilet located in small shed outside a house or building.
5	Cottonopolis	The nickname of Manchester during the Industrial Revolution due to the number of textile factories.
6	Rural	The countryside
7	Urban	Towns and cities
8	Raw materials	The basic material from which a product is made e.g. coal, wood, sugar and cotton.
9	Agriculture	Farming of crops and animals.
10	Factory	A large building with machines used for mass production.
11	Migration	The movement of people e.g. from the countryside to towns
12	Urbanisation	When small towns grow rapidly into cities.
13	Public health	How public's general health is protected.
14	Entrepreneur	A businessman who takes risks/speculates to make more money.
15	Causation	Why events happen
16	Significance	Explaining why and to what extent something mattered
17	Narrative Account	Describing how a series of events were connected.

## Why did the Industrial Revolution happen in Britain?

18	Factors
	<p><b>Geographical factors</b>- Supplies of raw materials such as Iron ( for railways, machines), clay (for pottery), helped industrialisation. In addition Manchester was very well placed with rivers and a damp atmosphere which was useful in the production of cotton as it made the cotton easier to work with.</p> <p><b>Inventors and Entrepreneurs</b> - Talented individuals such as Richard Arkwright (spinning machine) and James Watt (Steam engine) helped improve the industry and mechanise jobs which had previously been done by hand.</p> <p><b>Overseas Trade</b> - British cotton cloth is sold abroad and Britain buys cotton from it's empire. Britain sells many of its products made in Manchester factories to India</p> <p><b>Population</b> - 1900 British population is 42 million. They buy goods and work in factories. People would be drawn to cities like Manchester due to the promise of jobs.</p> <p><b>Transport</b> - Canals, railways and better roads – makes everything cheaper to make and transport. Great links to important cities such as Liverpool to Manchester allow the exportation of goods. The first railway was opened between Manchester and Liverpool in 1830</p> <p><b>Slavery</b> - Cotton grown by slaves in South America made a large amount of profit. This was sold for use in Manchester's factories. Some factory owners also own plantations.</p>
19	Change in Britain
<b>1750</b>	Population of Britain is approx. 11 million, most important work was farming, work was powered by waterwheels, horses or humans. Most children did not go to school and only 2 universities in England. Only 5% of the population could vote and no women.
<b>1825</b>	Population of Britain is approx. 20 million, cotton industry more important, steam power was used to drive machines in factories. Most middle class and upper-class boys went to school and only 2 universities in England. Only 5% of the population could vote and no women.
<b>1900</b>	Population of Britain is approx. 42 million, most important industries were coal, iron, steel and cotton, steam power was used to drive machines in most industries and most farmers used machines. All children aged 5-12 went to school and 10 universities in England. Most men could vote (but no women).

## What was Cottonopolis like?

20	Factory System
	<p>Domestic System- people worked in their own homes in rural villages and they needed skills to complete their tasks of spinning and waving.</p> <p>Industry was powered by muscle, animal and water and goods were sold in local markets.</p> <p>Factory system- people worked in factories which were built near coal or water. Workers followed a set routine which was generally low skilled. The factories were powered by steam engines and huge amounts of goods were produced which could be sold in big cities or exported.</p>
21	Living Standards
	For the first time in history more people lived in urban rather than rural areas. There was a big increase in house building. Much of the houses being built were of a poor standard and led to the development of slums in major urban areas such as Manchester. There was no running water, no rubbish collection, little outside space and no proper sewage. The air became very polluted with factories and the water in rivers and wells contained many bacteria and disease such as cholera and typhoid were widespread.
How much did Manchester support the slave trade?	
22	Slavery
	Manchester relied heavily on the import of raw materials picked by slaves in South America. Manchester earned up to £200,000 every year from the trade of cloth. The city was able to build grand buildings and invest in transportation links using its profits. Important Manchester mill owners such as the Gregs also owned slave plantations. There was a large amount of people who wanted to abolish the slave trade. In 1788 over 10,000 Manchester workers signed a petition to abolish slavery. This increased to 20,000 in 1792. During the American Civil War raw cotton could not be sent to Manchester. As a result the cotton many workers lost their jobs and factories were shut down. Despite this factory workers showed their support for the end of the slave trade, even receiving recognition from Abraham Lincoln.



# Year 8 History How did Britons fight for their rights? Spring Term Knowledge Organiser

Key Vocabulary:		What were people rights in 1800 and who tried to improve these rights?	What were people rights in 1800 and who tried to improve these rights?
1	Industrial Revolution	a period of rapid change in science and technology. Britain transformed from a rural to an urban society.	<p>9</p> <p><b>What were people's rights in 1800?</b></p> <p>a. No man under 21 can vote ... no women at all.                      b. Only men who own property worth 40 shillings a year could vote- 5% of population.                      c. Voting is not in secret ... you have to announce who you're voting for.                      d. Each man standing for elections is called a candidate. The candidate with the most votes becomes an MP. They are not paid!                      e. As an MP you will probably belong to one of the two main political parties.                      f. The political party which has the most MPs forms the government and its leader becomes Prime Minister. The government make the laws.                      g. Huge new towns like Manchester and Birmingham had no MPs.                      h. Workers cannot form unions or groups to support them in their efforts to get better pay and conditions.</p>
2	Reform	to change and make something better.	
3	Protest	a statement or action to express disapproval or objection to something.	
4	Revolution	to cause rapid and sudden change.	
5	Martyr	someone who has killed for their religious or other beliefs	
6	Democracy	a political system which is rule of the people.	<p>10</p> <p><b>What was the Peterloo Massacre?</b></p> <p><b>16 August 1819</b> – up to 60,000 people attended a speech by Henry Hunt they were angry about working conditions and that Manchester had no MP and only the rich could vote. Soldiers called in to stop the protest and 18 people died and 650 injured. Initially the impact was negative as Henry Hunt was arrested and radical newspapers were shut down and meetings of over 50 people were made illegal. However in the long run it inspired the 1832 Great Reform Act and led to the establishment of the Manchester Guardian.</p>
7	election	an organized choice by people for MPs to represent them in parliament.	<p>11</p> <p><b>What was the 1832 Great Reform Act?</b></p> <p>the Reform Act of 1832 increased the electorate from around 366,000 to 650,000, which was about 18 per cent of the total adult-male population in England and Wales. The vast majority of the working classes, as well as women, were still excluded from voting and the Act failed to introduce a secret ballot.</p>
8	Chartism	– a reform movement of 1837–48, who called for universal suffrage for men, equal electoral districts, voting by secret ballot, abolition of property qualifications for MPs, and annual general elections.	<p>12.</p> <p><b>Who were the Tolpuddle Martyrs?</b></p> <p>The Tolpuddle Martyrs were workers were agricultural workers who were convicted in 1834 of swearing an illegal oath and sentence to transportation to Australia. The public protested with the Copenhagen Field Demonstration where 35,000 to 100,000 people attended and then sent a petition to Parliament. This resulted in the government pardoning the Tolpuddle Martyrs and led to the establishment of trade unions</p>
			<p>13</p> <p><b>Who were the Chartists?</b></p> <p>The Chartists were a reform movement of 1837–48 who sent petitions to parliament with many signatures demanding six things.</p> <ol style="list-style-type: none"> <li>1. Vote for all men over 21.</li> <li>2. Secret ballot.</li> <li>3. No property qualification for MPs.</li> <li>4. Payment of MPs.</li> <li>5. Equal constituencies.</li> <li>6. Annual elections.</li> </ol> <p>While none of these changes happened when the Chartists were campaigning, eventually all but one of their aims were achieved.</p> <ul style="list-style-type: none"> <li>• <b>1858</b>- the property qualification was abolished.</li> <li>• The vote was extended to more men in <b>1867 &amp; 1884</b>.</li> <li>• In <b>1918</b> all men over 21 and many women over 30 could vote.</li> <li>• Secret ballot introduced in <b>1872</b>.</li> <li>• In <b>1885</b> electoral districts = equal.</li> <li>• <b>1911</b> MPs received a wage</li> </ul>
			<p>14</p> <p><b>What are people's rights in the 21<sup>st</sup> century?</b></p> <ol style="list-style-type: none"> <li>a. Men and women can vote - be 18 or over on the day of the election</li> <li>b. elections every 5 years and usually the first Thursday in May</li> <li>c. Voting is in secret ... you will cast your vote in private and then place in the box folded. You can also vote by post.</li> <li>d. Each person standing for elections is called a candidate. The candidate with the most votes becomes an MP. They are well paid.</li> <li>e. There are a variety of different parties to choose from and each has very different ideas – Conservatives, Labour, Lib Dems, Independent Parties.</li> <li>f. The political party which has the most MPs forms the government and its leader becomes Prime Minister. The government make the laws.</li> <li>g. The UK has 650 parliamentary constituencies each providing 1 MP. Every person in the country is represented by an MP</li> <li>h. People have the right to join a trade union and take part in variety of union activities such as striking on order to achieve better pay and conditions.</li> </ol>

# Year 8 Music Topic 3 Knowledge Organiser

## Key Vocabulary:

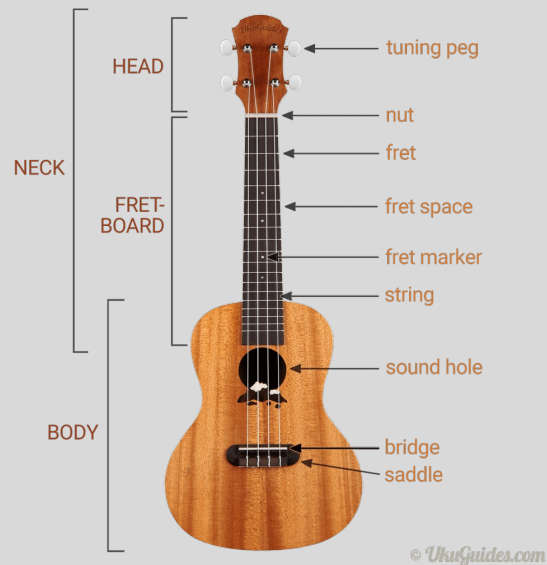
1	Ensemble	A group of people playing instruments – including voices
2	Chords	2 or more notes played together at the same time – or strummed
3	Ukulele	A member of the string family – played like a guitar with 4 strings
4	Tab	The music for guitar and ukulele instruments – using diagrams and the strings and frets used
5	Strumming	Playing chords across the four strings
6	Finger picking	Playing a melody or one note at a time using the fingers on the right hand
7	Plectrum	Small disc used to strum the strings rather than the thumb
8	Major and minor chord	Chords that sound “happy” or “sad” - I.e. CEG
9	Complex chords	Involving complex finger patterns and often using a different starting fret – not fret 1!

## Music Knowledge

### 10 The strings

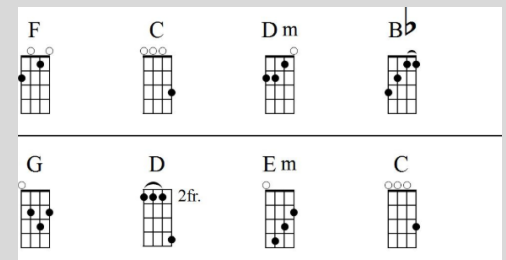
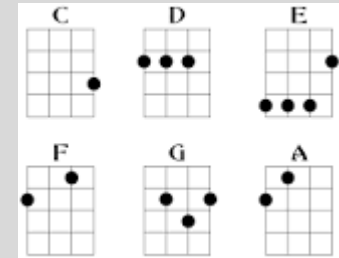


### 11 The ukulele



## Music Knowledge

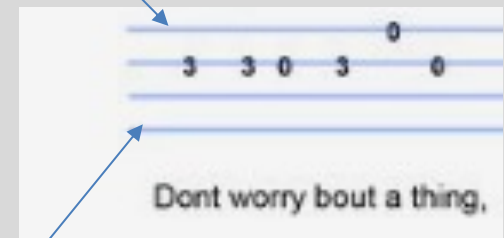
### 12 Simple and complex chords



### 13 Ukulele chords, tab and strings

The tab shows us what string and fret to play the notes

String nearest your leg



String nearest your face!

# Year 8 Music Topic 4 Knowledge Organiser

## Key Vocabulary:

1	Melody	The main tune or musical theme
2	Articulation	How the notes are played – smooth (legato) or short (staccato)
3	Genre	The style of the music: pop, rap etc.
4	Bass line	Normally one note from the chord played in a rhythm under the chord in a lower pitch
5	Chords	Chords are 2 or 3 notes played together at the same time.
6	Lyrics	The story or message of songs and music
7	Chords patterns	Groups of chords played one after the other as an accompaniment. Example – C = CEG and G = GBD
8	Major key	Major keys are happy sounding – for the chords we use C = CEG, F = FAC and G= GBD are all major chords
9	Minor key	Minor keys are more sullen (sad) in sound – for the chords we use Am – ACE is the minor chord

## Music Context

10 **4 Chords**

11 **The 4 chord trick**

Many songs are composed using the 4 chords – the way they all sound different is the lyrics and melody that is sung.

The speed and style also help to make each song different.  
 Rap – will use the chords as riffs  
 Ballad – as slow chords  
 Pop song – quick changes – every 2 beats perhaps

12 **The 4 chords**

In music the chords are written in Roman numerals like this I-V-vi-IV  
 To the player it looks like this = C – G – Am - F

This progression is called “the most popular progression” for a reason. It’s been used in just about every genre imaginable, from post-punk to country and western music.

13 **Strophic form**

Pop songs are structured by Strophic form – this is the blocks of music that make up the song

14 **The beginning**

Intro – normally an 8 bar pattern where the chords, drums and bass play without the singer – possibly a lead guitar melody

Verse – the story of the song – the facts – you did this, I did this etc

15 **The middle and the end**

Chorus – the feelings of the singer about the story

Outro – either a repeated chorus fading out or an instrumental ending to bring the song to a close

16 **Playing chords**

Chords don’t have to be just played in groups of 3 notes all together.

Adele often uses broken chords – the notes of the chord (CEG) played one after the other

17 **Other ways of playing chords**

Bass and chords – Bass note and other 2 notes together afterwards

# Year 8 Physical Education Spring Term Knowledge Organiser

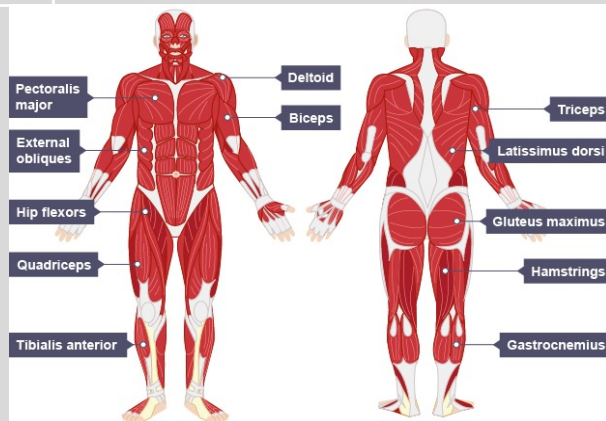
## Key Vocabulary:

1	Physical	Physical fitness refers to the ability of your body systems to work together efficiently to allow you to be healthy and perform activities of daily living..
2	Skill	The abilities that are necessary for successful sports performance.
3	Components of fitness	The PHYSICAL and SKILL parts that keep the body healthy
4	Muscle	a band or bundle of fibrous tissue in a human or animal body that has the ability to contract, producing movement in or maintaining the position of parts of the body:
5	Agonist Antagonist	Agonist works when the muscles relax and antagonist works when muscles contract. Agonists can be called as 'prime movers' as these very much responsible for producing specific movements.
6	Training	the regular use of exercises to promote bodily fitness and strength.
7	Ligaments Tendons	A tendon is a fibrous connective tissue which attaches muscle to bone. A ligament is a fibrous connective tissue which attaches bone to bone.

## Physiology - The human body

8

### Muscular system



	Function	Example in sport
Deltoid	Abduction of the shoulder (moving the arm outwards and away from the body)	Outward arm action in a jumping jack
Pectoralis major	Adduction of the shoulder (moving the arm towards the body); Shoulder horizontal flexion (moving the arms forwards in front of the body)	Upwards phase of a press up
Triceps	Extend the elbow (straightening the arm)	Shooting in netball
Biceps	Flex the elbow (bending the arm)	Drawing a bow in archery
External obliques	Trunk rotation (turning the body sideways)	Turning the body to breathe to the side when performing front crawl in swimming
Latissimus dorsi	Shoulder adduction (moving the arm towards the body); Shoulder horizontal extension	Butterfly stroke in swimming
Hip flexors	Hip flexion (moving knee up towards the chest)	Performing a rugby conversion kick
Gluteus maximus	Hip extension (moving the leg backwards)	Pulling back leg before kicking a ball
Quadriceps	Extend the knee (straightening the leg)	Kicking a ball
Hamstrings	Flex the knee (bending the leg)	Performing a hamstring curl on a weights machine
Gastrocnemius	Plantar flexion of the ankle (pointing the toes downwards)	Standing on tiptoe to mark a goal shoot in netball
Tibialis anterior	Dorsiflexion of the ankle (bringing the toes up towards the shin)	Foot making contact with a football

## Body components

9

### Components of fitness

Physical	Skill
Aerobic Endurance	Agility
Muscular Endurance	Balance
Flexibility	Coordination
Strength	Power
Speed	Reaction time
Body Composition	

### PHYSICAL RELATED

**Aerobic Endurance** - The ability of the cardiorespiratory system to supply oxygen and nutrients to the muscles to sustain low to medium intensity work to delay fatigue.

**Muscular Endurance** - The ability of the muscular system to continue to contract at a light to moderate intensity to allow repetitive movements throughout a long event or game

**Flexibility** - The range of motion possible at a joint to allow improvements in technique.

**Muscular Strength** - The maximum force that can be generated by a muscle or muscle group to improve forceful movements within an activity.

**Speed** - Distance divided by time to reduce time taken to move the body or a body part in an event or game.

**Body Composition** - The relative ratio of fat mass to fat-free mass in the body allowing variation in body composition dependent on the sport.

### SKILL RELATED

**Agility** - The ability to change direction quickly to allow performers to out-manoeuvre an opponent.

**Balance** - The ability to maintain centre of mass over a base of support, useful to maintain positions in performance sports (static) or when on the move in any other sporting situation (dynamic).

**Co-ordination** - The ability to move two or more body parts at the same time smoothly and efficiently, to allow effective application of technique.

**Power** - The product of speed and strength to allow for explosive movements in sport.

**Reaction Time** - The time taken between a stimulus and the start of a response, useful in fast-paced sports to make quick decisions about what to do.

# Spanish Year 8 Spring Knowledge Organiser-A comer

## Key Vocabulary / grammar

1		1. Key verbs			
Present		Past		Future	
<b>Como</b>	I eat	<b>Comí</b>	I ate	<b>Voy a comer</b>	I'm going to eat
<b>Bebo</b>	I drink	<b>Bebí</b>	I drank	<b>Voy a beber</b>	I'm going to drink
<b>Tomo</b>	I have	<b>Tomé</b>	I had	<b>Voy a tomar</b>	I'm going to have
<b>Desayuno</b>	For breakfast I have	<b>Desayuné</b>	For breakfast I had	<b>Voy a desayunar</b>	For breakfast I'm going to have
<b>Ceno</b>	For tea I have	<b>Cené</b>	For tea I had	<b>Voy a cenar</b>	For tea I'm going to have
<b>traigo</b>	I bring	<b>Trajé</b>	I brought	<b>Voy a traer</b>	I'm going to bring
<b>compro</b>	I buy	<b>compré</b>	I bought	<b>Voy a comprar</b>	I'm going to buy

## 6. Parallel Text:

1	Generalmente desayuno <b>cereales</b> o <b>tostadas</b>	Generally I eat <b>toast</b> or <b>cereal</b> for breakfast
2	y bebo <b>agua</b>	and I drink <b>water</b>
3	pero ayer tomé <b>huevos</b> .	but yesterday I had <b>eggs</b> .
4	¡Qué <b>delicioso!</b>	How <b>delicious!</b>
5	Siempre ceno <b>patatas</b> con <b>carne</b> y <b>verduras</b>	I always eat <b>potatoes</b> with <b>meat</b> and <b>veg</b> for tea
6	sin embargo acabo de ir a un <b>restaurante chino</b>	however I've just been to a <b>Chinese restaurant</b>
7	donde comí <b>fideos</b> con <b>pollo</b> .	where I ate <b>noodles</b> with <b>chicken</b> .
8	De postre tomé un <b>helado de chocolate</b>	For dessert, I had <b>chocolate ice cream</b>
9	porque siempre me ha gustado comer <b>helado</b> .	because I've always liked eating <b>ice cream</b> .
10	Además, bebí <b>zum de naranja</b> .	Moreover, I <b>drank orange juice</b> .
11	En el futuro voy a intentar	In the future I'm going to try
12	comer <b>más fruta y verduras</b>	To eat <b>more fruit and veg</b>

## Food and drink

2	<b>magdalenas</b> – cupcakes <b>pollo</b> – chicken <b>carne</b> – meat avocado <b>leche</b> – milk <b>té</b> – tea vegetables <b>galletas</b> – biscuits <b>plátanos</b> – bananas <b>queso</b> – cheese <b>limones</b> – lemons <b>jamón</b> – ham <b>chorizo</b> – spicy sausage carrots <b>agua</b> – water <b>bocadillo</b> – sandwich <b>el marisco</b> – seafood <b>arroz</b> – rice <b>patatas fritas</b> – chips/crisps <b>cola-caó</b> – chocolate milk <b>zum de naranja</b> – orange juice	<b>tostadas</b> – toast <b>pecado</b> – fish <b>un aguacate</b> – an <b>café</b> – coffee <b>verduras</b> – <b>pan</b> – bread <b>uvas</b> – grapes <b>lechuga</b> – lettuce <b>zanahorias</b> – <b>manzanas</b> – apples <b>huevos</b> – eggs <b>yogur</b> – yoghurt
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**La ensalada mixta** – mixed salad  
**Los huevos fritos** – fried eggs  
**Las gambas** – prawns  
**El pan** – bread  
**Las chuletas de cerdo** – pork chops  
**El filete** – steak  
**La tortilla española** – Spanish omelette  
**El helado de chocolate/vainilla/fresa** – chocolate/vanilla/strawberry ice cream  
**La tarta de queso** – cheesecake  
**Quesadillas** – toasted cheese tortillas  
**Un pimiento rojo/verde** – a red/green pepper

## In the restaurant

3	¿Qué va a tomar usted? – What are you going to have? (singular) ¿Qué van a tomar ustedes? – What are you lot going to have? (plural) ¿Y de segundo? – And for main course? ¿Para beber? – To drink? ¿Algo más? – Anything else? <b>Voy a tomar...</b> - I'll have <b>De primer plato</b> – as a starter <b>De segundo plato</b> – for main course <b>De postre</b> – for dessert <b>Tengo sed</b> – I'm thirsty <b>Tengo hambre</b> – I'm hungry <b>Nada más</b> – nothing else <b>La cuenta, por favor</b> – the bill, please
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## Let's show off

4 **Lo que más me gusta es...** - the thing I like the most is...  
**Lo que menos me gusta es...** - the thing I like the least is...  
**Siempre me ha gustado comer/beber** – I've always liked eating/drinking...  
**Acabo de ir a un restaurante chino/indio/italiano...** - I have just been to a Chinese/Indian/Italian restaurant.

## Restaurant dialogue

5 **Camarero:** "Hola. ¿Qué va a tomar usted?"  
**Cliente:** "De primer plato quiero ensalada mixta."  
**Camarero:** "¿Y de segundo?"  
**Cliente:** "De segundo plato voy a tomar pollo con pimientos y arroz. De postre quiero helado de vainilla."  
**Camarero:** "¿Para beber?"  
**Cliente:** "Quiero agua."  
**Camarero:** "Muy bien. ¿Algo más?"  
**Cliente:** "Nada más, gracias."