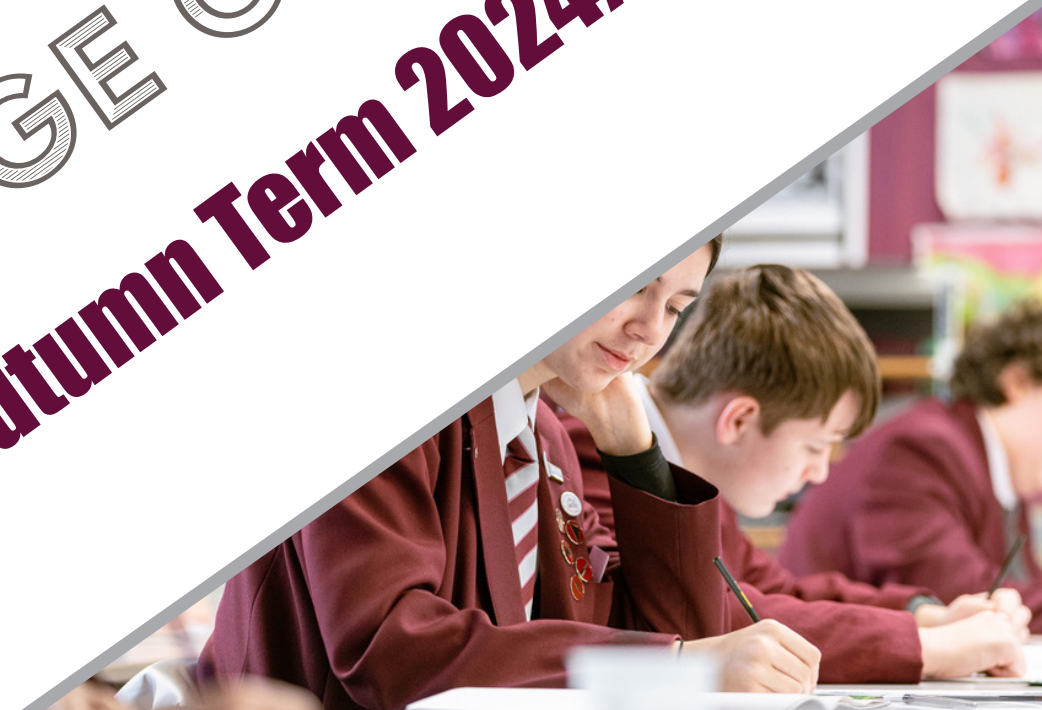
Rayner Stephens
HIGH SCHOOL

YEAR 8

KNOWLEDGE ORGANISERS

Autumn Term 2024/25



Year 8 The Gothic Autumn Term Knowledge Organiser

Key Vocabulary and techniques:

1	Genre	A style or category of literature.
2	Conventions	conventions are the defining characteristics, or must-haves, of a given genre
3	Semantic field	A group of word that have a similar theme or meaning.
4	Suspense	Anxiety or state of uncertainty about an outcome of a story.
5	Unreliable narrator	A narrator who is not reliable or credible.
6	Foreboding	A feeling something bad will happen.
7	Foreshadowing	be a warning or indication of (a future event).
8	Motif	A reoccurring symbol throughout a piece of literature.
9	Pathetic fallacy	Where the weather is used to create a mood and tone.
10	Ambiguous/ Ambiguity	open to more than one interpretation; not having one obvious meaning
11	Discourse Markers	is a word or phrase whose function is to organize discourse (communication) into segments.
12	Symbolism	An object, character or setting used to represent something else.

Week 1: **13. History, origins and conventions**

Gothic literature is a genre of writing that includes dark, supernatural elements, both in terms of events and the setting. It utilises literary techniques, such as setting, characters, and themes, to create an atmosphere of fear and foreboding. The gothic genre is fuelled by a fascination with dear and supernatural events.
The first work to ever outright call itself "Gothic" was "The Castle of Otranto" by Horace Walpole written in 1794. The gothic influences can be found in many stories both past and present, including A Christmas Carol, which we study at KS4.

Gothic Conventions: Dark and abandoned settings, mystery and fear, emotional distress, intense emotions, supernatural elements, atmosphere and fear.

Week 2: **The Tell-Tale Heart**

14. **The Tell-Tale Heart**

An unnamed narrator opens the story by addressing the reader and claiming that he is nervous but not mad. He says that he is going to tell a story in which he will defend his sanity yet confess to having killed an old man. His motivation was neither passion nor desire for money, but rather a fear of the man's evil eye. Again, he insists that he is not crazy because his cool and measured actions, though criminal, are not those of a madman. Every night, he went to the old man's apartment and secretly observed the man sleeping. In the morning, he would behave as if everything were normal. After a week of this activity, the narrator decides, somewhat randomly, that the time is right actually to kill the old man.

Week 2 and 3: 15. **Sentence Types**

Multi-clause sentences	Sentences which contain one main clause and at least one subordinate clause
Exclamatory sentences	conveys a strong emotion and ends with an exclamation mark.
Declarative sentences	Sentences which declare something as a fact or an argument.
Interrogative sentences	Sentences which are questions.
Imperative sentences	Sentences that suggest a command

Week 4: 16. **The Raven**

The unnamed narrator is alone in his house on a cold December evening, trying to read. As he is about to fall asleep, he hears a quiet knock at his door, but decides to ignore it. He says that he has been reading in the hopes of relieving his sorrow over Lenore, his beloved, who has passed away. Though he tries to convince himself that nothing is there, his curiosity and fear overwhelm him. He eventually opens his door, speaking "Lenore?" into the darkness. When he hears tapping at his window, he opens that, too, and a Raven flies inside his room.

Week 4 and 5: 17. **Comparison Skills**

Comparison Connectives:

However	In contrast	Whereas
Alternatively	Similarly	Equally

Rules of comparison:

- **Write in a balanced way about both texts.**
- **Use your comparison connectives between your points on both texts.**
- **Support your comparison points with evidence from the texts.**
- **Example structure: *'Both texts…. In text one the reader learns …….. [comparison connective] In text two the reader learns … '***

Week 5 and 6: 18. **Writing Skills**

Follow Freytag Pyramid but matching the gothic genre with a singular narrative voice:

Year 8 Animal Farm Knowledge Organiser

Key Vocabulary:

1	**Allegory**	A story, poem, or picture that can be interpreted to reveal a hidden meaning, typically a moral or political one.
2	**Symbolism**	The use of symbols to represent ideas or qualities.
3	**Tyrannical / Tyrant**	A person who has a lot of power but uses it in a very unfair and intimidating way.
4	**Superior**	Someone who is better or higher in status and power over everyone else.
5	**Inferior**	Someone who is lower in status and power than everyone else.
6	**Revolution**	The usually violent attempt by many people to end the rule of one government and start a new one/a sudden or extreme change.
7	**Manipulation**	When someone tries to control or influence others in a sneaky or dishonest way to get what they want.
8	**Exploitation**	The action or fact of treating someone unfairly in order to benefit from their work.
9	**Oppression**	Prolonged cruel or unjust treatment or exercise of authority.

10 Themes: Power and leadership

The themes of power and leadership are explored throughout the novel and is highlighted by the characters' relationships on the farm.

Mr Jones uses his power over the animals. It is suggested that Mr Jones uses physical violence to maintain control of the animals.

Many of the characters in the novel are eventually corrupted by the power they have as they manipulate their position of leadership to exploit other animals. The pigs take charge and begin to control the other animals. Napoleon uses Squealer and the dogs to stop the animals' questions about the windmill.

11 Plot Summary:

The novel depicts a traditional farm — Manor Farm — which is owned by a drunk, Mr. Jones.

After the humans go to bed, the animals get together in the barn and have a meeting, where Old Major, a boar, tells them he had a dream of the animals' rebellion against man. They wish for equality and self-determination. The animals are soon given a chance to rebel when Jones is away drinking, and the farmworkers forget to feed them.

At first, life on the farm is better than it was under Jones. The farm's name is changed to Animal Farm, and the Seven Commandments are established. The animals work more efficiently, and they reap all the rewards of their labour.

Everyone has their role on the farm, and the pigs, who are the most intelligent animals, act as the brains of the operation. However, as time goes on, things begin to change, and the pigs start taking more for themselves, pushing the other animals to work harder.

At the same time, they reap the benefits, begin acting like humans, and form business relationships with the neighbouring farmers. By the end of the story, the animals of the farm are unable to tell the difference between the humans and the pigs.

12 Analytical verbs

Verbs which help you to explain your critical thinking in more detail. They're used in essays to explain your interpretations of characters and themes.

...suggests...
...implies...
...highlights...
...shows...
...displays...
...demonstrates...
...portrays...
...indicates...

13 Modal verbs

Modal verbs express the possibility and ability of actions. They can also be used in analytical writing to show that evidence can have multiple interpretations.

can / can not / may / must / would / should / could / might / will / will not

*This **may** suggest...*
*This **could** show...*
*This **might** indicate...*

Characters and who/what they symbolize:

14 Old Major

An aged prize Middle White boar provides the inspiration that fuels the rebellion. He is an allegorical combination of Karl Marx, one of the creators of communism, and Vladimir Lenin, the communist leader of the Russian Revolution.

15 Vladimir Lenin

Leader of the Bolshevik party who wanted to make life better for workers and poor people. They led the Russian Revolution to remove the Tsar and created the Soviet Union. Lenin wanted to share resources and have equal rights.

16 Mr. Jones

A heavy drinker who is the original owner of Manor Farm, a farm in disrepair with farmhands who often act idle on the job. He is an allegory of Russian Tsar Nicholas II.

17 Tsar Nicholas II

The last emperor of Russia. People were deeply unhappy because they were poor and hungry whilst he lived in luxury with his rich family. He was killed during the Russian Revolution.

18 Napoleon

An allegory of Joseph Stalin, Napoleon is the ruthless leader of Animal Farm. He takes on the persona of the humans and in particular Mr. Jones by exploiting the animals for his own selfish gain.

19 Joseph Stalin

A cruel dictator who ruled the Soviet Union after Lenin died. Stalin made a lot of changes to his country, trying to make it stronger and more modern, but he also made some very harsh and cruel decisions. Many people suffered and died.

20 Snowball

Napoleon's rival and original head of the farm after Jones's overthrow. Snowball had lots of great ideas to improve the farm but would constantly have disagreements with Napoleon. His life parallels that of Leon Trotsky.

21 Leon Trotsky

Trotsky played a big part in the Russian Revolution by helping the Bolsheviks to overthrow the old government and create a new one. He was known for being a great speaker and an excellent organizer. He became rivals with Joseph Stalin and was forced to leave the country to spend the rest of his life in exile.

22 Squealer

A small, white, fat porker who serves as Napoleon's second-in-command and minister of propaganda, is a manipulative character and cleverly and subtly uses persuasion to convince the other animals.

23 Propaganda used by Stalin

Worked for Stalin to support his image and used lies to convince people that he was a good leader.

24 Boxer

A loyal, kind, dedicated, extremely strong, hard-working, and respectable cart-horse, although quite naive and gullible. Boxer does a large share of the physical labour on the farm and he is taken advantage of by Mr. Jones and the pigs.

25 Dedicated communist supporters

People believed everything Stalin told them because he was a communist and many stayed loyal to him even when it became obvious that Stalin was a cruel dictator. They were betrayed by Stalin who ignored and killed them.

Year 8 Mathematics – Knowledge Organiser – Operations and Equations with Directed Number - Autumn Term

Key Vocabulary:

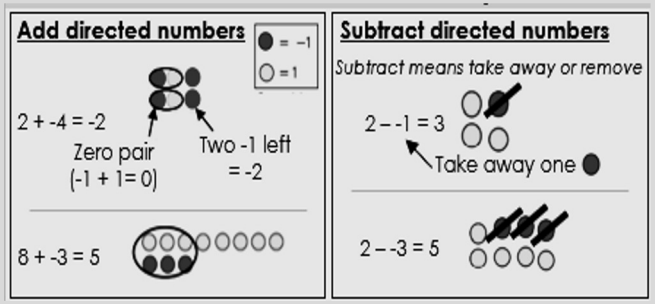
1	Positive	A value greater than zero.
2	Negative	A value less than zero.
3	Ascending	An arrangement of values from smallest to largest.
4	Descending	An arrangement of values from largest to smallest.
5	Increase	To become greater in value.
6	Decrease	To become less in value.
7	Add	To bring two or more numbers together.
8	Subtract	To take away a number(s) from another number.
9	Minus	To take away a number(s) from another number. (The same as to subtract.)
10	Zero Pair	A set of two numbers that sum to zero.
11	Square Root	A factor of a number that, when multiplied by itself, gives the original number, e.g. 4 is the square root of 16.
12	Power	A base number raised to an exponent, where the base number is the factor that is multiplied by itself, and the exponent denotes the number of times the base number is multiplied.

13 Understand and Use Representations of Directed Numbers

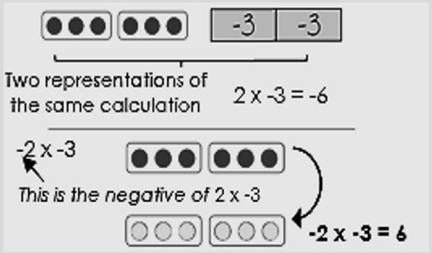
Number lines are useful to help you visualise the calculation crossing 0.

Use the number line to guide subtraction of 6.

14 Add and Subtracting Negative Numbers



15 Multiply and Divide Directed Numbers



16 Evaluate Algebraic Expressions

With negative numbers the brackets are important, e.g. $(-4)^2$ – include brackets so that it performs -4 x -4.

$a = 5$ $\quad$ $b = -4$

$a^2 = 5^2$ $\quad$ $b^2 = (-4)^2$

$a^2 = 25$ $\quad$ $b^2 = 16$

Substitute accurately and maintain the correct order of calculations throughout.

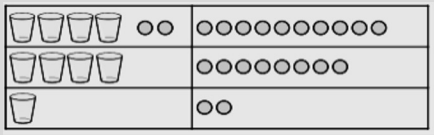
Brackets around negative substitutions helps remove calculation errors.

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

17 Solve Two-Step Equations

$$4x + 2 = 10$$

How does the diagram connect to the calculation?



18 Roots of Positive Numbers

Understanding square roots

A square number comes from multiplying a number by itself.

4 x 4 = 16 therefore 16 is a square number.

16 also has another square root, this is because:

-4 x -4 = 16

Every number has a positive and negative square root.

What is the inverse of squaring a number?

The inverse of squaring a number is to find the square root of a number.

$4^2 = 16$ $\quad$ $(-4)^2 = 16$

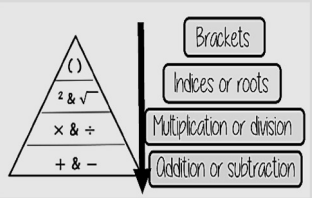
$\sqrt{16} = 4$ and -4

Remember the square root has a positive and negative value.

$\sqrt{10}$
$3.162277\ldots$

19 Order of Operations (BIDMAS)

This is the order in which we do calculations:
Brackets
Indices
Division or Multiplication
Addition or Subtraction



REMEMBER:
If you have a calculation that only has addition and subtraction, you go from left to right. The same applies if you only have division or multiplication.

Year 8 Mathematics – Knowledge Organiser - Addition and Subtraction of Fractions - Autumn Term

Key Vocabulary:

1	Denominator	The number below the line on a fraction. The number represents the total number of parts.
2	Numerator	The number above the line on a fraction. The top number. Represents how many parts are taken.
3	Divide	To separate into parts.
4	Equal Parts	All parts in the same proportion or when a whole is shared equally.
5	Mixed Number	A number with an integer and a proper fraction.
6	Improper Fraction	A fraction where the numerator is greater than the denominator.
7	Unit Fraction	A fraction where the numerator is one.
8	Whole	An integer or when the numerator is the same value as the denominator.
9	Equivalent	Something that is essentially the same or equal to something else but might have a difference in how it is represented.
10	Algebraic Fraction	A fraction which can have a variable in either the numerator, denominator or both.

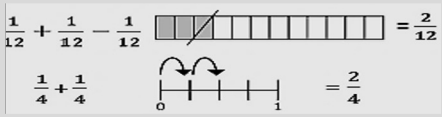
11 Representing Fractions

$\frac{1}{4}$

One quarter is represented in all of these images.

12 Add/Subtract Unit Fractions

With the same denominator ONLY the numerator is added or subtracted.



13 Mixed Numbers and Fractions

An improper fraction has a numerator which is greater than the denominator. For example:

$\frac{7}{5}$ Improper fraction

A mixed number is made up of an integer and a proper fraction. For example:

$1\frac{2}{5}$ Mixed number

Fractions can be bigger than a whole.

To convert between improper fractions and mixed numbers, we need to look at how many parts make up the whole.

The bar models show $\frac{13}{6}$.

There are 6 parts in the whole.

$13 \div 6 = 2$ remainder 1

$\frac{13}{6} = 2\frac{1}{6}$

The bar models show $3\frac{2}{5}$.

There are 5 parts in the whole.

$3 \times 5 = 15$

$\frac{15}{5} + \frac{2}{5} = \frac{17}{5}$

14 Adding or Subtracting Fractions

Find the LCM of the denominators to find a common denominator. Use equivalent fractions to change each fraction to the common denominator. Then add or subtract the numerators and keep the denominator the same.

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

Multiples of 3: 3, 6, 9, 12, 15..

Multiples of 5: 5, 10, 15..

LCM of 3 and 5 = 15

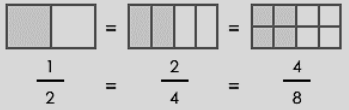
$\frac{2}{3} = \frac{10}{15}$

$\frac{4}{5} = \frac{12}{15}$

$\frac{10}{15} + \frac{12}{15} = \frac{22}{15} = 1\frac{7}{15}$

15 Understand and Use Equivalent Fractions

Equivalent fractions have different numerators and denominators but share the same value.



$\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$

16 Add and Subtract Proper Fractions and Mixed Numbers

Use bar models to help you work out the calculation.

$1\frac{1}{4} + \frac{3}{8} = 1\frac{2}{8} + \frac{3}{8} = 1 + \frac{5}{8} = 1\frac{5}{8}$

$1\frac{1}{4} + \frac{3}{8} = \frac{5}{4} + \frac{3}{8} = \frac{10}{8} + \frac{3}{8} = \frac{13}{8} = 1\frac{5}{8}$

17 Use Equivalence to Add and Subtract Decimals and Fractions

Example:

$\frac{3}{10} + 0.7$

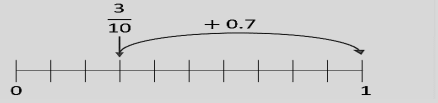
Convert the decimal to an equivalent fraction:

0.7 to $\frac{7}{10}$

Then add the fractions together.

$0.3 + 0.7 = 1$

$\frac{3}{10} + \frac{7}{10} = \frac{10}{10} = 1$



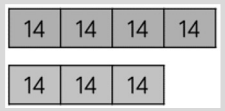
Year 8 Mathematics – Knowledge Organiser – Ratio and Scale – Autumn Term

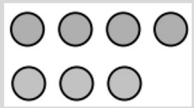
Key Vocabulary:

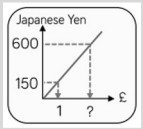
1	Ratio	Used to compare values. How much of one thing there is, compared to another thing.
2	Proportion	When two ratios or fractions are equal to each other.
3	Multiplier	The number that we are multiplying by.
4	Colon	A colon : is used to separate parts of a ratio.
5	Factors	Numbers that we can multiply together to get another number. Numbers that go into another number.
6	Equivalent	Having the same value.
7	Scale	The relationship/ratio between two sets of measurements.
8	Circumference	The perimeter (the distance around the outside) of a circle.
9	Diameter	The distance from one point on a circle to another point on a circle, through the centre. The longest distance across the circle.

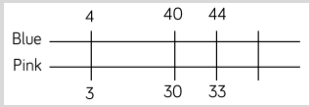
10 Representing Ratios

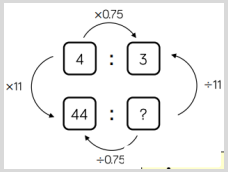
Ratios can be represented in many different ways:











11 Ratio Notation

Ratios are represented as numbers with colons in between, for example 3:1

The order of the numbers in the ratio is always important; this tells us what the information is about.

Most ratios have two parts, but ratios can have more than two parts, for example 2:3:1

12 Solving Problems in the Ratio 1 : n

The ratio 1 : n means any ratio beginning with 1, followed by any number, for example 1 : 1, 1 : 4, 1 : 200 etc.

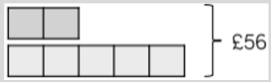
n can be any number, including decimals or fractions.

13 Dividing Values into Given Ratios

We can use a bar model to help us understand how to divide values into a given ratio.

Example

Share £56 in the ratio 2:5



There are 7 parts altogether, so we can share the £56 into these 7 parts by doing 56 ÷ 7 = 8

Now we know that 1 part = £8, we can work out how much 2 parts are (2 x 8 = £16) and how much 5 parts are (5 x 8 = £40)

We can check our answer is correct by adding together our amounts and seeing if we get our original value: 16 + 40 = 56, so we are correct.

14 Expressing Ratios in Simplest Form

We can simplify ratios by finding **factors** in all parts of the ratio.

Example

Simplify the ratio 12 : 18

We know the highest **factor** of both 12 and 18 is 6, so we can divide both numbers by 6.

12 ÷ 6 = 2

18 ÷ 6 = 3

So, the simplified ratio is 2 : 3

(Remember, the order is important, this shouldn't change!)

15 Comparing Ratios and Fractions

We can use representations (like those in section 10) to help us compare ratios and fractions.

Example

Ratio	*Fraction*
Red : Yellow	$\frac{2}{7}$ are red
2 : 5	$\frac{5}{7}$ are yellow

16 Understanding π as a Ratio

π is a number that represents the ratio of the **circumference** of a circle to the **diameter** of a circle, so $\pi = \frac{C}{d}$.

This can be rearranged to find the formula for the **circumference** of a circle: $C = \pi \times d$.

We can substitute values of the **diameter** into this formula to calculate the **circumference** of any circle.

Example

The radius of a circle is 8m. Find the circumference.

C = π x 16 = 16π = 50.265 … m^2

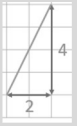
17 Understanding Gradient as a Ratio

Gradient (or slope) describes how steep a line is.

We can calculate the gradient of a line using the ratio of width : height of a triangle.

Once we make the width equal 1, the height tells us the gradient of the line.

Example



Here the width : height ratio is 2 : 4

This can be simplified to 1 : 2

The width is 1, and the height is 2, so the gradient is 2.

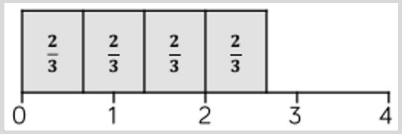
Year 8 Mathematics – Knowledge Organiser – Multiplying and Dividing Fractions – Autumn Term

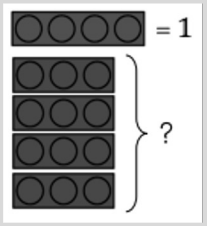
Key Vocabulary:

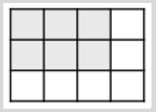
1	Unit Fraction	A fraction with 1 as its numerator, and an integer (whole number) as its denominator. E.g. ¼
2	Numerator	The top number in a fraction.
3	Denominator	The bottom number in a fraction.
4	Product	The answer when two or more values are multiplied together.
5	Whole	All of something. A thing that is complete in itself.
6	Non-unit Fraction	A fraction where the numerator is greater than 1. E.g., ¾
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 ½. When we multiply a number by its reciprocal, we get 1. E.g. 2 x ½ = 1.

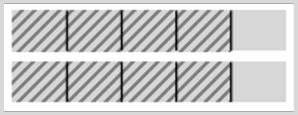
10 Representing Fraction Multiplication

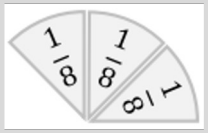
Fraction multiplication can be represented in many different ways, using the idea of repeated addition as well as pictures/physical objects and bar models.





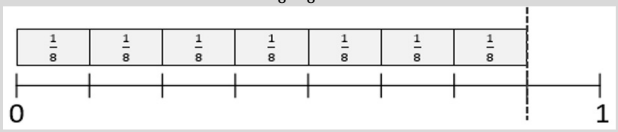






11 Multiplying a Fraction by an Integer

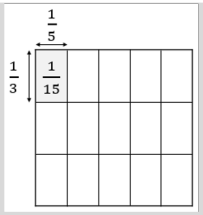
We can use a number line to understand how to multiply a fraction by an integer. For example: $7 \times \frac{1}{8} = \frac{7}{8}$



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

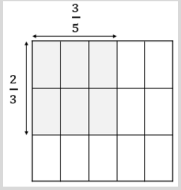


13 Finding the Product of Any Fractions

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

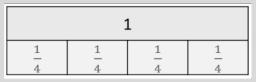
For example: $\frac{3}{5} \times \frac{2}{3} = \frac{6}{15} = \frac{2}{5}$

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., $1 \div \frac{1}{4} = 4$

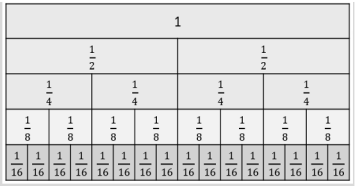


We can link dividing by a fraction with multiplying by an integer to help us understand the relationship between the two.

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., $\frac{1}{2} \div \frac{1}{16} = 8$



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 it's reciprocal, we can apply this to divide any pair of fractions.

For example:

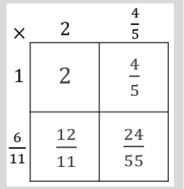
$5 \div \frac{2}{3} = 5 \times \frac{3}{2} = \frac{15}{2} = 7\frac{1}{2}$

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

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 follow the same rules as numerical fractions.

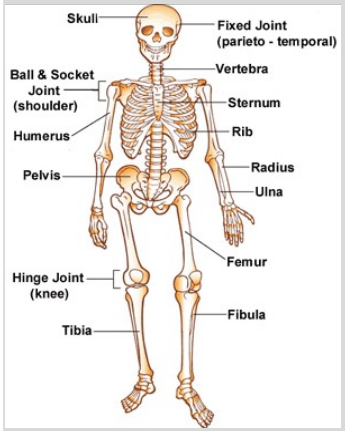
Year 8 Science Autumn Term Knowledge Organiser – Tissues and Organs

Key Vocabulary:

1	**Alveoli**	Small air sacs found at the end of each bronchiole. Alveoli are the site of gas exchange with blood.
2	**Antagonistic pair**	Two muscles which carry out opposite actions at the same time to bring about a change in movement.
3	**Cilia**	Microscopic hairs that line the inside of the trachea and bronchi.
4	**Diaphragm**	Sheet of muscle that sits under the lungs and ribcage.
5	**Diffusion**	The net movement of particles from a region of higher concentration to a region of lower concentration.
6	**Epithelial cells**	A type of cell found on the surfaces of organs.
7	**Exhalation**	The process of breathing out.
8	**Inhalation**	The process of breathing in.
9	**Respiration**	A chemical reaction that releases energy mitochondria.
10	**Trachea**	A tube that carries air from the mouth and nose, to and from the lungs. (Also called the **windpipe**)
11	**Depressant**	A drug that slows down the nervous system.
12	**Hallucinogen**	A drug that affects the brain, causing hallucinations and changes a person's perception of reality.
13	**Stimulant**	A drug that affects the nervous system, causing increased alertness and activity.

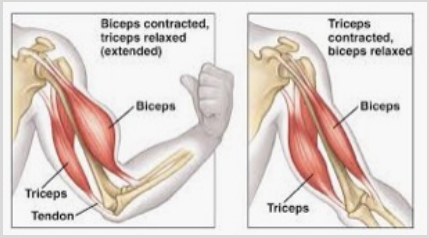
Organ Systems

14 Skeletal System



2. The skeleton is made up of bones. It has 4 important functions:
- to support the body and give it shape
- to protect the internal organs
- to allow body movements
- to produce blood cells

15 Antagonistic Muscles



6. Antagonistic muscles work in pairs.
7. An example of antagonistic muscles is the biceps and triceps.

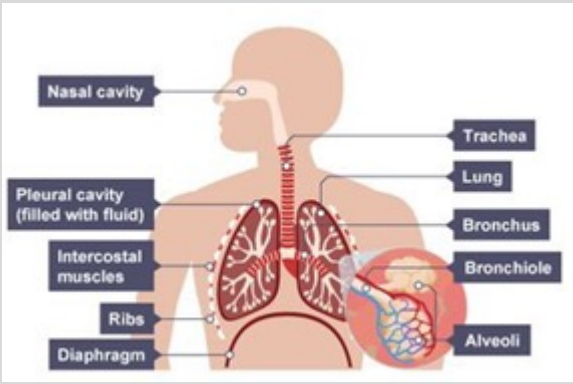
16 Drugs

- A drug is any substance that has an effect on the body
- A drug taken to treat an illness is called a medicine.
- Recreational drugs are taken by people for enjoyment. They can often be addictive
- Drugs are classified as illegal if they cause serious harm to the body.
- Opium-related painkillers cause feelings of pleasure and trance state.
- Hallucinogens cause 'out of body' experiences and mood swings

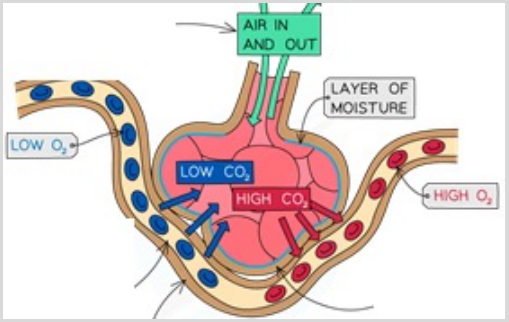
Organ Systems

17 The Respiratory System

Air enters the body through the nose and mouth. It then travels down the windpipe (trachea), through a bronchus then a bronchiole into an alveolus. Oxygen diffuses into the blood at the alveoli.



18 The Alveoli and Gas exchange



The alveoli provide an efficient exchange surface because:

a) The walls are thin, made of just one layer of epithelial cells
b) They have a large surface area: There are lots of them and they are spherical in shape
c) They have a good blood supply: There are lots of blood capillaries wrapped around them.
d) They are moist, which helps gases to diffuse across more easily.

Year 8 Acids & Alkalis. Science Autumn Term

Key Vocabulary:

1	**Acid**	A substance which has a pH lower than 7.
2	**Alkali**	A base which is soluble in water.
3	**Base**	A substance that has a pH value of greater than 7 and can neutralise an acid.
4	**Corrosive**	A substance that can cause irreversible damage when touched. *Some common **corrosives** include hydrochloric acid, sulphuric acid, ammonium hydroxide, and sodium hydroxide.*
5	**Indicator**	A substance that changes colour to show whether a solution is acid or alkaline. *Universal indicator and Litmus paper are examples of **indicators**.*
6	**Neutralisation**	A chemical reaction that occurs when an alkali reacts with an acid to produce a neutral solution.
7	**Neutral**	A solution that has a pH value of 7.
8	**pH Scale**	The reference frame used to determine whether a solution is acidic, alkaline or neutral. *The **pH scale** is a measure of the acidity or alkalinity of a substance.*
9	**Salt**	A substance produced by the reaction of a metal and an acid
10	**Compound**	A substance that is made up of two o more elements chemically bonded together

11 The pH Scale

Substances can be classified into acidic, alkaline and neutral solutions

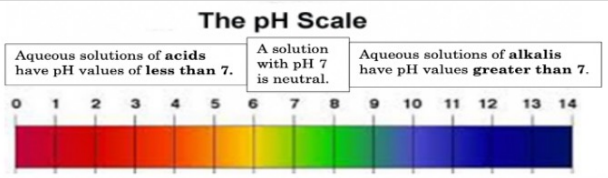
The pH scale, from 0 to 14, is a measure of the acidity or alkalinity of a solution

The pH scale can be measured using litmus, universal indicator or a pH probe.

A solution with pH 7 is neutral.

Aqueous solutions of acids have pH values of less than 7

Aqueous solutions of alkalis have pH values greater than
An aqueous solution is any solution in which the solvent is water



12 Litmus Indicator

Litmus indicator is red in an acidic solution.

Litmus indicator is blue in an alkaline solution.

Litmus indicator remains the same colour in a neutral solution.

To remember this, it might be helpful to memorise the rhyme
Blue to red, acid is said
Red to blue, acid untrue

13 Universal Indicator

Universal indicator is sometimes called UI

Universal indicator can be used as a liquid solution or as paper strips to dip into a solution.

Acids will turn universal indicator red or orange.

Neutral solutions will turn universal indicator green.

Alkaline solutions will turn universal indicator blue or purple.

14 Neutralisation

In neutralisation reactions an acid reacts with an alkali to form a salt and water.

Neutralisation forms a neutral (pH7) solution.

A salt is a metal compound made from acid.

A salt is formed when the hydrogen in an acid is replaced by a metal.

Acids + alkali/base → salt + water
Acronym: A + A/B → S + W

15 Metal Carbonates

Metal carbonates react with acids in neutralisation reactions to form a salt, water and carbon dioxide

In an open system these products can escape, and the system is neutral

In a closed system carbon dioxide reacts with water to form carbonic acid, which makes the system acidic

Year 8 Science Autumn Term Knowledge Organiser – Movement and Pressure

Key Vocabulary:

1	**Speed**	How much distance is covered per unit time. Measured in m/s.
2	**Gradient**	A measure of the steepness of the line or curve on a graph.
3	**SI Unit**	A standard unit of measurement.
4	**Average Speed**	When an object travels at different speed throughout a journey, its average speed is the total distance divided by the total time taken.
5	**Stationary**	When an object is not moving.
6	**Acceleration**	How quickly an object changes speed or direction.
7	**Deceleration**	A decrease in speed, or a negative acceleration.
8	**Relative Motion**	How observers judge motion if they themselves are in motion.
9	**Pressure**	The amount of force exerted per unit area.
10	**Force**	A push, pull or twist that can change an object's shape, speed or direction.
11	**Moment**	A moment is the turning effect of a force.

12 Speed

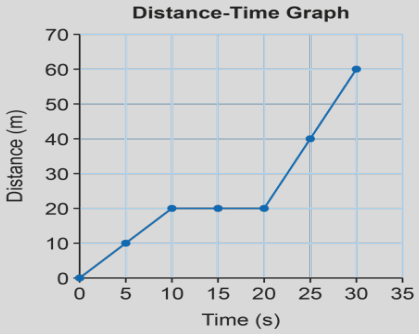
- Speed is how much distance is covered per unit time
- The SI unit for speed is m/s
- If an object is stationary its speed is 0 m/s
- Average speed is the overall distance divided by the overall time taken for a journey
- Speed=Distance/Time
- Time=Distance/Speed
- Distance=Speed x Time
- Acceleration describes how quickly a speed is changing (either speeding up or slowing down)
- An object speeding up has positive acceleration
- An object slowing down has negative acceleration
- Acceleration can also refer to a change in direction

13 Relative Motion

- Relative motion describes how different observers judge speed differently if they are in motion too
- If an observer is stationary, the relative motion of the moving object will be the same as its actual speed
- If an observer is travelling in the same direction as the moving object, the relative motion is the difference in their speeds and the object will seem to be moving more slowly
- If an observer is travelling in the opposite direction as the moving object, the relative motion is their speeds added together and the object will seem to be moving faster

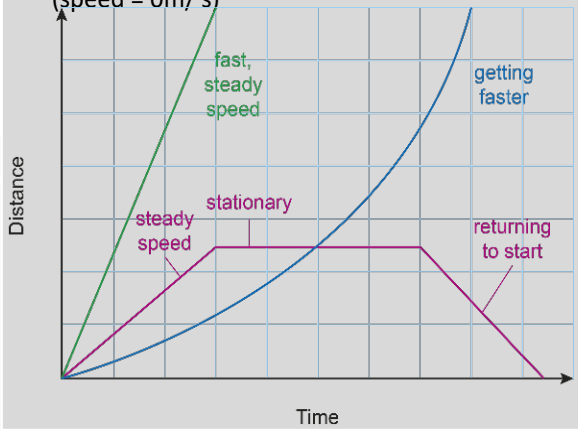
14 Distance-Time Graphs

A distance-time graph can be used to describe an object's motion



15 Distance-Time Graphs

- A straight line represents an object moving at constant speed
- The gradient of a distance-time graph represents speed
- The steeper the gradient the greater the speed
- A line returning to the x-axis represents an object returning to its starting position
- A horizontal line represents a stationary object (speed = 0m/ s)



16 Pressure

- Pressure is the force applied per unit area.
- Pressure (N/m^2) = Force (N)/ area (m^2)
- Pressure is increased by a smaller area and decreased by larger area
- Pressure is increased by a larger force and decreased by a smaller force
- $p = F / A$
- $F = p \times A$
- $A = F / p$

17 Moments

- A moment is the turning effect of a force.
- The size of a moment can be calculated using the equation

Moment = force x distance

- Moments act clockwise or anticlockwise around a fixed point called a pivot and explain how we are able to make things turn.

Year 8 Science Spring Term Knowledge Organiser – Respiration & Photosynthesis

Key Vocabulary:

1	**Aerobic**	Requiring oxygen.
2	**Anaerobic**	Without oxygen.
3	**Biodomes**	A self-contained and self-sufficient environment.
4	**Breathing**	The movement of air into and out of the lungs through the nose and mouth.
5	**Chloroplast**	Organelle that contains the green pigment, chlorophyll, which absorbs light energy for photosynthesis
6	**Chlorophyll**	One among a group of pigments used to convert sunlight energy into chemical energy through the process of photosynthesis.
7	**Epidermis**	Epidermis is the outermost layer of (skin or leaves).
8	**Fermentation**	An anaerobic process in which energy can be released from glucose even if oxygen is not available.
9	**Glucose**	One of a group of carbohydrates known as simple sugars
10	**Lactic acid**	An acid present in muscle tissue as a product of anaerobic respiration.
11	**Mitochondria**	Part of the cell where energy is released.
12	**Oxygen Debt**	The volume of extra oxygen the body needs after exercise to react with the accumulated lactic acid and remove it from the cells.
13	**Transpiration**	Movement of water through a plant from where is absorbed at the roots to where it evaporates from stomata.
14	**Stomata**	Microscopic pores found on the epidermis of plants.

Respiration

15. Aerobic Respiration

- Respiration is a chemical reaction that gives out heat (exothermic)
- All living things respire.
- Respiration is carried out in all cells continuously.
- The purpose of respiration is to release energy for organisms to use.
- Living things need energy for movement, keeping warm and for other chemical reactions to build molecules
- Aerobic means 'requiring oxygen'
- The word equation for aerobic respiration is:

Glucose + oxygen → carbon dioxide + water

16. Anaerobic Respiration

- Anaerobic means 'without oxygen'
- Anaerobic respiration takes place without oxygen and releases less energy than aerobic respiration
- During intense exercise, if there is not enough oxygen then anaerobic respiration takes place
- Aerobic respiration uses oxygen and releases more energy than anaerobic respiration
- Anaerobic respiration in muscle cells causes a build-up of lactic acid which results in an oxygen debt
- The word equation for anaerobic respiration in animals is:

Glucose → lactic acid

- Anaerobic respiration in yeast cells is called fermentation and is used to make bread and alcoholic drinks
- The word equation for fermentation is:

Glucose → ethanol + carbon dioxide

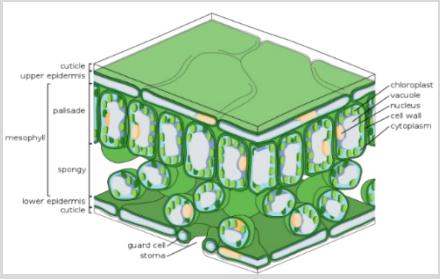
17 Photosynthesis

- Plants and algae make their own food using a process called photosynthesis.
- Light provides the energy needed for photosynthesis
- Water and carbon dioxide are the reactants required for photosynthesis.
- Plants make carbohydrates in their leaves by photosynthesis and gain mineral nutrients and water from the soil via their roots.
- The products of photosynthesis are oxygen and glucose.
- The word equation for photosynthesis is:

carbon dioxide + water → glucose + oxygen

Photosynthesis

18. The Leaf



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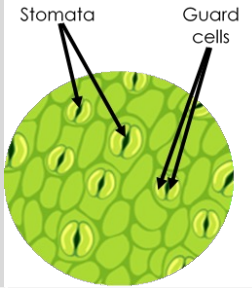
- Epidermis – thin and transparent to allow more light to pass through leaf to get to chloroplasts
- Palisade mesophyll - site of photosynthesis and contains lots of chloroplasts to absorb max sunlight
- Spongy mesophyll – contains lots of air spaces to increase surface area and allow carbon dioxide and oxygen to diffuse easily
- Stomata – holes in the leaf to allow carbon dioxide to diffuse in and oxygen to diffuse out
- Guard cells – to open and close the stomata to let substances in and out and to close it in order to prevent water loss
- Xylem - transport water from roots to leaves and the wall is strengthened with cellulose and lignin
- Phloem - transport water and glucose in a two way system.

20 The Leaf

- Leaves are the primary site of photosynthesis in plants.
- Chloroplasts in plant cells contain a green pigment called chlorophyll which uses the energy in light for photosynthesis.
- Leaves have a number of adaptations which allow them to carry out photosynthesis effectively.
- Water leaves the plant via the stomata on the underside of leaves.



Year 8 Art and Design Autumn Term Knowledge Organiser

Key Vocabulary:		
1	**The Formal Elements of Art**	The formal elements of art are used to make a piece of artwork. These 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.
2	**line**	A line is a mark or link between two points.
3	**mark**	Mark making describes the different lines, dots, marks, patterns and textures created to produce a work of art. Artists often use mark making and gestural qualities to express their feeling and emotions in response to something seen or something felt.
4	**tone**	Tone refers to the light and dark values of an object when drawing. There are three different types of tone. For example, shadows, mid-tones and highlights. Value in art is essentially how light or dark something is on a scale. For instance, a tonal ladder.
5	**texture**	Texture stimulates two different senses such a sight and touch. For example, a visual or tactile texture.
6	**shape**	Shape is a flat enclosed area created by a closed line or by a solid colour.
7	**form**	Form can refer to a three-dimensional composition or object.
8	**pattern**	A pattern can be a repeated or mirrored design, which can be natural or manmade.
9	**colour**	Primary, secondary, tertiary and complementary. Complementary colours are directly opposite to each other on the colour wheel. The colour pairs always consist of either a primary with a secondary colour (red and green; yellow and purple; blue and orange) or two tertiary colours (red-orange and blue-green; yellow-green and red-purple; yellow-orange and blue-purple).
10	**harmonious colours**	Colour harmony is achieved using colours that relate to one another in some way.
11	**tint**	Tint is when a colour becomes lighter by adding white.
12	**space**	Space is the gap between objects. The scale of something is its size. Scaling something is to enlarge it. Scaling down is to do a smaller version. This is called a reduction.
13	**balance**	If a picture or piece of artwork has balance, then each part of it works well together in a whole piece. For example, not symmetrical but always well matched.
14	**composition**	The arrangement of elements in a piece of art into a successful conclusion.
15	**mixed media**	Mixed media refers to a visual art form that combines a variety of media in a single artwork.
16	**The Golden Ratio**	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.
17	**Universal Themes in Art**	The subject matter that artists use for their work.

Year 8 Computing Autumn Term Knowledge Organiser: Accessing the Network and Email

Key Vocabulary:		
1	**Network**	Computers that are linked together
2	**School Network Access**	Using your user name and password to log into the computers at school to access the shared resources and internet.
3	**User name**	Special name used to access a network
4	**Password**	Set of secret letters and numbers to access a computer account.
5	**Characters**	Letters, numbers and symbols
6	**My Documents**	Private are on school network only the user can access. This is where the user saves their work.
7	**Student Shared Resources**	Public area on school network. Teachers can save documents here for students to access but students cannot save here.
8	**Secure**	Certain to remain safe
9	**Professional Email use**	Using punctuation, grammar and a formal tone
10	**Recipient**	The person being SENT an email
11	**CC**	Email use: CC means Carbon Copy. This sends a copy of the information to this person to inform that of what is being said but does not need a response.
12	**BCC**	Email use: Blind Carbon copy. Sends a copy of an email to an additional person BUT the recipient does not know.
13	**Subject**	A title regarding what the email is about

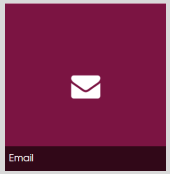
Accessing the Network & E-Safety

14 How to log on to school network:

User name: R8FirstnameMiddleInitalSurname
(EG: Name: Joseph Rayner Stephens becomes R8JosephRStephens
No middle name: Joseph Stephens becomes R8JosephStephens)
Password: Your own secret word and number combination!

15 How to access school email:

To access your school email at home, go to the school website and scroll down to this button



User: R8FirstnameMiddleInitalSurname@rshs.spt.ac.uk
(EG: Name: Joseph Rayner Stephens becomes R8JosephRStephens@rshs.spt.ac.uk)
Password: Same secret password as logging onto school network

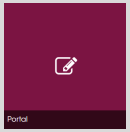
16 Who can see my school email & network area:

Your school email can be viewed by the School Network Manager, Technician, Head of House and Teachers.

Emails are monitored and automatically scanned for inappropriate content to protect students. There are consequences for anyone misusing the school email system.

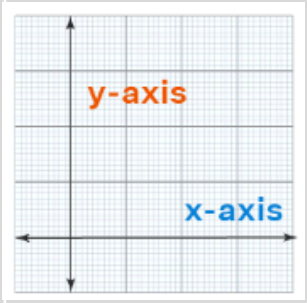
17 How to access network remotely via portal:

To access your school email at home, go to the school website and scroll down to this button. Use the same logging on details as you would in school.



User: R8FirstnameMiddleInitalSurname@rshs.spt.ac.uk
Password: Same secret password as logging onto school network

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

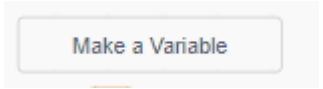
Key Vocabulary:		
1	**Program**	A program is a set of instructions that tell a computer what to do.
3	**Sequence**	The order of the instructions in the code
4	**Iteration**	Repeat
5	**Selection**	A decision in the code.
6	**Conditional Statement (IF)**	A point where a decision is made by the user.
7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

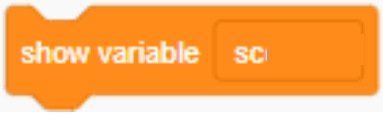
CODE BLOCK IN SCRATCH

ITERATION

SELECTION

VARIABLE





Year 8 Drama Autumn Term Knowledge Organiser

Key Vocabulary:

1	Non Naturalistic	To create a performance that we would 'not normally see' in real life – using tableaux, monologue, songs etc
2	Stage Positions	Where actors and set are in the space: Downstage left, Upstage right
3	Physical Theatre	Creating the performance using stylised techniques: Choral movement, gestures, becoming the 'object'
4	Choral Movement and voice	Actors move or speak together or in cannon, to create an ensemble impact or effect – similar to a Mexican wave
5	Theme	The topic of the performance e.g. Supernatural.
6	Stylised	How performance is presented non naturalistically.
7	Sustain	To be in role or character throughout without showing nerves or laughing

Dramatic Tension

8 Key skills

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

9 Key knowledge

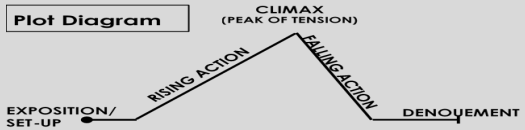
Dramatic tension is how you keep an audience hooked to the story of your play. It is about creating and maintaining an audience's involvement in the "journey" of your play. One of the main ways of creating tension is by planting questions in the "mind" of the audience.

10 Rehearsal Skills

Devising: is a method of theatre -making in which the performance originates from collaborative, often improvisatory work by a performing ensemble.

Researching: Collecting evidence for the content and moral of a performance; Includes facts, interviews and personal thought.

11 Plot Diagram



12 Props, Costume, sound and lighting effects to create mood and atmosphere

Mood and Atmosphere help the audience to feel something. Maybe it is a scary moment, or a joyful one. Mood is created by the performers through their actions, words and voices. Atmosphere is created by the production elements such as lighting, sound, music, and costume and how the performers interact with these things

Walking with Shadows by Ben Myers

13 Line Learning

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

Line Learner app download:

14 Plot Summary

Lorna Moon is 17. She goes to school, likes parties, and lives with her mother and her little brother Jamie. Life should be pretty simple right? Except of course, for the messy divorce of her parents, and her desire to hide her growing eating disorder - oh, and the unwanted attentions of a trio of cruel bullies. And most disturbingly of all, her growing suspicion that all is not as it seems in her bedroom at home, a ghostly apparition that appears to her in her mirror. Tormented and terrified, she begins to call her own sanity into question (naturally, there are no such things as ghosts. . .) Young and vulnerable Lorna Moon has a secret. Feeling alone and with no one to turn to, she finds herself being powerfully drawn to a man whose love she should never hope to have - a man fast turning out not to be all he seems. And then there's the mysterious next-door neighbour, a reclusive, creepy old man, who knows more than he is willing to say. As this pulsating tale draws to its nerve-wracking climax, will he reveal his awful secret in time to save Lorna's life?

15 Conventions of a Play Text

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

Year 8 Design and Technology Spring Term Knowledge Organiser

Key Vocabulary:

1	Form	Form is the shape, visual appearance, or configuration of an object. In other words – how a product looks.
2	Function	An activity that is natural to or the purpose of a person or thing. In other words – how a produce works.
3	Equilibrium	The condition of a system in which all competing influences are balanced. There are three types of equilibrium: stable, unstable, and neutral.
4	Design Brief	A design brief is a document for a design project developed by a person or team in consultation with the client/customer. They outline the deliverables and scope of the project; function and aesthetics, timing, budget, etc.
5	Specification	It is a list of criteria that the product needs to meet if it is to be successful.
6	Scale Models	A scale model is a physical model which is geometrically similar to an object (known as the prototype). Scale models are generally smaller than large prototypes such as vehicles, buildings. Models built to the same scale as the prototype are called mock-ups.
7	Man-Made Boards	Manufactured boards are timber sheets which are produced by gluing wood layers or wood fibres together. Manufactured boards often made use of waste wood materials. Manufactured boards have been developed mainly for industrial production

Bottle Balance

8	Coping Saw	A coping saw is a type of bow saw used to cut intricate external shapes and interior cut-outs in woodworking or carpentry.
9	File	File (tool), a tool used to remove fine amounts of material from a workpiece.
10	Glasspaper	Glasspaper and sandpaper are names used for a type of coated abrasive that consists of sheets of paper or cloth with abrasive material glued to one face.
11	Edge Treatment	The edge treatment can affect functionality and performance. Edging is done for safety, aesthetic, functionality, cleanliness, improved dimensional tolerance, and to prevent chipping. Edging is generally described as a grinding process used to remove the sharp or raw edge of cut wood.
12	Dimension	a measurable extent of a particular kind, such as length, breadth, depth, or height.
13	Diameter	A diameter of a circle is any straight line segment that passes through the centre of the circle and whose endpoints lie on the circle.
14	Radius	A radius of a circle or sphere is any of the line segments from its centre to its perimeter, and in more modern usage, it is also their length. The name comes from the Latin radius, meaning ray but also the spoke of a chariot wheel.

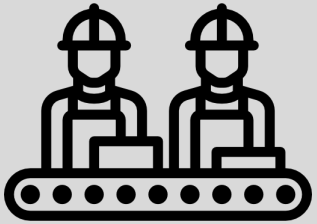
3D Design

15 **Bottle Balance - What is it?**

A unique device to display or store a bottle!

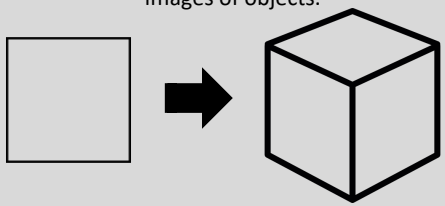
16 **Manufacture - What is it?**

Use specialist tools techniques processes equipment and machinery precisely and use a wider more complex range of materials components taking into account their properties.



15 **Isometric Projection**

It is a simple type of technical drawing of graphical projection used for producing three-dimensional (3D) images of objects.



16 **Evaluation**

Designers evaluate their finished products to test whether they work well and if design can be corrected or improved. It is important to evaluate your work constantly during the project to see if it is on track and so that improvements can be built-in throughout the design process, not just at the end.

Year 8 Food Prep Autumn Term Knowledge Organiser - How & why food is cooked

Key Vocabulary:

1	Bacteria	Bacteria are simple organisms that are invisible to the naked eye. Many bacteria are found both inside and outside of organisms, including humans. Bacteria are also found on surfaces and in substances like water, soil, and food
2	Protein	Proteins are needed for the body to function properly. A necessary part of the diet, and essential for things to grow such as skin and hair. Found in food (as meat, milk, eggs, and beans)
3	Evaporates	Evaporation happens **when a liquid turns into a gas**
4	Pasteurised	Pasteurization is **the process by which food products (such as juice and dairy products) are mildly heated to kill off harmful bacteria**
5	Method	a procedure or process for doing something. Following a recipe to produce a dish is known as the method
6	Convection	Process by which heat is transferred by movement of a heated fluid such as air or water
7	Conduction	Conduction is when heat moves from one object to another object through direct touch. For instance, one piece of metal could conduct heat from another piece of metal if the two are touching
8	Radiation	Heat radiation is **the flow of heat between objects that are not in contact with each other**. An example is the heat felt by someone standing a distance away from a hot stove

Key Vocabulary:

9	Energy	Energy is **another**. **word for power**. Energy makes things move. It makes machines work. Energy also makes living things grow
10	Fermentation	Fermentation is a chemical change that happens in vegetable and animal substances. For thousands of years people have used fermentation to make bread, wine, beer, cheese, and other foods
11	Poaching	Poaching is a cooking technique that involves heating food submerged in a liquid, such as water, milk, stock
12	Braising	Braising is a combination-cooking method that starts with pan searing followed by slow cooking in a liquid

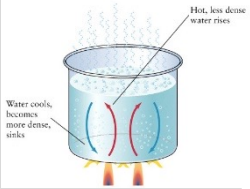
Heat Transfer

13 Conduction

When the particles collide with nearby particles, they pass some of their extra heat energy on to them. When food is placed into the hot pan, heat energy is transferred from the particles in the pan, to the particles in the food. Pans are made from metal, as metal is a good conductor of heat.

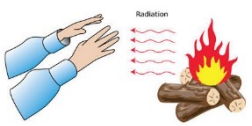
14 Convection

The warmer liquid rises above its colder surroundings. The cold liquid is heated and when it starts to rise, colder liquid takes its place. As this process continues, you end up with a circulation of fluid (convection currents) and the whole fluid is heated. Convection occurs in ovens as hot air rises and cooler air falls in the same way.



15 Radiation

Unlike conduction and convection, there is no direct contact between the heat source and the food. Cookers like grills and toasters use radiation to cook food.



Wet Cooking Methods

16 Boiling – Blanching – Poaching – Steaming - Braising

Wet cooking methods remove the need for fats. Heat is still required but this comes in the form of water or steam. Boiling blanching, poaching are all methods of cooking using water or steam. It's a very healthy way to cook and helps the food retain goodness. Blanching is a way to part cook foods quickly in water. Braising is a way of slow cooking foods, usually meats, that produces very tender succulent meat as the time taken breaks down all the fats within the meat.

17 Why do we cook food?

There are five main reasons that we cook food. Naturally not all food requires cooking, the likes of fruits and vegetables can be eaten raw as can certain meats. But foods that do require cooking are more often than not to remove any harmful bacteria that can make us unwell. Below (18 & 19) you will see more reasons to cook food.

18 Texture & Flavour

Cooking food creates texture which makes food nice to eat. Cooking food also creates flavour. A great example of both examples coming together is a roast potato. Roasting food intensifies the flavour and the high temperatures in the oven creates a crispy outer to the potato. The same potato can be boiled and eaten as mashed potato, but the texture and flavour are completely changed if roasted.

19 Shelf Life & Variety

We also cook foods to provide variety in our diet, eating the same food all of the time would get very boring. Beef is a good example, and we can use beef minced for a lovely bolognaise, or a burger, or a steak, or cubed in a pie. Variety is important.

It is also important to cook food to assist with shelf life and making our food last longer. Milk is the best example. Milk goes through a process called 'pasteurisation' and this is when we heat and cool the milk. The heating process kills all the bacteria, and the cooling process allows the milk to stay fresh for longer. Fresh milk straight from the animal would go bad after a few hours, but pasteurising the milk means we can keep milk fresh for around a week. This is very a valuable way of reducing waste.

Year 8 Geography Autumn Term Knowledge Organiser: Exploring the Coast

Key vocab	Definition
1.Coastline	Where the land meets the sea.
2.Deposition	The dropping of material when the sea loses energy
3.Erosion	The breaking down of rocks
4.Transportation	The movement of material from one place to another
5.Hard rock	Rock that is more resistant to erosion
6.Soft rock	Rock that is eroded very quickly
7.Soft Engineering	The natural environment is used to help stop coastal erosion
8.Hard Engineering	Building structures out of wood or concrete which try to stop coastal erosion
9.Impact	Something that happens because of a previous action. This can be positive or negative
10.Prevailing wind	Wind that is continuously coming from a certain direction
11.Climate change	A change in long term weather patterns

12. Headlands

A section of hard rock jutting out into the sea that has been eroded over time.

13. Bays

Soft rock at the coast is eroded quicker so recedes back from the headland. A beach is formed

14. Headland landforms

Cave
Waves attack a weakness in the cliff. The crack widens by hydraulic action and becomes deeper and hollow

Arch
The back of the cave is punched through by attrition and abrasion to create an arch

Stack
The material above the arch becomes unstable and collapses into the sea to create a stack that is no longer connected to the headland

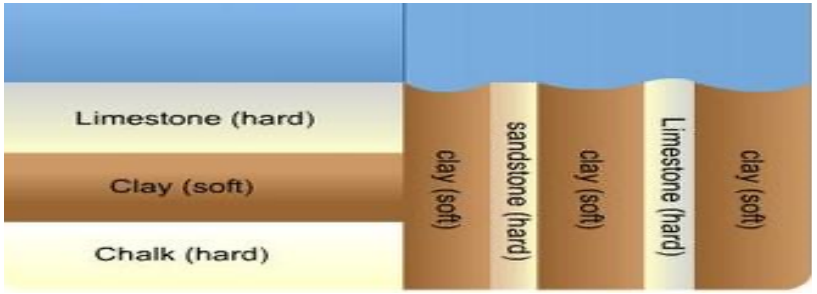
Stump
Further erosion happens on the stack to make the top unstable and smaller. This is called a stump.

15.Concordant coastline

Hard and soft rock types are layered horizontally. The same type of rock is along the whole length of the coastline.

16. Discordant coastline

Bands of hard and soft rock are layered vertically along the coastline. There are alternating types of rock the whole length of the coastline



17. Coastal management: Dorset

Hard engineering strategies

Groynes – timber or rock frames built out to sea. Trap sediment moved by longshore drift and create a wider beach.
Found at Swanage

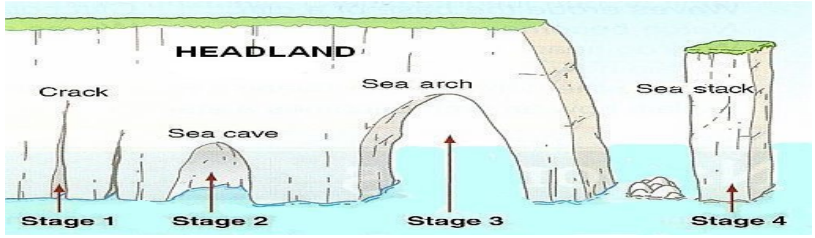
Rock armour – Large boulders dumped at the foot of a cliff to absorb wave energy and stop hydraulic action
Found at West Bay

Sea walls - Concrete walls built at the foot of cliffs. Can be curved to reflect wave energy back into the sea
Found a Lyme Regis

Soft engineering strategies

Beach nourishment – Sand from further along the coast is added to a beach to make it higher or wider.
Found at Bournemouth, Poole and Weymouth

Managed retreat – Allowing low lying coastal areas to flood and become salt marshes. Salt marshes absorb all wave energy instead of the headlands

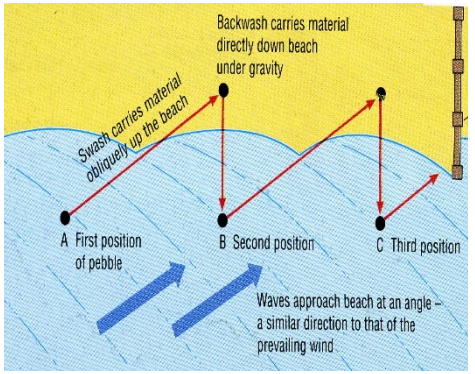


18. Type of erosion	Definition
Hydraulic action	The sheer power of the waves smash against the cliff. And traps air in cracks causing them to break apart
Abrasion	Pebbles grind along the rock platform, over time the rock becomes smooth.
Attrition	Rocks carried by the sea knock against each other, break apart and become more rounded.
Solution	Sea water dissolves certain types of rock such as limestone and chalk

19. Longshore drift

Longshore drift is a type of transportation.

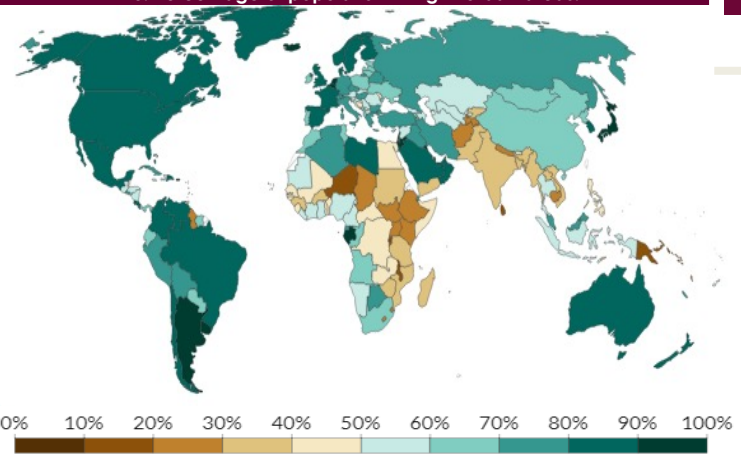
- Waves approach the coastline at an angle because of the prevailing wind.
- Swash carries the material up the beach at a diagonal angle.
- Backwash then pulls beach material down towards the sea at a 90 degree angle.



Year 8 Geography Autumn Term Knowledge Organiser: Exploring Cities

Vocab	Definition
1.Urbanisation	The movement of people in to urban areas increasing their size.
2.Push Factor	Something negative about a rural area that makes people want to leave.
3.Pull Factor	Something positive about urban areas that attract people there.
4.Migration	The movement of people from one place to another.
5.AC	Advanced Country – High literacy rates, high life expectancy and high literacy rates.
6.EDC	Emerging Developing Country – Improving economy and life expectancy, jobs in manufacturing.
7.LIDC	Low Income Developing Country – High death rate and high birth rates.
8.Counter Urbanisation	The movement of people out of urban areas and in to rural areas. Typical in AC's.
9.Regeneration	The renewal and improvement of urban areas.
10.Urban Deprivation	Areas where standards of living are below what you would expect in a country with that level of development.
11.Slum / Shanty Town / Favela	An area in a city that is over crowded, illegal and inhabited by the poorest in a city. Typically found in EDC's and LIDC's.
12. Urban Sprawl	The spreading out of a city on to surrounding undeveloped land.

13. Percentage of population living in urban areas.



14. Causes of Urbanisation

Push Factors	Pull Factors
• Natural disasters • War and conflict • Low paying farming jobs • Drought	• More Jobs • Better education and healthcare • Increased quality of life. • Following family members.

15. Causes of Counter - Urbanisation in AC's

- Overcrowding and pollution.
- Unemployment increases.
- Deindustrialisation of centre.
- Traffic congestion increases CO^2.
- Green spaces & family friendly.
- New modern housing estates.
- Improved public transport.
- Rents cheaper on outskirts.

16. Regeneration of Manchester

Cottonopolis – *Growth during the industrial revolution from making cotton.*

Gunchester – *By the late 1980s gang violence, stabbings and shootings becoming common.*

Sport City – *I hosted the 2022 Commonwealth Games and a new stadium and velodrome were built in East Manchester.*

Media City – *2011 Media City is built on the old Salford Quays site and BBC moves it children and sports branches.*

Madchester – *1980's centre of music and creativity making the universities attractive to students.*

IRA Bombing – *1996 the city centre was devastated and 200 people were injured when the IRA set off a bomb.*

New Islington – *Former housing estates transformed by developer Urban Splash to create a new urban community.*

17. London

London is the capital city of the United Kingdom. It is located in the South East of England and has a population of roughly 9 million people.

18. The challenges facing London.

Housing costs in London has risen exponentially in inner and outer London. This is due to international investors buying property in the city centre.

Air quality in London is dangerously poor in London – a congestion charge was implemented in 2003 to deter people from driving into the city centre at peak times.

19. Opportunities for London

It was the UK's first large-scale mixed use sustainable community, with 100 homes, office space for around 100 workers and community facilities

Pedestrian only zones created in the city centre
Healthy streets - £2.1 billion were invested in cycling and public transport use to improve road safety and air quality.

20. Rio de Janeiro

Rio de Janeiro is one of Brazil's largest cities, it is not the capital city. It is on the south east coast of Brazil. The population of Rio de Janeiro is 6.7 million people.

21. The challenges facing Rio de Janeiro

Violence can be a barrier to education as in some neighbourhoods it is not always safe for children to travel to school.

Urban sprawl is an issue as the city continues to grow rapidly, encroaching on surrounding rural (countryside) areas. Air pollution can be a problem, particularly from traffic congestion in the city centre and from industrial zones.

22. Opportunities for Rio de Janeiro

To reduce congestion, Rio de Janeiro has invested in public transport. The city has a series of BRT (bus rapid transit) corridors.

The Schools of Tomorrow programme has helped to improve the quality of education across the city. The programme targeted 155 schools in Rio's most violent neighbourhoods.

Year 8 History Autumn Term Knowledge Organiser: Why did we kill our King?

Key Vocabulary:

1	**Monarch**	The king or queen of a country
2	**Divine Right of Kings**	The belief that God has chosen someone to be king
3	**Civil War**	War where a country splits and begins fighting itself A supporter of Parliament during the Civil War
4	**Parliamentarian**	A supporter of parliament during the Civil War
5	**Royalist**	A supporter of the king during the Civil War. Likely to be Catholic or Protestant.
6	**Roundhead**	a nickname for a parliamentarian soldier, led by Oliver Cromwell.
7	**Cavalier**	a nickname for a Royalist soldier, led by the king.
8	**Reformation**	The change of the church to include both Catholic and Protestant churches.
9	**Protestants**	Rejected authority of the pope, plainer churches with own relationship with god.
10	**Treason**	a serious crime committed against the monarch/state.
11	**Executed**	When a prisoner is put to death e.g. by beheading.
12	**Parliament**	A group of politicians who make laws for their country
13	**Latin**	Old Roman language spoke in during Catholic services.
14	**Catholic**	The newer and reformed version of the Christian faith
15	**Puritan**	The oldest and most traditional form of Christianity.

Causes of the English Civil War

16 Economic (money)

Charles needed more money, so he raised taxes without the permission of Parliament. He also raised money through fines and Ship Tax for himself. He bought expensive art. Scottish rebels didn't like the new prayer book that had been provided, and attacked England. Charles had to call parliament for money to deal with their rebellion.

17 Religious

Charles I married a catholic people were worried he would turn the country Catholic. Archbishop Laud tired to end Puritan ideas in the Church of England, introducing a new prayer book in Scotland which had Catholic ideas. This led to Archbishops arrest in 1640, who was blamed for the rebellion of the Scottish. Charles I also believed in the Divine Right of Kings which means that God has given him the power to rule alone.

18 Political (power)

Charles I didn't listen to Parliament and was very arrogant and believed in the Divine Right of Kings. Parliament kept trying to cut King Charles' power, particularly in the first 3 years of his reign. Charles dissolved Parliament and ruled on his own. When they returned he forced his way into parliament and tired to arrest 5 MPs. Traders and landowners had grown rich since Tudor times and now they wanted more power as well.

Key Knowledge

19 New Model Army

In February 1645, the House of Commons decided to form a new army of professional soldiers. This became known as the New Model Army. These troops were paid a salary and were full time, trained professionals. It was made up of ten cavalry regiments of 600 men each, twelve foot regiments of 1,200 men. Its commander-in-chief was General Fairfax and Oliver Cromwell was put in charge of the cavalry. The New Model Army was a military force based on a person's ability rather than on their position within society. Cromwell made his troops very disciplined, making them live according to the rules of his religion, Puritan, and harshly punished anyone who broke his laws. Soldiers often fought for God, even singing hymns, or palms, before battle. The New Model Army were involved in Charles I's execution, using intimidation to ensure only those that supported his execution had the opportunity to vote if the trial should go ahead.

Key knowledge

20 Rump Parliament

A name given to the parliament that governed Britain from 1648 to 1653 and from 1659 to 1660, after the Long Parliament had been reduced in size. The Rump Parliament were the only people allowed into Parliament who Cromwell believed would support the trial of the king.

21 Royalist

1. House of Lords
2. North and West England
3. Large landowners
4. More rural
5. Led by Charles I and Prince Rupert

22 Roundheads

1. House of Commons
2. South and East England
3. Puritans
4. Merchants and townspeople

23 The execution of Charles I

He was to be tried by 135 judges who would decide if he was guilty or not. In fact only 68 turned up for the trial. Those that did not were less than happy about being associated with the trial of the king. In fact, there were plenty of MPs in Parliament who did not want to see the king put on trial but in December 1648, these MPs had been stopped from going into Parliament by a Colonel Pride who was helped by the New Model Army. The only people allowed into Parliament were those who Cromwell thought supported the trial of the king. This Parliament was known as the "Rump Parliament" and of the 46 men allowed in (who were considered to be supporters of Cromwell), only 26 voted to try the king. Therefore even among those MPs considered loyal to Cromwell, there was no clear support to try Charles.

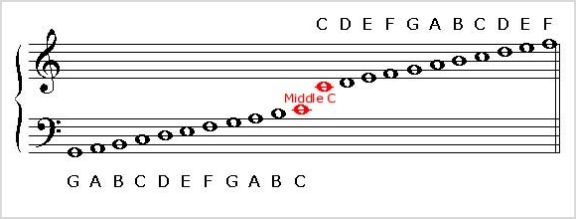
Year 8 Music Autumn Term Knowledge Organiser

Key Vocabulary:

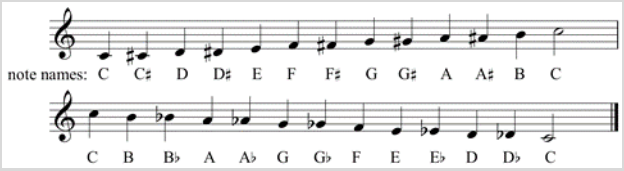
1	Music for film	Music that is composed to support the action of a film – character, scene or action
2	Theme	The melody for a character or to introduce the film as a whole
3	Leitmotif	A melody used to represent a character or an idea, usually found in film music.
4	Phrasing	Making the music sound like singing – where to "breathe" in the music so it sounds like the original
5	Melody	The main tune or theme
6	Counter-melody	A second melody – matches and compliments the main melody
7	Drone/Pedal	A long held note or repeated note to create tension and atmosphere in the Bass line
8	Chromatics	Combinations of white and black notes to create an atmosphere, villainous accompaniment
9	Diminished chords	Chords with a flattened 3rd and 5th note
10	Sequence	A techniques where the melody rises or lowers in pitch – same pattern, different notes.
11	Elements of music	Parts of the music that controls speed, pitch, volume etc

Music notation

12 The Grand Stave

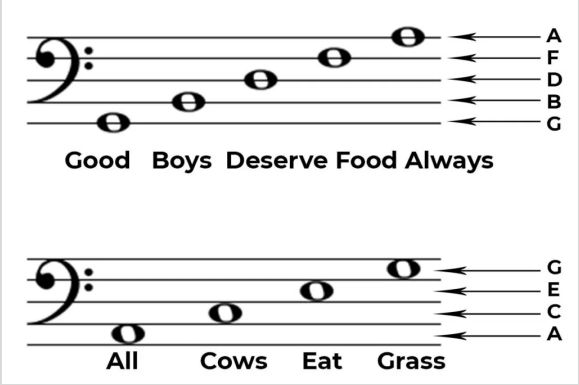


13 The Chromatic scale



Using every white and black note in order – moving up and down

14 Bass clef notes

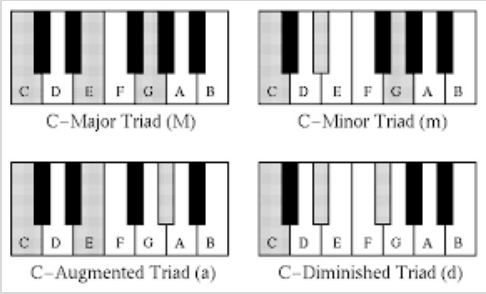


Music knowledge

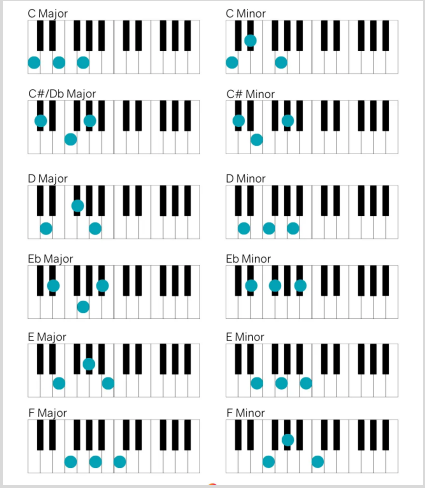
15 Elements of music

Tempo - Speed
Texture – layers of sound
Dynamics - Volume
Timbre – How the instruments are played
Tonality – How the music sounds (happy, sad, scary etc)
Rhythm – how long and short the note length is in beats
Melody – the main tune or theme
Harmony – adding chords and other melody lines to match

16 Different chords – how the notes change



17 Major and Minor chords



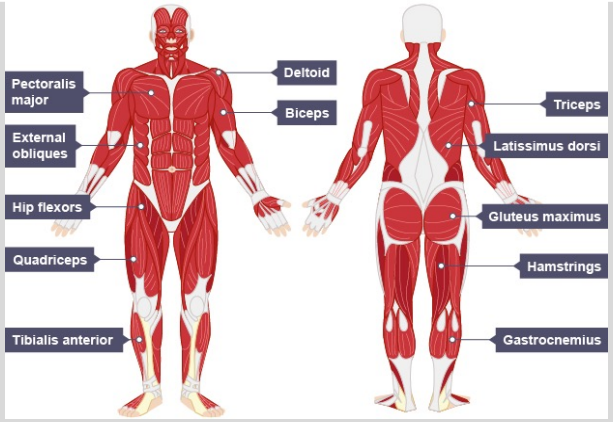
Year 8 Physical Education Autumn Term Knowledge Organiser

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	

10 Methods of training

Continuous - a steady pace, moderate intensity training method used for developing aerobic endurance. Can be running, swimming or cycling

Circuit Training- circuit training involves a series of different activities. Lots of people ca take part in a range of activities with little equipment needed

Interval training - is where periods of exercising are followed by a rest of recovery period at slower speeds. Useful for games players

11 School focus

RESPECT – BE polite and considerate
Shaking hands after the game

RESILIENCE – Positivity
Trying that skill again even though its difficult

ASPIRATION – belief in our self
What can I do to improve my performance

Year 8 Religious Studies Autumn Term Knowledge Organiser: Exploring Judaism

Key Vocabulary:

1	Omnipotent	The belief that G-d is 'all-powerful'.
2	Omniscient	The belief that G-d is 'all-knowing'.
3	Covenant	A two sided agreement made between man and G-d.
4	Patriarch	A male leader of the Jewish community. They have a special relationship with G-d.
5	Messiah	A prophesied savior. The Torah teaches that the Messiah will bring an end to all war and conflict, and will deliver the Jewish people to the Promised Land.
6	Mitzvot	Rules or commandments.
7	Rite of Passage	An event that marks a stage in someone's life, and typically a change.

What do Jews believe?

1 Nature of G-d

Jews believe that G-d is perfect, and so do not write His name in full as that is a sign of disrespect. G-d is all-powerful, all-knowing, everywhere and eternal.

2 Covenants

Throughout history G-d has made several covenants with His people. G-d has promised that the Jews are His chosen people and that they will be delivered to a Promised Land, Israel.

3 Abraham and Moses

Abraham and Moses are two important patriarchs who made covenants with G-d.

Abraham was willing to sacrifice his son, Isaac, to prove his loyalty to G-d. G-d stopped the sacrifice, and promised to make Abraham a great leader.

Moses worked with G-d to free the Jews from slavery in Egypt. G-d sent 10 plagues to Egypt before giving Moses the 10 Commandments on Mount Sinai.

4 Messiah

Orthodox Jews believe that the Messiah is a promised figure who will bring an end to all war and lead the Jews to the Promised Land.

Reform Jews believe that the Messiah that was promised might actually be a period of time that we all need to work towards.

5 Jewish Law

Jews believe that G-d has issued 613 mitzvot or commandments for people to follow. These are contained in the Torah, given to Moses, and feature rules around food, clothing, religious life and day to day life.
These also include the famous 10 Commandments.

How do Jews practice their religion?

6 Synagogue

The Jewish holy building is called the synagogue. Orthodox synagogues have separate areas for men and women to worship, whilst Reform synagogues allow men and women to sit together. Usually worship is led by a Rabbi.

7 Shabbat

The Torah teaches that G-d created the world in 6 days and rested on the 7th. The 7th day is known as Shabbat as is a day of rest for Jewish people. Shabbat is celebrated every week from sundown on Friday evening to sundown on Saturday evening. Jewish families get together as a family and focus on G-d.

8 Bar and Bat Mitzvahs

These rites of passage mark a change from a child to an adult in Judaism. Bar Mitzvahs take place for Jewish boys at the age of 13, and Bat Mitzvahs happen for girls at age 12. Following a Bar/Bat Mitzvah, the Jewish person is seen as being responsible for themselves and having to follow the mitzvot.

9 Festivals

There are many Jewish festivals throughout the year. We will focus on three: Pesach, Rosh Hashanah and Yom Kippur.

Pesach: Passover, which remembers the story of Moses freeing the slaves from Egypt and the angel of Death 'passing over' the Jewish houses.

Rosh Hashanah: Jewish New Year. On Rosh Hashanah we remember the creation of the world, and focus on judgement and forgiveness. This is a time for apologies.

Yom Kippur: Day of atonement. This is a festival that even non-religious Jews might take part in. The day is spent in prayer, often in the synagogue and people focus on G-d, getting rid of other distractions like perfume, make up and food.

Year 8 Spanish Autumn Term Knowledge Organiser-Mis vacaciones

Key Vocabulary / grammar

1

Present

Voy – I go
Vas – you go
Va – he/she goes
Vamos – we go
Vais – you(pl) go
Van – they go

Past

Fui – I went
Fuiste – you went
Fue – he/she went
fuimos- - we went
Fuisteis – you(pl) went
Fueron – they went

a… - to…

Escocia – Scotland

Gales – Wales

Italia – Italy

Grecia – Greece

Egipto – Egypt

Irlanda – Ireland

Alemania – Germany

Estados Unidos – USA

Con… - with

En… - by

Avión – plane

barco – boat

Autobús – bus

autocar – coach

Tren – train

coche – car

Let's show off

4

Acabo de ir a… - I have just been to…

Siempre he soñado con ir a… - I've always dreamed of going to…

Ojalá pudiera ir a… - I wish I could go to…

Cuesta un ojo de la cara – It costs an arm and a leg

El hotel era… - the hotel was…

El hotel tenía… – the hotel had…

Opinions

2

Fue… - it was
guay – cool
Flipante – awesome
Genial - great
Regular - ok
Horroroso - terrible
Un desastre – a disaster
Raro – strange/weird
Lo pasé bomba! – I had a fantastic time
¡Lo pasé fenomenal! – I had a wonderful time
¡Lo pasé guay! – I had a great/cool time
Lo pasé mal – I had a bad/terrible time

Activities

3

El primer día - On the first day

El ultimo día – on the last day

Primero – first

Luego – then

Después – after

Más tarde - later

Visité monumentos – I visited monuments

Compré una camiseta – I bought a t-shirt

Saqué fotos – I took photos

Monté en bicicleta – I rode a bike

Descansé en la playa – I relaxed on the beach

Mandé SMS – I sent a message

Bailé – I danced

Nadé en el mar – I swam in the sea

Tomé el sol – I sunbathed

Escribí SMS – I wrote messages

Comí una paella – I ate paella

Bebí una limonada – I drank a lemonade

Conocí a un chico guapo – I met a good-looking boy

Salí con mi hermana – I went out with my sister

5. Parallel Text:

1	El año pasado fui a España de vacaciones	Last year I went to Spain
2	Fui con mi familia y fuimos en avion	I went with my family and we went by plane
3	Luego fui en coche y luego en barco. ¡Qué rollo!	I went by car and then by boat. How annoying!
4	El primer día descansé en la playa y luego escuché música	On the first day I relaxed on the beach and then I listened to music
5	Más tarde monté el bici y saqué muchos fotos y fue flipante	later on I rode my bike and took lots of photos and it was great.
6	Otro día, por la mañana, tomé el sol.	On an other day, by the morning, I sunbathed.
7	El ultimo día nadé en el mar porque hizo calor. (¡Lo pasé bomba!)	On the last day I swam in the sea because it was hot. I had a fantastic time. (I had a blast!)
8	Por la mañana visité monumentos y vi un castillo interesante. ¡Qué divertido!	In the morning I visited sights and I saw an interesting castle.What fun!
9	Por la tarde salí con mi hermano y comí paella	In the afternoon I went out with my brother and I ate paella
10	Hice amigos. ¡Fue estupendo!	I made friends. It was amazing
11	Mis vacaciones fueron guay	My holidays were cool
12	Porque hizo buen tiempo.	Because it was good weather.
13	Me encantó.	I loved it.
14	pero comí algo mal, vomité. ¡Qué desastre!!	but I ate something bad,I was sick. What a disaster!