Hartshill Academy
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Year 7

End of Year Assessments

Wednesday 3rd June to Wednesday 17th June

Heart - Ambition - Respect - Tenacity

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Year 7

English

Heart - Ambition - Respect - Tenacity

Year 7: Knowledge Organiser

Your end of year assessment will be skills-based, meaning it is designed to test how well you can apply the key techniques and methods you have learned throughout Year 7.

Rather than focusing on specific texts, the test will assess your ability to analyse, interpret, and communicate effectively using the skills you have developed across the year.

You do not need to revise the individual texts you have studied, as these will not be directly tested. Instead, focus on practising how to use your skills confidently in new and unfamiliar contexts.

The aim is to show your understanding of how to approach different tasks, not simply what you know about a particular text.

The Girl of Ink & Stars

Subject-Specific Vocabulary

1	**Bildungsroman**	a coming-of-age novel that concerns itself primarily with the educational, emotional and moral development of the main character, from youth into adulthood
2	**magic realism**	a literary genre where magic elements are a natural part in an otherwise ordinary, realistic environment
3	**quest narrative**	a story structure where the protagonist goes on a journey in search of something. The quest usually involves several hurdles and challenges, which they must overcome.
4	**narrative structure**	exposition, rising action, climax, falling action, dénouement
5	**tension**	a feeling of nervousness or uncertainty leading up to a significant or challenging moment or event
6	**cliffhanger**	a plot device in which the end of a chapter ends in a moment of suspense when characters are left in a difficult situation without offering any resolution
7	**foreshadowing**	when the writer gives advance hints of what is to come later in the story
8	**explicit characterisation**	something the author tells us directly about a character e.g. their age, appearance, job, address, likes, dislikes
9	**implicit characterisation**	something we have to infer about a character through their actions, their dialogue, what others say about them
10	**protagonist**	the central character or leading figure in a poem, narrative, novel or any other story
11	**antagonist**	the character who opposes the protagonist
12	**hero**	a main character who, in the face of danger, combats adversity through feats of resourcefulness, bravery or strength
13	**theme**	an idea that recurs or pervades a piece of literature
14	**personification**	a type of metaphor in which something that is not human is given human traits
15	**pathetic fallacy**	When a writer gives human emotions and traits to nature, particularly the weather. It's often used to make the environment reflect the feelings of a narrator or other characters.
16	**dynamic verb**	indicates an action or process
17	**stative verb**	indicates a state of being or emotion
18	**appositive phrase**	an additional phrase that adds more information to a noun or noun phrase, verb or verb phrase
19	**participle phrase**	a type of modifier that uses the participle form of a verb to describe a noun

The Girl of Ink & Stars

Thematic Vocabulary – Power and Conflict / Gender

20	**colonialism**	a practice by which one country controls people or areas in another country, often by establishing colonies
21	**subjugated**	being controlled or dominated
22	**coercion**	using force or the threat of force to make someone do something they don't want to do
23	**sacrifice**	give up something valuable or important, usually to obtain something else for yourself or for other people
25	**gender**	socially-constructed perceptions of how men and women are expected to behave

Character and Tone Vocabulary

29	**callous**	not caring about other people's feelings, pain or problems
30	**ruthless**	hard and cruel; determined to get what you want - not caring if you hurt other people
31	**resourceful**	able to deal with situations by finding ways to succeed
33	**resilient**	describes people and things that are able to recover easily and quickly from unpleasant or damaging events
24	**integrity**	the quality of being honest and having strong moral principles that you refuse to change

Other Vocabulary

26	**fate**	a power that some people believe controls and decides everything that happens, in a way that cannot be prevented or changed
27	**redemption**	1. You do something that makes people have a good opinion of you again after you have behaved badly. 2. In many religions, redemption means when you are forgiven by God for the wrong you have done.
28	**myth**	a traditional story, often associated with a particular place or group of people, usually featuring supernatural or fantastical elements

Romeo and Juliet

Subject-Specific Vocabulary - Stagecraft

1	**soliloquy**	a speech in a play in which an actor speaks to themselves, often revealing their inner feelings
2	**monologue**	a long speech by a single character in a play, film or other performance
3	**stage directions**	instructions written by a playwright for the director and actors to follow when performing
4	**dramatic irony**	when the audience of a play is aware of the importance of a character's words or actions but the character is not

Subject-Specific Vocabulary - Poetry

5	**blank verse**	poetry that is written in iambic pentameter, but it does not rhyme
6	**rhymed verse**	poetry where the words at the ends of lines have the same sound
7	**prose**	ordinary writing not organised with rhymes or fixed line lengths
8	**metre**	the rhythmical structure of a line of poetry: the pattern of syllables (or beats) in the line
9	**iambic pentameter**	the rhythm or metre in a line of poetry, consisting of five iambs or 'feet'

Subject Specific Vocabulary – Grammar

10	**pronoun**	a word that you use to refer to someone or something, in place of a noun
11	**modal verbs**	verbs that indicate likelihood, ability, permission or obligation
12	**imperative**	a sentence that begins with a verb. a command
13	**relative clause**	a clause which gives information about a person or thing; it comes after a noun or pronoun and begins with a relative pronoun such as who, which, where, when, whose, or that
14	**appositive phrase**	an additional phrase that adds more information to a noun or noun phrase

Romeo and Juliet

Subject-Specific Vocabulary – Literary Methods

15	**metaphor**	a comparison in which a person, object or action is used to represent or symbolise another person, object or action
16	**imagery**	a method used to create a particular image to convey the key ideas, messages or themes in a text.
17	**setting**	the time and place of the story, including the physical location, weather and cultural surroundings
18	**soliloquy**	a speech or passage in a drama when a character on stage speaks to themselves, expressing inner thoughts and feelings.
19	**tragedy**	an emotional play leading to the death of the protagonist(s).
20	**hyperbole**	deliberate exaggeration used for effect
21	**tone**	the attitude or feelings that a character expresses and the way the actor says those words
22	**simile**	a literary method where a writer describes a person or thing as being similar to something else
23	**theme**	an idea that recurs (comes up again and again) or pervades (spreads through) a piece of literature

Thematic Vocabulary

24	**patriarchal**	a society, family, or system in which the men have all or most of the power and importance
25	**unrequited love**	when someone feels love for another person, but that love is not returned
26	**gender**	socially-constructed perceptions of how men and women are expected to behave

Character and Tone Vocabulary

27	**defiant**	describes someone who refuses to obey someone else
28	**manipulative**	describes someone who can skillfully force or persuade people to act in the way that they want
29	**submissive**	describes someone who obeys someone else without resisting

Relationship Poetry

Subject-Specific Vocabulary

1	**exclamation**	a type of sentence that conveys strong feelings
2	**rhetorical question**	a question that is used to make a point, rather than get an answer
3	**tone**	the attitude or feelings a writer expresses towards a subject
4	**mood**	a literary method used by writers to evoke certain feelings in readers through descriptions
5	**personification**	giving human feelings or actions to an inanimate object
6	**metaphor**	a comparison in which a person, object or action is used to represent or symbolise another person, object or action
7	**synonym**	a word which has the same or nearly the same meaning as another word
8	**speaker**	in poetry, the narrative voice or the person speaking in the poem
9	**stanza**	a group of lines that form a smaller unit within a poem
10	**rhyme scheme**	the pattern according to which rhyming words located at the end of lines are repeated in works of poetry
11	**anaphora**	the repetition of the same words at the start of successive sentences or clauses or lines of poetry
12	**metre**	the rhythmical structure of a line of poetry: the pattern of syllables (or beats) in the line.
13	**enjambement**	the continuation of a sentence or clause across a line break in poetry
14	**caesura**	a pause that occurs within a line of poetry, usually marked by some form of punctuation
15	**pronoun**	a word that you use to refer to someone or something, in place of a noun
16	**repetition**	when a single word, or a group of words, is repeated
17	**extended metaphor**	a metaphor that unfolds across multiple lines or even paragraphs of a text
18	**symbolism**	when a writer takes an action, object, place, person, animal or word and gives it a more metaphorical meaning

Thematic Vocabulary

1	**Self-Love**	Is the state of appreciation for yourself.
2	**Patriarchy**	A system of society whereby men hold the power and women are largely excluded from it.
3	**Feminism**	The advocacy (see advocate) of women's rights on the basis of gender equality.
4	**Sexism**	Prejudice, stereotyping and discrimination on the basis of sex.
5	**Oppression**	Prolonged cruel or unjust treatment of exercise of authority.
6	**Revolution**	A forcible overthrow of government or social order in favour of a new system
8	**Subservient**	Obeying others unquestioningly
9	**Rebellion**	The action or process of resisting authority, control, or convention.
11	**Unconventional**	Not based on or conforming to what is generally done or believed.
12	**Mother Tongue**	The language which a person has grown up speaking from early childhood.
13	**Language**	The principal method of human communication, consisting of words used in a structured way.
14	**Identity**	The fact of being who or what a person or thing is.
15	**Resilience**	The capacity to withstand or to recover quickly from difficulties; toughness.
16	**Outcast**	A person or group who has been rejected by society or their social group.
17	**Flaws**	An imperfection.
18	**Futility**	Pointlessness or uselessness.
19	**Bereavement**	The condition of losing a close relation or a friend through their death.
20	**Devastated**	A serve or overwhelming shock or grief / to destroy or ruin.
21	**Materialism**	The attitude of someone who attaches a lot of importance to money and wants to possess a lot of material things.
22	**Vivid**	Producing feelings or strong, clear images in the mind.

Conflict: Non-fiction

Thematic Vocabulary – Power and Conflict

19	**refugee**	someone who has been forced to flee his or her home because of war, violence or persecution
20	**refuge**	a place that protects from danger or difficulty
21	**displacement**	to force out of a home territory or particular place
22	**patriotism**	love for your country and loyalty towards it
23	**enlist**	when someone joins the military
24	**commemorate**	to honour or remember a person, event or object through a ceremony, monument, or other means of recognition
25	**remembrance**	if you do something in remembrance of someone who has died, you show you remember them and respect them
26	**colonialism**	a practice by which one country controls people or areas in another country, often by establishing colonies
27	**The British Empire**	a collection of colonies controlled by the United Kingdom from the sixteenth century to the mid-twentieth century
28	**sacrifice**	the act of giving up something of great value to show loyalty or deep affection
29	**loss**	a feeling of sadness when someone or something you like is taken away from you

Academic Vocabulary

30	**perspective**	a way of looking at or thinking about something, especially influenced by your beliefs or experiences
31	**ambiguous**	something that is unclear or it can be understood in more than one way

Creative Writing

When we create a piece of narrative or descriptive writing, we use the panoramic approach. Imagine your writing like a panoramic picture captured by your camera – you want to grab every detail!

The panoramic approach helps you structure descriptive or narrative writing clearly.

- Start wide by setting the **time, place, and mood**.
- **Zoom in** to add closer detail.
- Use a **single striking sentence** to highlight an important image.
- Shift focus to different details or actions (**focus shifts**).
- **Zoom out** again to show the bigger picture.
- Finish with a **changed ending**, showing how the scene or mood has developed.

This method helps your writing feel detailed, organised, and engaging.

Critical Writing

Critical writing helps you clearly explain your ideas about a text; we follow the **What? How? Why**? Structure.

WHAT (Topic sentence) — Identify the big idea using a critical verb. Make a clear point related directly to the question.

HOW (Evidence) — Zoom in on a key word, using a critical verb. Support your point with evidence across the text.

WHY (Intentions) — Link back to the big idea. Explain why the writer chose to present this idea in this way.

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Year 7

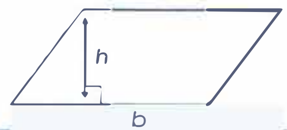
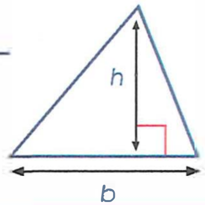
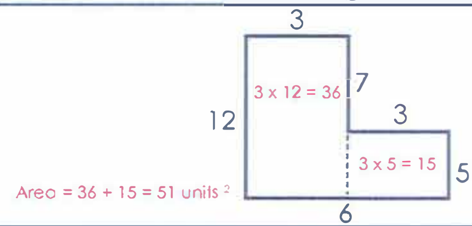
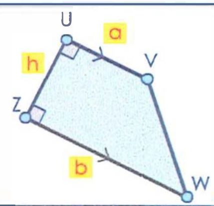
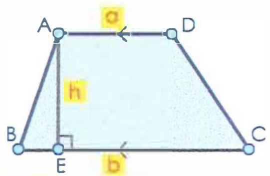
Maths

Heart - Ambition - Respect - Tenacity

KPI 7.09 Multiplication and Division

1) Multiplication lots of, times, product, of	Multiplication is the operation of scaling one number by another. Multiplication is the inverse operation of division. Multiplication is commutative – the order of multiplication does not change the result. E.g. 2 x 3 = 3 x 2. Multiplication is associative – when you multiply you can do so regardless of how the numbers are grouped. E.g. 1 x (2 x 3) = (1 x 2) x 3		
2) Multiplying Integers	29 x 3 2 9 3 x 8 7 2	**3) Multiplying Decimals**	Remove the decimal points Multiply Insert the same number of decimal points in the answer as in the question **0.5 x 0.3** **5 x 3 = 15** **0.5 x 0.3 = 0.15**
4) Division	Division can be thought of as sharing. The number being divided is shared equally into the stated number of parts. Division is the inverse operation of division. Division is the inverse operation of multiplication.	$D \div ■ = ■\overline{)D} = \frac{D}{■}$ E.g. $8 \div 9 = 9\overline{)8} = \frac{8}{9}$	4524 ÷ 3: $3\overline{)4524}$ = 1508 (carries 1, 2) 3 ÷ 8: $8\overline{)3.000}$ = 0.375 (carries 3, 6, 4)
5) Dividend	The number being divided. 15 ÷ 3 → 15 is the dividend.	**6) Divisor**	The number by which another is divided. 15 ÷ 3 → 3 is the divisor.

KPI 7.10 Area

1) Area	A measure of the space inside a 2D shape. Area is measured in square units. E.g. square centimetres (cm^2), square metres (m^2).		
2) Area of a Rectangle	Area = length x width  	**3) Area of Parallelogram**	Area = base x height 
4) Area of Triangle	Area = $\frac{\text{base x height}}{2}$  	**5) Compound Area**	Split into regular shapes Find the area of each Sum the areas 
6) Units of Area	1 cm^2 = 100 mm^2; 1 m^2 = 10,000 cm^2		
7) Area of Trapezium	Sum of the parallel sides. Divide by 2. Multiply by the vertical height.	$A = \left(\frac{a+b}{2}\right) \times h$	 

KPI 7.11-7.14 Fractions

1) Fraction	Part of a whole. The result of dividing one integer by a second (non-zero) integer.	$\frac{3}{4}$ — **Numerator** (3): *How many equal parts do you have?* **Denominator** (4): *How many equal parts is the whole divided into?*	
2) Proper Fraction	The numerator is smaller than the denominator e.g. $\frac{5}{6}$	**3) Improper fraction**	The numerator is greater than or equal to the denominator e.g. $\frac{11}{8}$
4) Mixed number	A whole number combined with a fraction. e.g. $2\frac{1}{3}$	**5) Simplify a fraction**	Divide both the numerator and the denominator of the fraction by their HCF. $\frac{6}{14} \xrightarrow{\div 2} \frac{3}{7}$, i.e. $\frac{6}{14} = \frac{3}{7}$
6) Writing one number as a fraction of another	Write £15 as a fraction of £25. $\frac{15}{25} = \frac{3}{5}$		
7) Equivalent Fractions	Fractions which have the same value. The numerator and the denominator can be multiplied or divided by the same number.	E.g. Fractions equivalent to $\frac{3}{5}$:	$\frac{3}{5} \times \frac{2}{2} = \frac{6}{10}$; $\frac{3}{5} \times \frac{3}{3} = \frac{9}{15}$; $\frac{3}{5} \times \frac{4}{4} = \frac{12}{20}$; $\frac{3}{5} \times \frac{10}{10} = \frac{30}{50}$
8) Convert an integer to a fraction	Whole numbers are an integer with a denominator of 1.	$3 = \frac{3}{1} = \frac{15}{5}$ (× 5 numerator and denominator)	
9) Converting an improper fraction to a mixed number	Divide the numerator by the denominator. Write down the whole number of the answer and the remainder as the numerator of the fraction. The denominator of the mixed number is the same as the denominator of the improper fraction.	$\frac{15}{7} = 2\frac{1}{7}$	
10) Converting a mixed number to an improper fraction	Change the whole number into a fraction (same denominator) and add on the fraction part.	$2\frac{3}{4} = \frac{8}{4} + \frac{3}{4} = \frac{11}{4}$	
11) Add/Subtract Fractions	Make the denominators the same (find the LCM). Use equivalent fractions to change each fraction to the common denominator. Add/subtract the numerators only.	$\frac{2}{7} + \frac{2}{5} = \frac{10}{35} + \frac{14}{35} = \frac{24}{35}$	
12) Order Fractions	Find the lowest common denominator. Write equivalent fractions with the LCD. Order from the smallest to largest numerator. Rewrite original fractions in the new order.	$\frac{2}{3}$, $\frac{5}{6}$, $\frac{4}{5}$ $\frac{20}{30}$ (1), $\frac{25}{30}$ (3), $\frac{24}{30}$ (2) $\frac{2}{3}$, $\frac{4}{5}$, $\frac{5}{6}$	
13) Convert fractions to decimals	Use short division. E.g. to convert $\frac{3}{8}$ to a decimal: $8 \overline{)3.000}$ = 0.375 (carries 3, 6, 4)	**14) Fractions of an amount**	We divide the amount by the denominator and then multiply the result by the numerator. E.g. $\frac{2}{7}$ of 35: $35 \div 7 = 5$, $2 \times 5 = 10$

KPI 7.15 Polygons

1) 3 sides	Triangle	**2) 4 sides**	Quadrilateral
3) 5 sides	Pentagon	**4) 6 sides**	Hexagon
5) 7 sides	Heptagon	**6) 8 sides**	Octagon
7) 9 sides	Nonagon	**8) 10 sides**	Decagon
9) 11 sides	Hendecagon	**10) 12 sides**	Dodecagon

23) Line symmetry

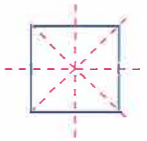
The mirror lines of a shape. If a polygon is regular, the number of sides is equal to the number of lines of symmetry.

24) Rotational symmetry

The number of positions in which the rotated object appears unchanged. The number of positions is called the order of the symmetry. For example, **Order 3** tells us that a shape can be rotated into three positions where the shape appears unchanged.

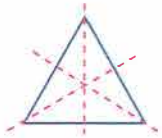
11) Equilateral Triangle	• 3 equal angles • 3 equal sides	**12) Isosceles Triangle**	• 2 equal angles • 2 equal sides
13) Scalene Triangle	• All angles are different • All sides are different	**14) Right-angled Triangle**	• One angle of 90° • Can be isosceles or scalene
15) Square	• 4 right angles • 4 equal sides • 2 pairs of parallel sides	**16) Rectangle**	• 4 right angles • 2 pairs of parallel sides • 2 pairs of equal sides
17) Parallelogram	• 2 pairs of equal sized angles • 2 pairs of parallel sides • 2 pairs of equal sides	**18) Rhombus**	• 4 equal sides • 2 pairs of equal sized angles • 2 pairs of parallel sides
19) Trapezium	• 1 pair of parallel sides	**20) Right-angled Trapezium**	• 2 right angles • 1 pair of parallel sides
21) Isosceles Trapezium	• 1 pair of parallel sides • 2 pairs of equal sides • 2 pairs of equal sized angles	**22) Kite**	• 1 pair of equal sized angles • 2 pairs of equal sides

Four lines of symmetry



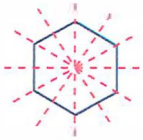
Square

Three lines of symmetry



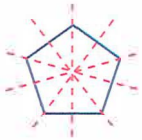
Equilateral Triangle

Six lines of symmetry

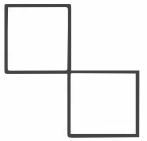


Regular Hexagon

Five lines of symmetry



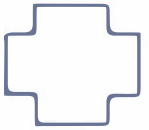
Regular Pentagon



Order 2

No rotational symmetry

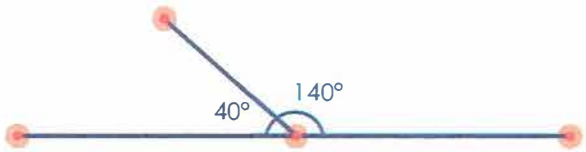
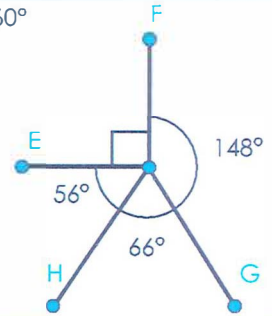
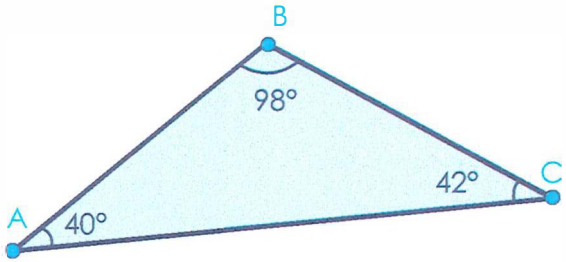
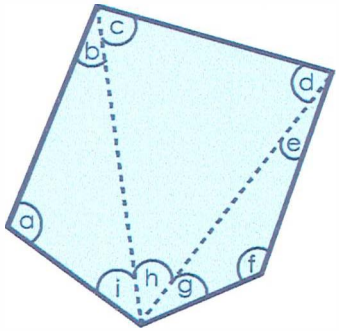
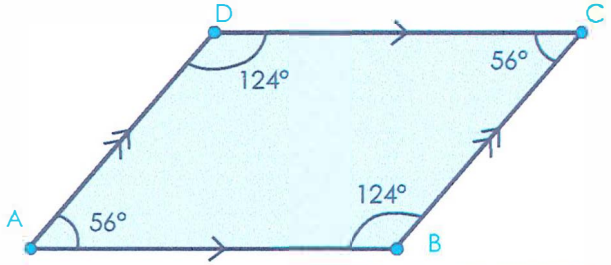
Order 3



Order 4

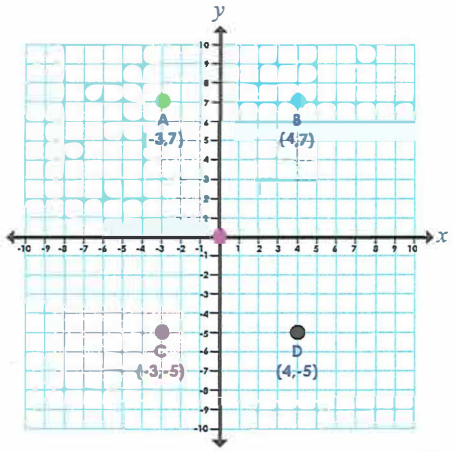
Order 5

KPI 7.16 Angles

1) Angle	An angle is a measure of turn from one line segment to another. One whole turn is equal to 360 degrees.	**2) Degree**	The most common unit of measurement for angles.
3) Acute Angle	Less than 90°	**4) Right Angle**	Exactly 90°
5) Obtuse Angle	Greater than 90° but less than 180°	**6) Reflex Angle**	Greater than 180°
7) Angles on a straight line	Angles on a straight line sum to 180° 	**8) Angles around a point**	Angles around a point sum to 360° 
9) Angles in a triangle	Angles in a triangle sum to 180° 	**11) Angles in any polygon**	Any polygon can be split into several triangles to find the sum of the total interior angles. a + b + i = 180° c + d + h =180° e + f + g =180° So, total sum of interior angles = 540° This information allows us to find a missing angle. 
10) Angles in a quadrilateral	Angles in a quadrilateral sum to 360° 		

KPI 7.17 Co ordinates

1) Coordinates	Written in pairs and inside a bracket. The first number is the x coordinate (horizontal position). The second number is the y coordinate (vertical position).
2) Origin	The coordinate (0,0) is where the x axis and y axis intersect.
3) Axis Plural-Axes	x axis is horizontal ($y = 0$). y axis is vertical ($x = 0$).
4) Vertical lines	Always in the form $x = a$.
5) Horizontal lines	Always in the form $y = a$.



Point A is in the SECOND quadrant

Point B is in the FIRST quadrant

Point C is in the THIRD quadrant

Point D is in the FOURTH quadrant

The coordinate (0,0) is also known as the ORIGIN

6) Midpoint of two coordinates

1. Add the x coordinates, divide by 2.
2. Add the y coordinates, divide by 2.
3. Write as a coordinate (x, y).

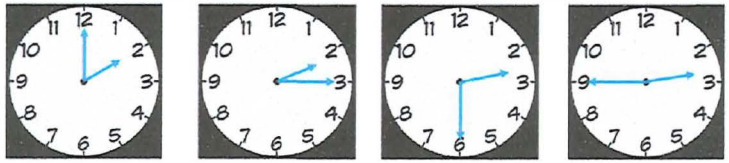
E.g. The midpoint of (2, 2) and (8, 4) = (5, 3)

midpoint of x coordinates: $\frac{2+8}{2} = \frac{10}{2} = 5$

midpoint of y coordinates: $\frac{2+4}{2} = \frac{6}{2} = 3$

KPI 7.18 Time

1) Analogue



2 o'clock | Quarter past 2 | Half past 2 | Quarter to 3

2) Digital

Times will appear differently on digital clocks depending on whether they are in 12-hour clock or 24-hour clock mode.

2:00 am → 02:00	2:15 am → 02:15	2:30 am → 02:30	2:45 am → 02:45
2:00 pm → 14:00	2:15 pm → 14:15	2:30 pm → 14:30	2:45 pm → 14:45

3) Days	There are 24 hours in one day.	**4) Hours**	1 hour = 60 minutes	**5) Minutes**	1 minute = 60 seconds

Hartshill Academy
The best in everyone™
Part of United Learning

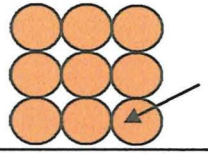
Year 7

Science

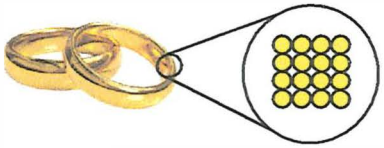
Heart - Ambition - Respect - Tenacity

Chemical changes

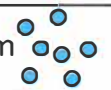
Atom
The smallest particle of matter, which all things are made of.



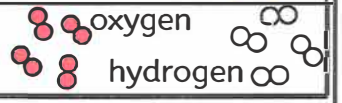
Element
A pure substance that is made of only one type of atom. All atoms of an element are identical, e.g. Gold is an element made up of gold atoms only. The 118 known elements are listed on the periodic table of elements.



The atoms of some elements do not join together, but instead they stay as separate atoms, e.g. helium.



The atoms of other elements join together to make molecules, e.g. oxygen and hydrogen.



Properties of elements

Individual atoms do not have the properties of the element. The properties of an element are because of the arrangement and behaviour of the atoms as a group.

Metals	Non-metals
most are shiny	most are dull
most are hard	solid non-metals are soft and easy to cut, except carbon as diamond
most are strong	most are not strong
most are sonorous (makes a ringing sound when hit)	most are not sonorous
malleable (easy to reshape without breaking)	not malleable
most are ductile (can be drawn out into a long wire without breaking)	not ductile
most have very high melting and boiling points	most have very low melting and boiling points
some but not all are magnetic	not magnetic
conduct electricity	non-metals do not conduct electricity, except carbon as graphite
good at conducting heat	poor at conducting heat

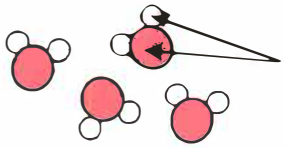
Writing element symbols

The first letter is always written as a capital letter and if there is a second letter, it is always written as a lowercase letter. Element symbols make writing elements easier and allow scientists all over the world to communicate and write about them.

Na	O
sodium	oxygen

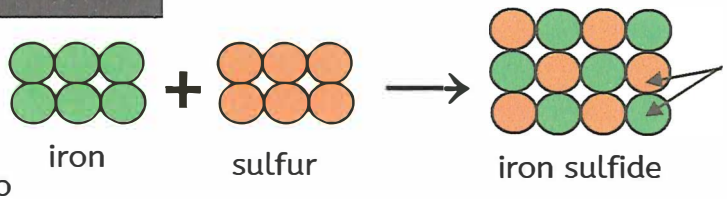
Chemical changes

Compound
A substance made of two or more different elements chemically joined (bonded) together.
A chemical bond is a strong force that holds atoms together in a compound. Lots of energy is needed to break a chemical bond. A compound cannot be easily separated.
A compound may have very different properties to those of the elements from which it is made.
Water is a compound of hydrogen and oxygen.
Each of its molecules contains two hydrogen atoms and one oxygen atom.



Chemical reactions

When chemicals react, the atoms are rearranged.
For example, iron reacts with sulfur to make iron sulfide. Iron sulfide, the compound formed in this reaction, has different properties to the elements it is made from.



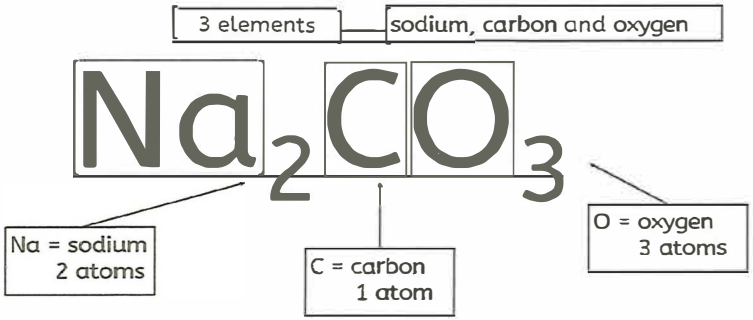
	iron	sulfur	iron sulfide
Type of substance	element	element	compound
Colour	silvery grey	yellow	black
Is it attracted to a magnet?	yes	no	no

Conservation of mass

Atoms are not destroyed nor created during chemical reactions, so in any reaction:
Total mass of reactants = total mass of products

Chemical formulae

A chemical formula uses chemical symbols and numbers to show how many of each atom is present in a compound.
The small numbers (subscript) go at the bottom.
For example:
CO_2 is correct;
CO2 and CO^2 are wrong.



The formula for sodium carbonate is Na_2CO_3. It tells you that sodium carbonate contains two sodium atoms (Na x 2), one carbon atom (C) and three oxygen atoms (O x 3).

Naming metal and non-metal compounds

The metal element (furthest left on the periodic table) comes first in the name of the compound. The ending for the non-metal is shortened and changed to '–ide'. E.g. iron + sulfur → iron sulfide

Naming three element compounds containing oxygen

The metal element (furthest left on the periodic table) comes first in the name of the compound. If there are three elements in the compound, and one of them is oxygen, the ending of the non-metal is shortened and changed to '–ate'. E.g. lithium + nitrogen + oxygen → lithium nitrate

Chemical changes

Chemical equations

We summarise chemical reactions using equations:

reactants → products

- Reactants are shown on the left of the arrow;
- Products are shown on the right of the arrow.

Do not write an '=' sign instead of an arrow.

If there is more than one reactant or product, they are separated by a '+' sign. For example:

copper + oxygen → copper oxide

Reactants: copper and oxygen
Products: copper oxide

A word equation shows the names of each substance involved in a reaction and must not include any chemical symbols or formulae.

Oxidation reactions

In oxidation reactions, a substance gains oxygen. Metals and non-metals can take part in oxidation reactions (be oxidised).

Magnesium reacts with oxygen to form magnesium oxide:
magnesium + oxygen → magnesium oxide
$2Mg(s) + O_2(g) \rightarrow 2MgO(s)$

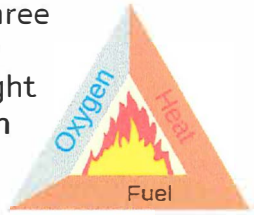
Carbon reacts with oxygen to form carbon dioxide:
carbon + oxygen → carbon dioxide
$C(s) + O_2(g) \rightarrow CO_2(g)$

Another example is a combustion reaction, where we burn fuels in oxygen:

Fuel + oxygen → carbon dioxide + water

methane + oxygen → water + carbon dioxide

- Combustion is another name for burning fuels.
- It is an exothermic reaction.
- The fire triangle shows three components which, when combined, provide the right conditions for combustion to happen.



Thermal decomposition reactions

This is the breaking down of a substance, using heat, to form two or more products. It is an endothermic reaction.
Many metal carbonates take part in thermal decomposition reactions. For example, copper carbonate:

copper carbonate is green; copper oxide is black.
copper carbonate → copper oxide + carbon dioxide
$CuCO3(s) \rightarrow CuO(s) + CO_2(g)$

Exothermic and Endothermic reactions

- Exothermic reaction - transfers energy to the thermal store of the surroundings. This causes a rise in temperature (positive temperature change).
- Hand warmers transfer energy to the thermal store of the surroundings by an exothermic oxidation reaction.
- Endothermic reaction – transfers energy in from the thermal store of the surroundings. This causes a drop in temperature (negative temperature change).
- Sports injury packs transfer energy from the thermal store of the surroundings by an endothermic reaction.

Temperature data collected from exothermic and endothermic reactions can be improved by:

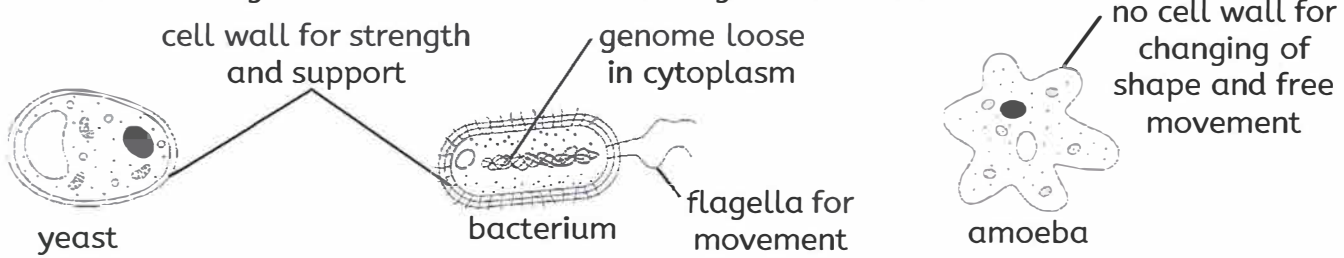
- Using a **polystyrene** cup as an insulator, as it reduces energy transfers to or from the surroundings.
- Using a lid to reduce energy transferred from the surface.
- Using a digital thermometer, which is easier to read than a regular thermometer and, if it measures in decimal places, also has better resolution.

State symbols in chemical formulae provide information about the physical state of the reactants and products.
(s) – solid , (l) – liquid, (g) – gas, and (aq) – aqueous solution (i.e. dissolved in water).
The state symbol comes after the chemical formula and is written in lower case and in brackets. E.g. $CuCO_3(s) \rightarrow CuO(s) + CO_2(g)$

Organ systems

Unicellular organisms are made of only one cell (e.g. bacteria, amoeba and yeast).

- They can carry out the 7 life processes of living organisms, all in one cell.
- Unicellular organisms share common organelles, but they also have adaptations.
- Unicellular organisms can be helpful or harmful.
- Unicellular organisms use diffusion to exchange substances.



- Used in baking
- Used to make alcoholic drinks

- Supports digestion
- Used to make cheese and yoghurt

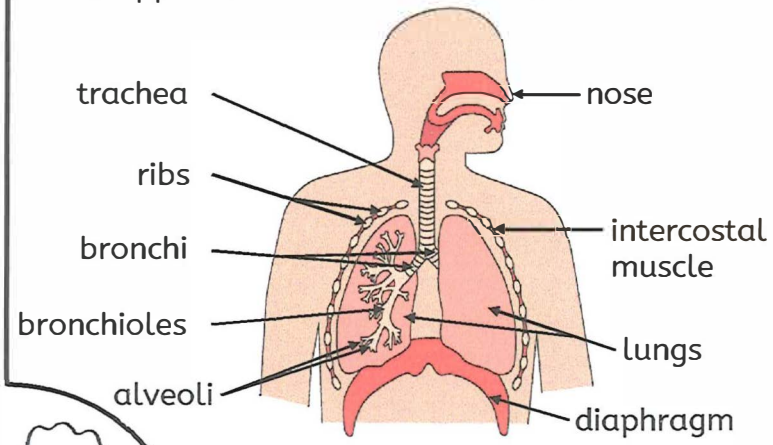
Multicellular organisms are made of many cells (e.g. plants and humans).

- They are larger and more complex than unicellular organisms.
- They cannot rely on diffusion alone for exchanging substances.
- Multicellular organisms depend on tissues, organs, and organ systems working together to exchange and transport substances to cells of the body, to keep cells alive.
- Organ systems in humans include the gas exchange system, digestive system, circulatory system, skeletal system and muscular system.

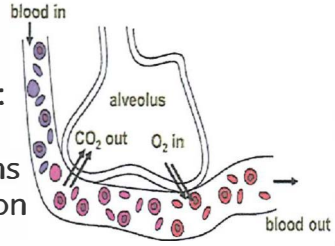
Gas exchange system

Air is a mixture of gases, including oxygen and carbon dioxide.

The human gas exchange system allows for the exchange of oxygen and carbon dioxide between an organism and its environment. Inhaled air contains more oxygen than exhaled air. Exhaled air contains more carbon dioxide than inhaled air. Oxygen moves from the alveoli into cells and then into the blood vessels (capillaries), while carbon dioxide moves in the opposite direction via diffusion.



Alveoli are adapted for efficient diffusion:



- **good blood** supply maintains the concentration difference
- large surface area for faster rate of diffusion
- **thin walls** (one cell thick) to provide a shorter diffusion pathway

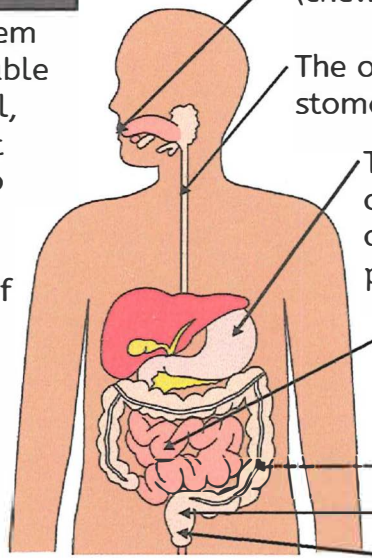
Breathing involves changes in pressure and volume inside the chest, helped by the movement of intercostal muscles and diaphragm, which causes the movement of the ribcage.
Vital capacity is the maximum volume of air exhaled after inhaling fully and can be used to estimate lung volume.

	Inhalation	Exhalation
Intercostal muscles	contract	relax
Ribcage	pulled up and out	released down and in
Diaphragm	contracts and moves downwards	relaxes and moves upwards
Volume in the chest	increases	decreases
Pressure in the chest	decreases	increases
Movement of air	into the lungs	out of the lungs

Organ systems

Digestive system

- The human digestive system breaks down large, insoluble food molecules into small, soluble molecules so that they can be absorbed into the blood.
- **M**echanical digestion: the physical breakdown of food into smaller pieces.
- Chemical digestion: the use of chemical substances to break food down into smaller molecules.



The mouth performs both mechanical digestion (chewing) and chemical digestion (saliva).

The oesophagus connects the mouth to the stomach and uses peristalsis to push food down.

The stomach performs both mechanical digestion (muscular tissue contracts) and chemical digestion (glandular tissue producing chemical substances).

The small intestine breaks down food chemically. Absorption of digested nutrients also happens here.

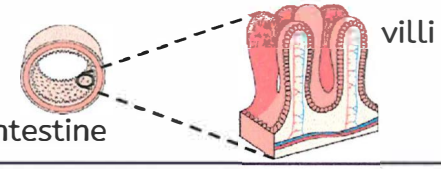
The large intestine reabsorbs water from undigested food back into the blood.

Faeces (poo) are stored in the rectum.

Faeces and waste gases are egested from the anus.

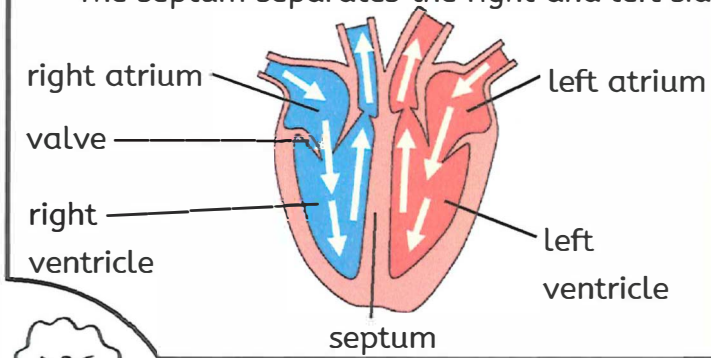
Adaptations:
The small intestine is covered in many villi for efficient absorption by diffusion:

- villi provide a large surface area for faster rate of diffusion
- villi have good blood supply to maintain the concentration difference
- villi have thin walls (one cell thick) to provide a shorter diffusion pathway



Circulatory system

- The circulatory system transports useful molecules and waste around the body. The human circulatory system consists of the heart, blood and blood vessels.
- The heart has four chambers: two atria and two ventricles.
- Valves ensure blood flows in the right direction.
- The septum separates the right and left sides of the heart.



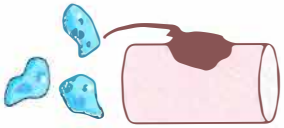
The heart pumps oxygenated blood from the lungs to the body and deoxygenated blood from the body to the lungs (double circulatory system).

Arteries	Capillaries	Veins
• Blood taken away from heart • High pressure blood • Thick muscular and elastic walls • Small lumen	• Exchange substances between blood and cells • Very low pressure blood • Very thin walls (one cell thick) • Very small lumen	• Blood brought back to heart • Low pressure blood • Thin walls • Large lumen • Valves prevent back flow

Organ systems

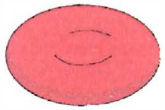
Circulatory system (continued)

Blood is a fluid that transports substances, useful molecules and waste around the body. Blood helps the body to defend against diseases and to form scabs to heal cuts.



Platelets help with blood clotting for wound healing.

Plasma carries the other blood parts, nutrients, waste and carbon dioxide. It is yellow coloured and mostly water.



Red blood cells carry oxygen to all the cells of the body.

White blood cells help defend against disease.

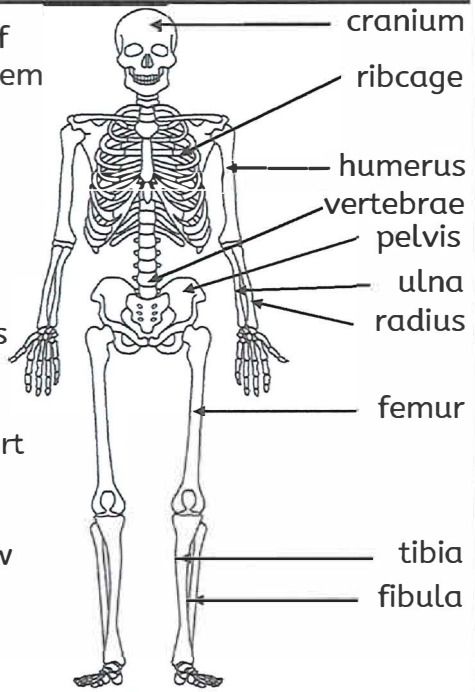
Adaptations of the red blood cells:

- biconcave shape →large surface area for faster oxygen diffusion
- contains haemoglobin → carry oxygen
- no nucleus → space for more haemoglobin → more oxygen

Red blood cells, white blood cells and platelets are made in the bone **marrow** - soft tissue inside large bones protected by the hard part of the bone around it.

Skeletal system

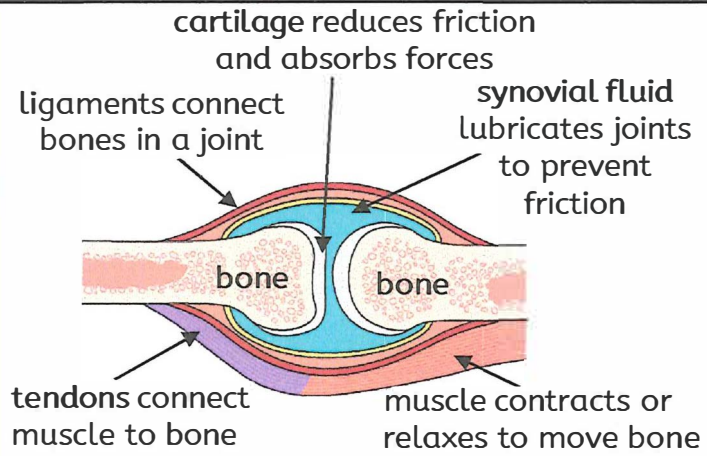
Four functions of the skeletal system are support, **movement**, **making new** blood cells and protection of organs (e.g. the cranium protects the brain and the ribcage protects the heart and lungs). **Bones** are living tissues that grow and change.



Joints, muscles and movement

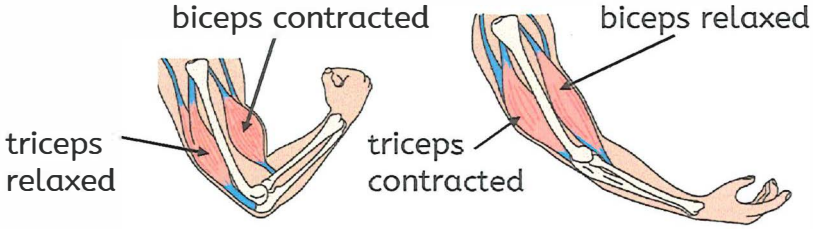
A joint is the point where two or more bones meet in the body. Joints connect bones and allow the body to move and bend. Different joint types allow various movements:

- hinge joint: movement backwards and forwards e.g. the knees and elbows
- ball-and-socket joint: movement in many directions e.g. the hips and shoulders
- pivot joint: twisting movement around a fixed point e.g. the neck
- fixed joint: does not allow for any movement e.g. in the cranium



Ageing can lead to joint wear, inflammation and arthritis. Arthritis causes joint pain and affects synovial fluid and cartilage.

- Muscles can **only** pull, they **cannot push**;
- Muscles work in **antagonistic muscle** pairs. When one muscle contracts to pull the bone in one direction, the other muscle relaxes to allow movement.



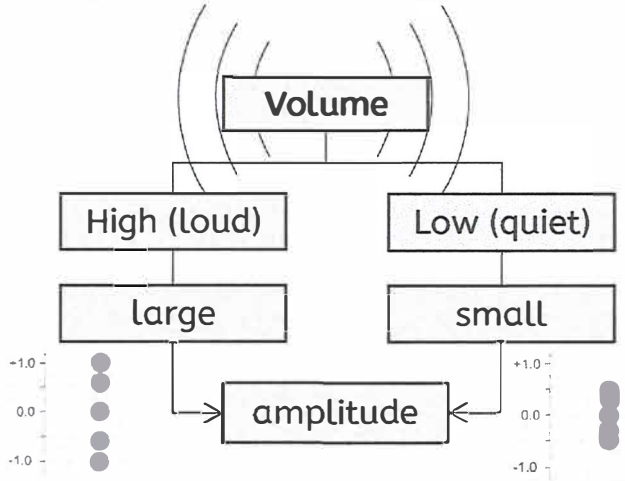
- The way in which muscles and bones work together to exert forces is called biomechanics.
- **Muscle strength** varies based on muscle size, age, sex, training, nutrition and injury.

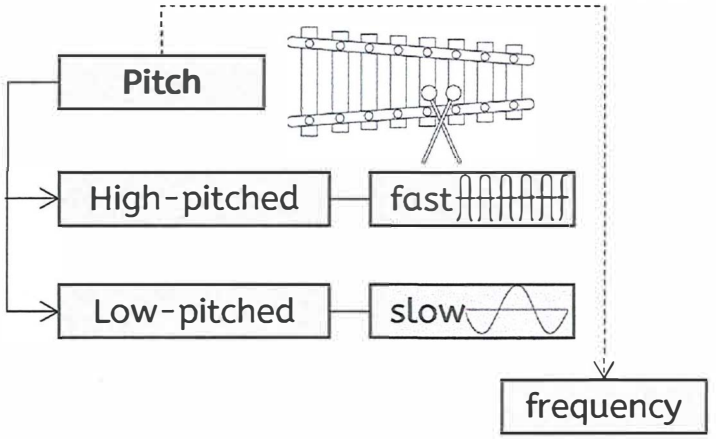
Sound and light

Describing sound

Sources of sound

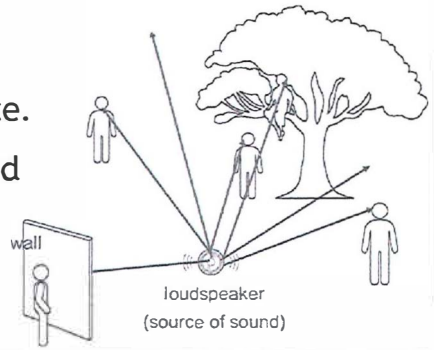
		
No sound	**Force** exerted	**Vibrating** matter





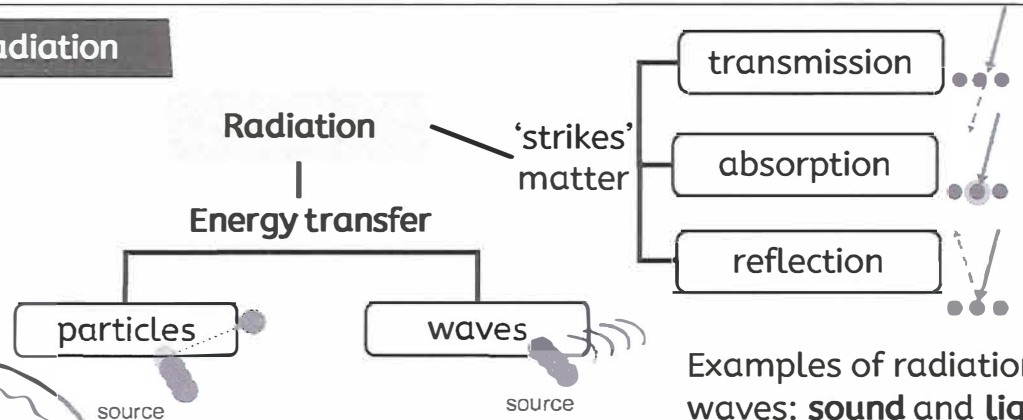
Vibrations travel through matter

- Travel in **all directions** from a source.
- Can be observed by **detectors** placed at a distance.
- If blocked, a **shadow region** occurs.
- Fastest in solids, slowest in gases.



- Gas ✓
- Liquid ✓
- Solid ✓
- Vacuum ✗

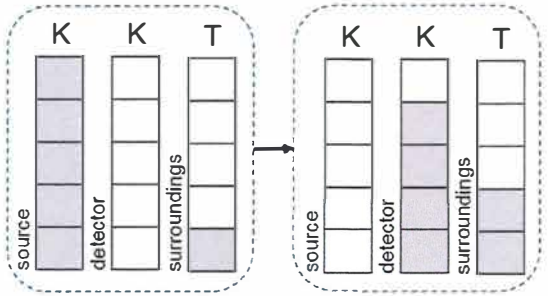
Radiation



Examples of radiation by waves: **sound** and **light**.

Energy transfer

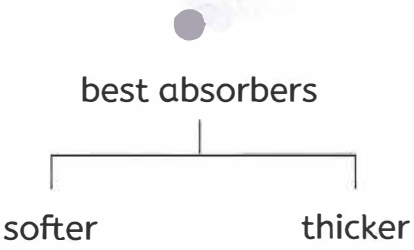
- As vibrations travel, the energy store of the source decreases.
- The energy store of the matter increases.
- The kinetic store of any detector increases.
- By the **mechanical** pathway.



- The thermal store of the surroundings also increases.

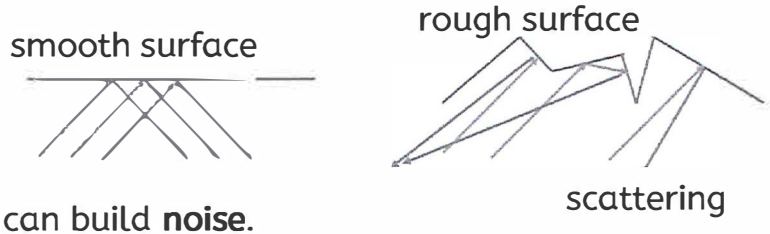
Sound and light

Vibrations get less with distance



- Energy **spreads out** among more particles.
- Each **particle absorbs** some energy, not passing it all on.
- If **all energy** is absorbed, a shadow region occurs.

Reflections

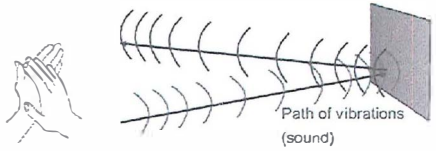


Surfaces

- Smooth surfaces can build **noise**.
- Rough surfaces scatter sound so that it spreads out and quietens.
- Noise can be made worse by many reflections interacting, and better by using rough surfaces.

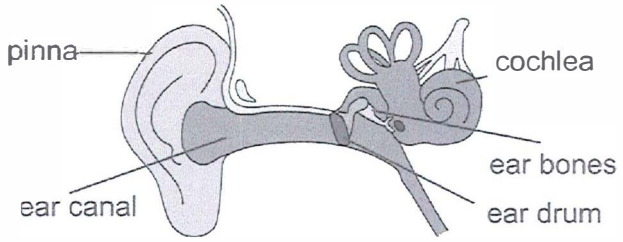
Echoes

- A reflected sound is an echo.
- Some animals use echoes.



Hearing

The ear



Sound in the ear

- The function:
  - **transfer energy** to the nervous system, as much as possible
  - from the vibrations in the air
  - to the inner ear,
  - so that the brain can perceive and interpret it.
- Energy transfer from the tiny hairs in the cochlea to the nerves is by the **electrical** pathway.

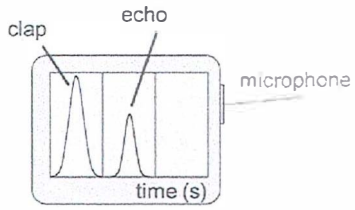
Differences in hearing

- The **audible range** of human hearing is from about 20 Hz to 20 000 Hz.
- Above this is **ultrasound** and below this is **infrasound**.
- Different animals have different ranges of hearing.
- Exposure to loud sounds and ageing can contribute to hearing differences, e.g. deafness.

Sound and light

Using technology to improve data quality

Measuring short times

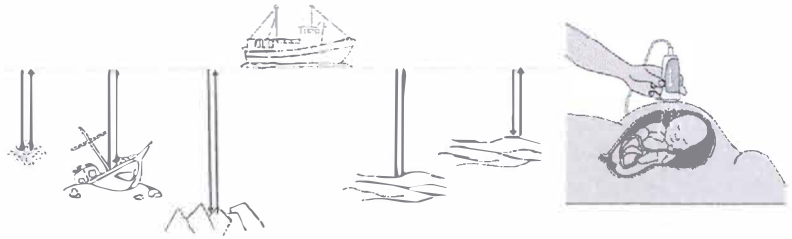


- **Digital** clock reduces systematic error (no scale).
- **Datalogging** equipment:
  - reduces difficulty observing quiet sounds e.g. echoes
  - reduces difficulty judging when sound arrives (measures directly)
  - reduces reflex action delays
  - allows 'zoom in' on time scale.

Using scientific knowledge

Echolocation

- Finding an object



Acoustic imaging

- Deep in the sea
- Inside living organisms (foetal scan)
- Inside solid objects

We have more information, of better quality, with much less risk.

Hearing technology examples

- Hearing aids
- Hearing implants
- Hearing loops

Reduce the chance of hearing damage by wearing ear protection and reducing volume of sounds.

Observing by measurement

Quantities: and their units

Base quantities: length (m), mass (kg), time (s), temperature (K).

Derived quantities include force (N), **frequency (Hz)**, **loudness (dB)**.

Measuring instruments

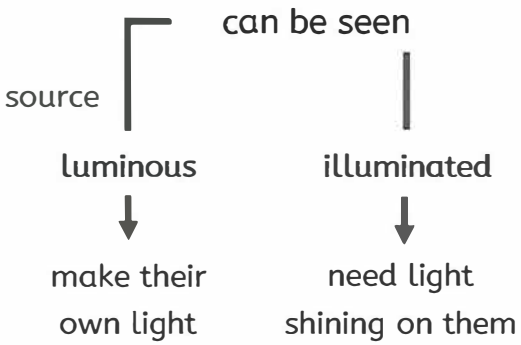
- Include rulers, balances, clocks and thermometers.
- Measuring tapes are used to measure distances longer than a few metres.

Unit prefixes

- Standard prefixes change a number by multiples of 1 000, e.g. one *kilo*metre is equal to 1 000 metres.
- The prefix ***milli***- uses a multiple of 0.001, it means one thousandth:
  - one **millisecond** is one thousandth of a second (1 ms is easier to use than 0.001 s).
- A non-standard but common prefix is ***centi***-, to mean one hundredth.
  - one centimetre is one hundredth of one metre (1 cm is easier to use than 0.001 m).

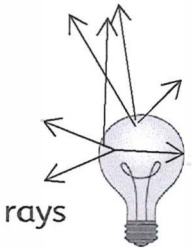
Sound and Light

Describing light



- Light cannot be seen directly as it travels.

Light travels



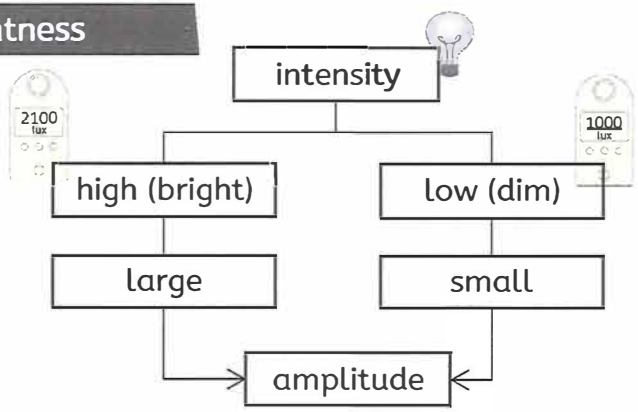
- away from source
- from every point
- in all directions
- very fast

Light is constantly emitted from a source that is 'on'.

Light fills an enclosed space.

Darkness is the absence of light.

Brightness

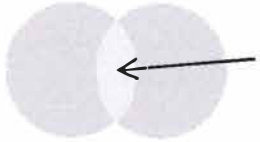


- Some sources transmit more energy away in a given time.

- Light spreads out from a source.
- Brightness decreases with distance.

Light meter measures brightness in lux.

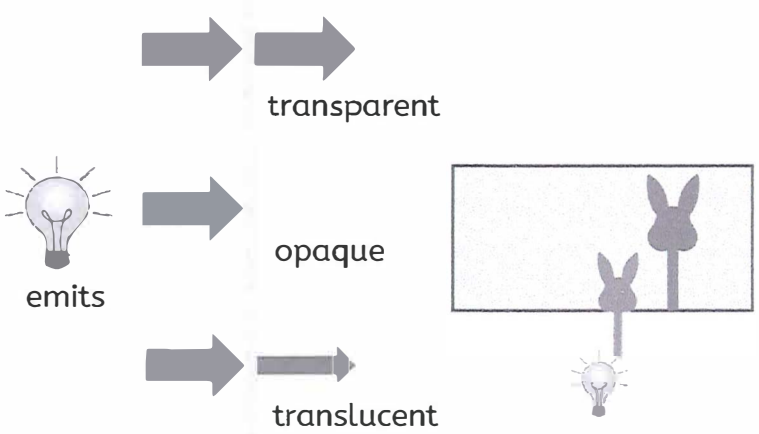
- Light from multiple sources falling on a screen is brighter than one.



brighter region of light

Different media

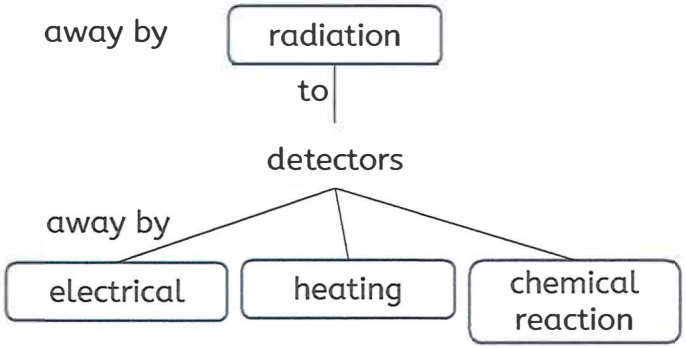
- Light is transmitted through any transparent media, including a vacuum.



- All materials absorb some energy from light.
- Opaque objects transmit nothing (forming shadows).

Energy pathways

- From a source, light travels ...



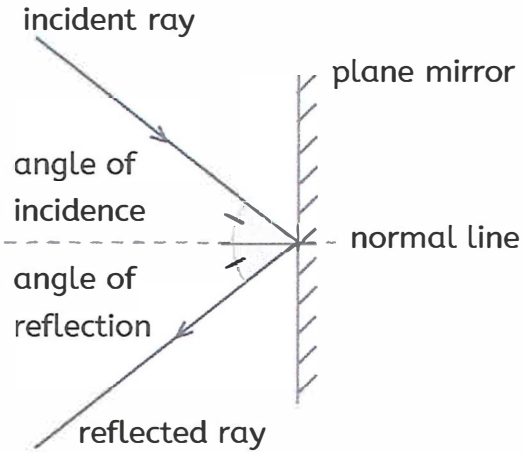
Light is the transfer of energy by the radiation pathway to its surroundings, so that a region is lit up.

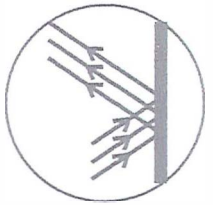
Sound and Light

Light reflecting

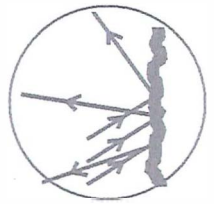
- All surfaces reflect light and obey the law of reflection.

the angle of incidence = the angle of reflection





specular reflection

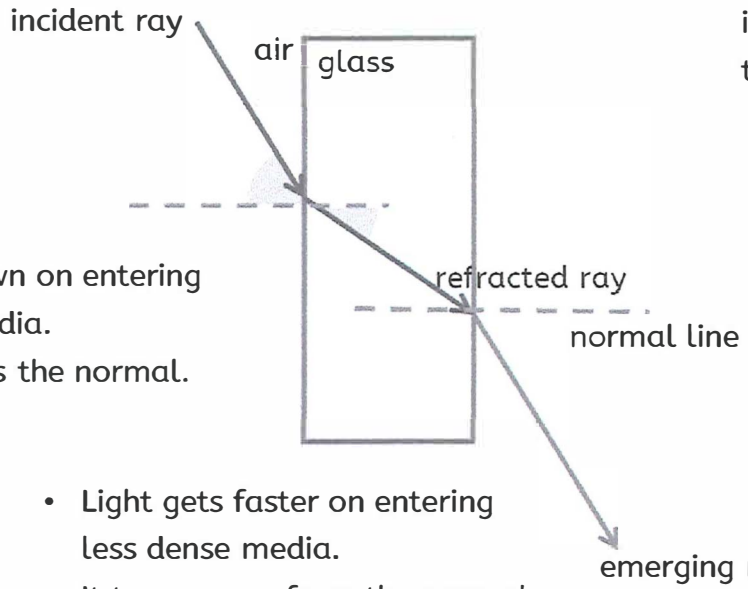


diffuse reflection

- Most surfaces reflect light diffusely (scatter it).

Light refracting

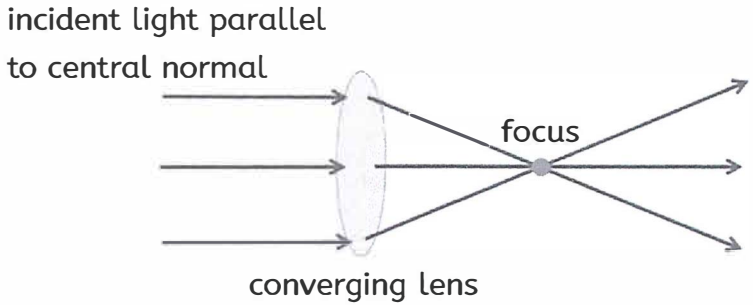
As the angle of incidence increases, there is more refraction.



- Light slows down on entering more dense media.
- It turns towards the normal.
- Light gets faster on entering less dense media.
- It turns away from the normal.

Lenses

Converging lenses form a focus and can form a clear image.

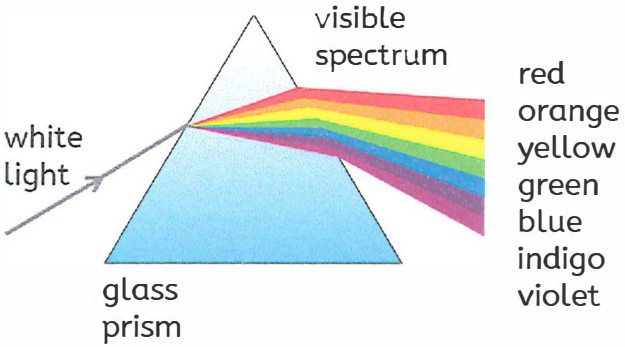


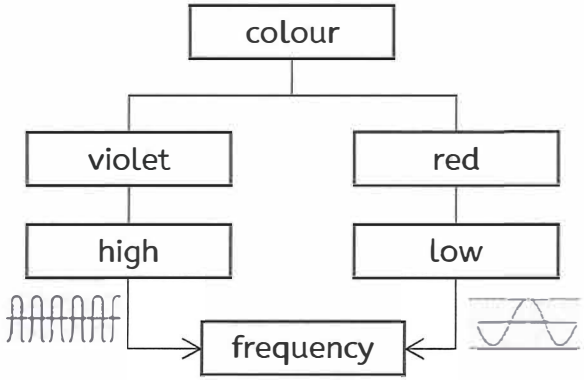
- The focal length is the distance from lens to focus, or lens to image.
- Thicker lenses (more curved) refract more, have a closer focus and longer focal length.

Sound and Light

Coloured light

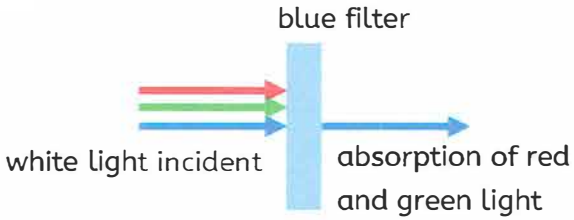
- Luminous objects emit light of particular colours.
- Most common sources emit white light.





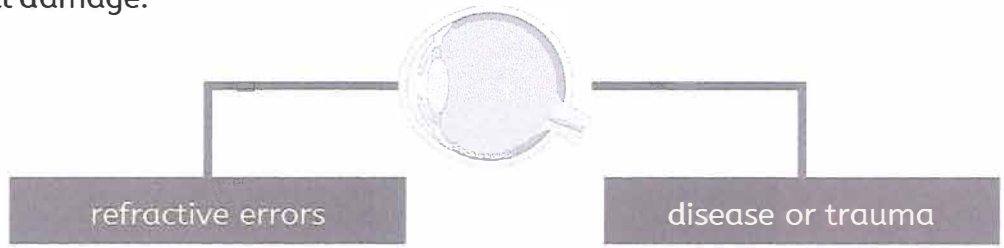
Coloured filters:

- transparent objects
- transmit own colour
- selectively absorb any other colour of incident light



Seeing differences

Many problems with our vision are caused by parts of the eye that are not the right shape or size, that have become cloudy, or due to cell damage.



not preventable but treatable

may be preventable and treatable

People with low vision may use:

Long canes, guide dogs, talking books, Braille or other assisted devices.

Light from the Sun can be dangerous:

- Never look directly at the Sun.
- Wear sunglasses in bright sunlight.
- Protect the skin too.

Sound and Light

Images

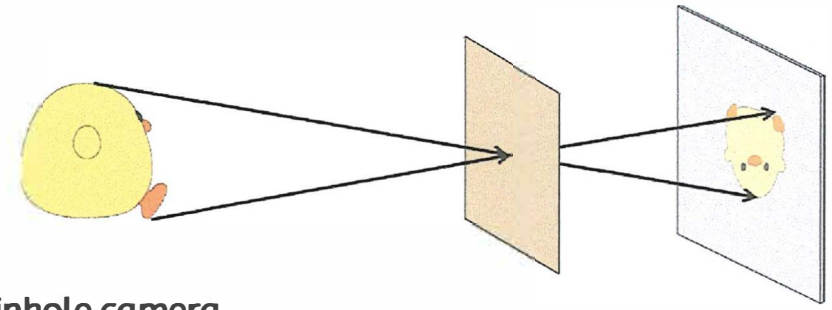


Image is:

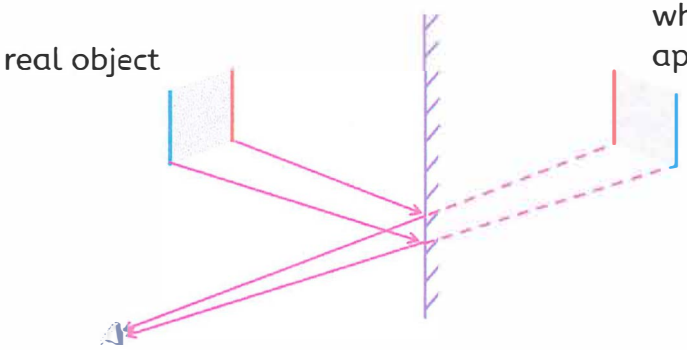
- inverted
- dim
- diminished.

Pinhole camera

- Some light from each point of the object passes through the pinhole.
- The pinhole only allows a narrow beam through from each point.
- Light from each point crosses over as it passes through the pinhole.
- Light from every point falls on the screen forming a complete image.

Mirror image

- Light from every point of the real object reflects into the eye.
- The brain interprets reflected light as originating from behind the mirror.



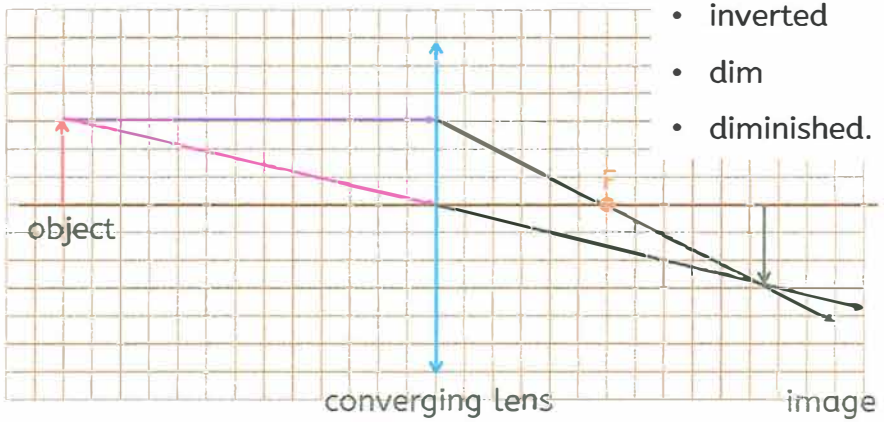
- right way up
- same size
- same distance

Images from lenses

- Some light from each point refracts through the lens.
- Light from each point arrives at specific points on the surface forming an image.

Image is:

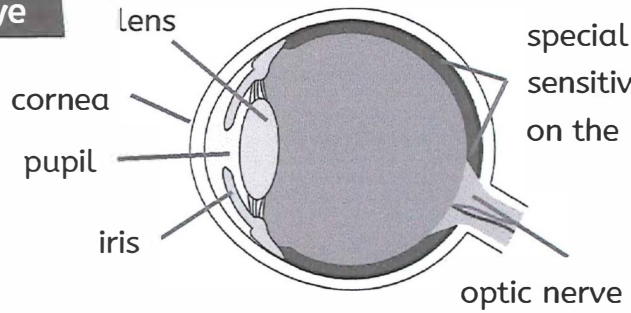
- inverted
- dim
- diminished.



- A partially covered lens still forms an image, but dimmer.

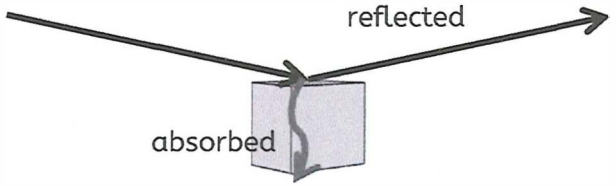
Sound and Light

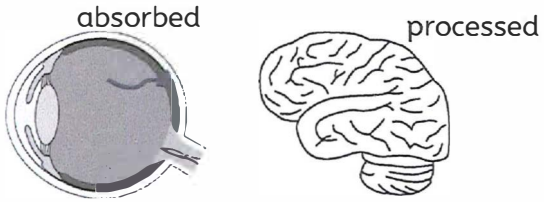
The human eye



cornea	refracts light before it enters the eye
iris	controls the size of the pupil
pupil	lets light enter the eye
lens	refracts light to form an image
retina	made up of cells that detect light
optic nerve	carries electrical signals to the brain

Seeing objects

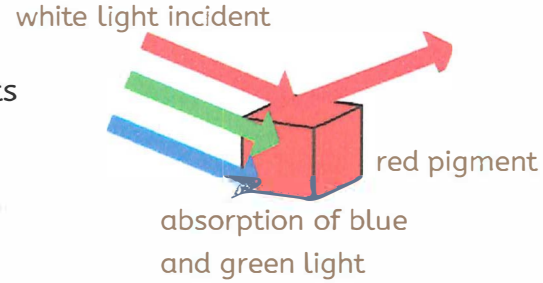




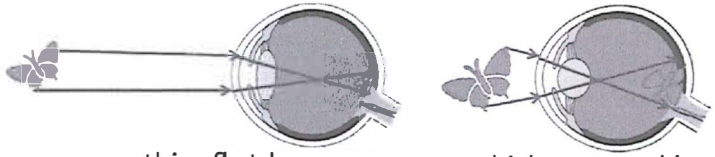
incident light → object → reflected light → eye → brain

Seeing coloured objects

- If an opaque object is coloured, it has pigments which absorb specific colours.
- absorbs any colour not in the pigment
- appears the colour of any scattered light



Seeing at different distances



- The lens shape changes as needed.

Refraction errors of the eye

short-sightedness

- eye too long or the cornea too extended: focus in front of retina

Glasses to spread out the light before it enters the eye.

long-sightedness

- eye too short or the cornea too rounded: focus behind the retina

Glasses to converge the light before it enters the eye.

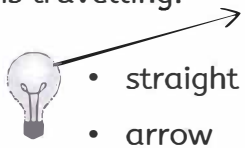
Sound and Light

Scientific models

Representations of reality that can be used to explain observations

The ray model of light

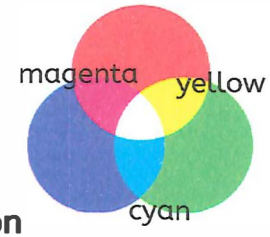
- Rays are imaginary lines, drawn to represent the path light is travelling.
- From an infinite number, a few are chosen to be drawn.



- straight
- arrow

The 'passive-eye' model of vision

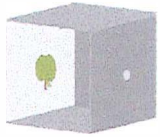
- Objects emit or reflect light into the eye.



The 'three primary colours' model of human colour vision

- The eye has three types of sensor cell.
- It detects red, green and blue - the primary colours of light.
- When directed at a white screen, combinations of primary colours can appear as secondary colours or white (and more).

The pinhole camera as a model for the eye

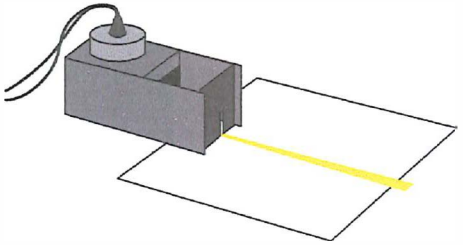


- Light enters through the pinhole similar to the pupil.
- Light 'crosses over' at the pinhole, similar to the lens.
- Light from the object falls on the screen, similar to the back of the eye.

Observing light

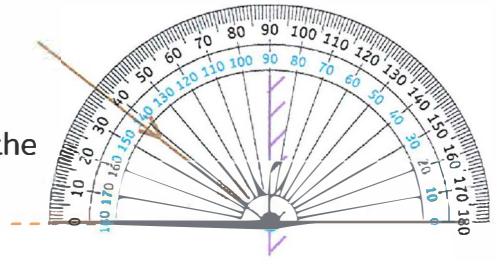
Using a raybox

- The raybox and comb are connected to a power supply.
- Draw crosses (avoiding likely measurement errors).
- Plot and label rays.



Measuring angles

- Place the centre at the vertex.
- The scale starts at 0° on the normal line.
- Read up from 0°.



Trusted scientific research

High-quality data

- Well-chosen method
- Appropriate resolution
- Multiple measurements
- Repeatable
- Reproducible
- Appropriate range
- Systematic intervals

Trustworthy conclusions

Process and display collected data

Describe data from table or chart

Explain interpreted data

Materials

Everything around us is made of materials. The material is what an object is made of, for example a cup can be made of glass, plastic or paper. Materials can be natural (found in nature), or synthetic (made by humans).The material that we choose to make an object from depends on its purpose. Understanding materials helps us select the right one for different uses, with the use depending on the property of the material.

glass cup

plastic cup

paper cup

Ceramics

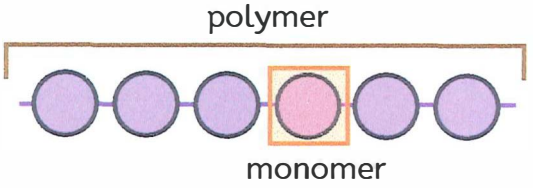
A ceramic is a non-metallic material that is formed by heating and cooling a soft substance, which transforms it into a hard material.

Clay ceramics are made by shaping wet clay while it's soft and then heating it to a high temperature and allowing it to cool, which causes it to harden.

Property	Examples of uses
hard	vases, statues and many other objects
strong when compressed	bricks used for building structures
good electrical insulators	outdoor electrical power-line insulators
non-reactive with water	mugs and dishes
resistant to chemicals	kitchen and bathroom tiles
high melting points	oven baking dishes, jet engine turbine blades
Ceramics are brittle, so they cannot be bent, and they shatter or break when hit, dropped, or if too much force is applied.	

Polymers

A polymer is a long chain molecule made of repeating units called monomers.



Polymerisation is the joining of monomers to form polymers.

Natural polymers occur naturally and are found in plants and animals e.g. cellulose in plant cell walls, starch in potatoes, wool from sheep, chitin that forms exoskeletons.

Synthetic polymers are manufactured using chemicals taken from crude oil e.g. polyester and nylon used in clothing, PVC used to make rain gutters, polyethene used for plastic bags.

An increased population increases demand for resources and raw materials. Raw materials, which are natural resources that are used to make other things, are running out e.g. crude oil used to manufacture synthetic polymers. Competition for and the reduction of raw materials like crude oil has ethical, social, economic and political consequences.

Polymers have common properties, like being in the solid state at room temperature.

Property	Examples of uses
good electrical insulators	casing around electrical wires
chemically unreactive	food containers
durable	shopping bags
mouldable	Plastic bottles

Materials

Polymers (continued)

Polymers can have very different properties.

- Polymers can have different properties when they are made of different monomers. This is because different monomers have different properties.
- Polymers can also have different properties when they have different length chains lengths. Longer polymer chains have higher melting points and are stronger.

Plastics and polymers can cause environmental and health problems:

- Many polymers take hundreds of years to degrade, accumulating in landfills and oceans.
- Improper disposal and littering of polymer products cause widespread pollution.
- Polymer chemicals may disrupt reproduction in organisms.

Global efforts like the plastic bag charge are being taken to address polymer-related environmental issues.
Polymers can be reused, recycled, incinerated, or sent to landfill. Each method has advantages and disadvantages, e.g. landfill takes up space and releases harmful gases.

Composite materials

A composite material is a material that is made from two or more different types of material.

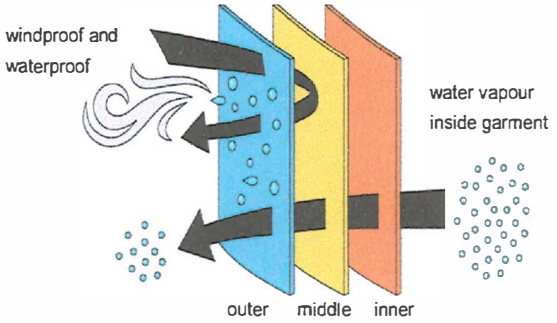
- The materials for a composite material are chosen because they have different properties that combine to make a more useful material with improved properties.
- Each material in a composite keeps its original properties, and the properties of those materials complement one another.

Composite materials (continued)

The properties of composites make them suitable for specific applications e.g. breathable fabric used for outdoor activities.

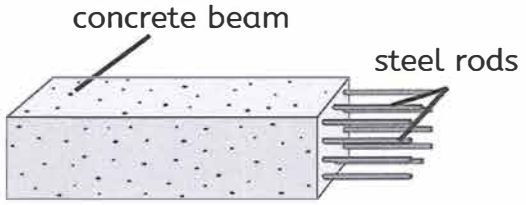
The exact properties and behaviour of a composite material will depend on:

- choice of materials
- the amounts used of each material
- the way each material is structured within the new composite material.



Reinforced concrete is a composite material because it is made from concrete and steel, which are two different materials.

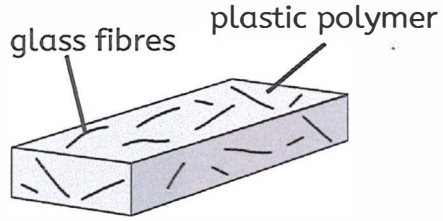
Reinforced concrete is strong in compression and tension. It is used for construction and for building.



material	property
concrete	strong in compression
steel	strong in tension

Fibreglass is a composite material because it is made from glass fibres and a plastic polymer, which are two different materials.

Fibreglass is strong in tension, lightweight and stiff. It is used for making kayaks and car body panels.



material	property
glass fibres	strong in tension and lightweight
plastic polymer	weak in tension and stiff

Materials

Scientific methods

Scientists use a scientific method to collect high-quality data to explain observations and answer questions.
A scientist might choose any of the four scientific methods:

- Testing a hypothesis by changing variables e.g. smoother surfaces cause less friction to act on objects sliding over them.
- Testing a hypothesis without changing variables e.g. as age increases, the likelihood of developing arthritis increases.
- Experimenting by changing variables without testing a hypothesis e.g. testing different elements to classify them as metals or non-metals.
- Observing phenomena without changing variables or testing a hypothesis e.g. biologists observing cells or astronomers observing planets.

Measurement error

Random error is a measurement error that arises unpredictably from the experimental environment and cannot be controlled. As it is unpredictable, random error cannot be removed or corrected.
But the impact of random error can be minimised by taking multiple measurements, ignoring any anomalies and calculating a mean.

Conclusions

It is important that a conclusion is based on the observed data and trends without making over-generalisations that extend beyond the scope of the experiment. This makes the conclusion more reliable. E.g. when testing polymer strengths, a statement such as "polymer C is always stronger than polymer B" would be an over-generalisation.

Developing technology through scientific knowledge

Scientific advances have enabled workers in Science, Technology, Engineering, and Mathematics (STEM) fields) to further technology and industry by developing new tools and machines, and by making the production of goods in large quantities possible.

For example, being able to create new composite materials such as fibreglass has led to their use for car body panels, and these are mass produced, made in large quantities, every day.

Developing scientific knowledge through technology

Technology developments have allowed scientists to learn more about materials.

Technology	What it allows scientists to do
Electron microscope	See the structure of materials down to the level of each atom.
Computer simulations	Simulate how ceramics behave under different conditions.
Three-dimensional (3D) printing machines	Quickly produce prototypes and test new ceramic designs.

Advancements in technology have improved scientific research by providing scientists with many ways of collecting high-quality data and communicating.

- Computer simulations allow scientists to test materials under different conditions.
- Cloud-based platforms (online tools) allow scientists all over the globe to communicate and collaborate.

Hartshill Academy
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Year 7

Geography

Heart - Ambition - Respect - Tenacity

7.03: Development

Background

Across the world, the standard of living and quality of life can be very different.

A	Countries therefore have different classifications based on the quality of life within them.
B	How developed a country is can be measured in different ways.
C	Development levels can vary within and between countries. There are many reasons why some countries are more developed than others.
D,E	**Countries can become more developed in many ways, including through economic growth from tourism, top-down development projects and bottom-up development projects.**

A) Country classification

1	**developed**	(n) countries with high standards of living, advanced infrastructure and strong economies.
2	emerging	(n) countries transitioning between developing and developed, showing rapid improvements in infrastructure.
3	**developing**	(n) countries with lower standards of living, less advanced infrastructure and economies that are growing but not yet strong.

B) Measuring development

1	**GNI per capita**	(n) the average income of a country's citizens.
2	**infant mortality rate**	(n) the number of babies that do not survive to one year old per 1,000 births.
3	**life expectancy**	(n) the average number of years a person is expected to live.
4	**literacy rate**	(n) the percentage of people in a specific age group, typically aged 15 and above, who can read and write.
5	**average years of schooling**	(n) the average number of years of education that individuals aged 25 and older have completed.
6	**Human Development Index (HDI)**	(n) a composite measure of development that is used to categorise the development of countries using GNI per capita, life expectancy and average years of schooling.

C) Factors that hinder development

Human	Physical
uneven distribution of income	challenging relief
corruption	extreme climate
conflict	lack of natural resources
low-value goods and services for trade	landlocked
high levels of debt	tectonic hazards
poor education systems	extreme weather
poor healthcare systems	lack of water resources

D and E) Development Projects

D) **Top-down project:** The Grand Inga Dam DRC

Advantages	Disadvantages
It provides a reliable source of renewable energy for the DRC.	It would flood 22,000 hectares of land in the Bundi Valley.
It provides electricity for Kinshasa at a lost cost.	Natural habitats will be destroyed by the reservoir.
It produces electricity that the DRC can sell the other countries.	35,000 people would be displaced from their homes by the dam reservoir.
It produces electricity to power more coltan and copper mines.	Electricity will be sold to other countries, and many people in rural DRC will still be without electricity.

E) **Bottom-up project:** WECAN DRC

Advantages	Disadvantages
It protects the habitats of 100,000 species of animals and plants.	It is small scale, so it has limited reach.
It empowers indigenous women.	It does not stop illegal logging.
Women earn money from selling fruit and herbs from the trees planted.	The project currently supports only 700 women.
It reduces the impact of climate change through reforestation.	It takes a long time for the full benefits to be achieved.

7.04 Rivers

Background

Rivers affect the landscape and the lives of the people who live near them.

A	Rivers are found within their own drainage basin and have their own distinct features.
B	As a river moves from its source in the upper course to its mouth in the lower course, its profile changes.
C	There are many different river processes that can impact the landscape.
D–F	The processes of erosion and deposition can lead to the formation of different river landforms.
G	Flooding is a key feature of rivers, and drainage basin processes play a significant role in this. By altering the drainage basin of a river, we can interfere with these processes.
H	There are many examples of floods. Today, many strategies have been put in place to manage the flood risk.

A) Drainage basin features

1	drainage basin	(n) an area of land drained by a river and its tributaries
2	source	(n) the start of a river
3	mouth	(n) the place where the river enters a lake, sea or ocean
4	tributary	(n) a smaller river that joins a larger river
5	confluence	(n) the point at which two or more rivers meet
6	watershed	(n) the dividing line between two drainage basins

B) The river profile

1	**upper course**	the narrow, steep, upper part of a river, which contains waterfalls
2	middle course	the wider, deeper channel, which contains meanders and oxbow lakes
3	**lower course**	the widest, flattest part of the river near the mouth, which contains the floodplain.

C) River processes

	river load	(n) the material carried along in the river
1	erosion	(n) the breaking down or wearing away of material.
	vertical erosion	(n) erosion which takes place downwards into the land.
	lateral erosion	(n) when erosion moves across the land from side to side, causing the bends of meanders to widen.
2	transportation	(n) when rivers carry rocks and sediment along their journey
3	deposition	(n) when a river drops its load

D) River features - waterfalls

1	**waterfalls**	(n) water falling from a height when a river or stream flows over a steep drop (upper course)
2	**plunge pool**	(n) an area at the base of a waterfall that undercuts the hard rock layer
3	**gorge**	(n) a steep sided valley left behind when a waterfall retreats upstream

E) River features - meanders

1	meander	(n) a bend in a river (middle course)
2	slip-off slope	(n) the sloping bend of a meander from the inside (shallow) to the outside (deep)
3	river cliff	(n) the undercut bank on the outside bend of a meander

F) River features - floodplains

1	**floodplain**	(n) a wide, flat area of land that is flooded frequently when a river bursts its banks (lower course)
2	levee	(n) banks found at the side of a river in the lower course
3	silt	(n) the fine, fertile eroded material transported by a river

G) The drainage basin system

1	**precipitation**	(n) water falling to the ground in all forms (rain, snow, sleet and hail)
2	**interception**	(n) when the leaves of trees stop precipitation reaching the ground
3	surface runoff	(n) the movement of water over the surface of the land back into a river
4	surface storage	(n) water stored on the surface in lakes or puddles
5	**infiltration**	(n) the movement of water from the surface into the soil
6	**throughflow**	(n) the movement of water through the soil back into the river

H) Case study: Somerset levels UK

Where/when Southwest England, flood 2014
Rivers Parrett and Tone

Causes	Effects	Responses
deforestation on the floodplain	600 homes flooded	20,000 sandbags provided to protect homes
saturated ground from heavy rainfall	£200 million lost from the collapse of the tourist industry	65 pumps installed to drain millions of cubic metres of floodwater
low-lying land with four rivers flowing through it	6,800 hectares of agricultural land flooded	Hundreds of people were evacuated from their homes.
build-up of sediment in the channel from lack of dredging	Native bird species couldn't hunt on the flooded ground.	The Environmental Agency is spending £6 million a year on dredging the rivers Parrett and Tone.

7.05: World of work

Background

A	The world of work can be classified into four different employment sectors.
B	Many factors influence the type of employment sector which will be found within a particular country.
C	Industrial location is influenced by some key factors, which are more important for some industries in comparison to others.
D	Employment structure within countries varies based upon the level of development.
E	Trade, imports and exports.
F	Employment sectors and impact of industry in Russia.

A) Employment sectors

1	employment	(n) when people are in work, receiving a wage and paying tax.
2	unemployment	(n) when people are not in work, therefore do not receive a wage and do not pay tax.
3	primary industries	(n) industries which collect or extract natural resources from the environment, such as farming or fishing.
4	secondary industries	(n) industries which manufacture goods into products, such as builders, car manufacturers or food processing
5	tertiary industries	(n) industries that provide a service, such as teachers, doctors, sales, hairdressers or bus drivers.
6	quaternary industries	(n) industries that involve using technology, design and research, including computer scientists, game designers, computer engineers and research scientists.

B) Influences on employment structures

1	industrialisation	(n) a move from primary employment to secondary employment, with a rise in manufacturing.
2	mechanisation	(n) when machinery begins to do the jobs which once required humans.
3	disposable income	(n) the money a person has left to spend after they have paid all their bills.
4	public services	(n) a service that is given or funded for the benefit of the community.

C) The location of industries

1	site	(n) the actual place where a settlement first grew up. This refers mainly to its physical setting.
2	situation	(n) the location of a place relative to other features nearby.
3	footloose	(adj) industries which are not tied to a specific location and can operate from anywhere.
4	raw materials	(n) natural resources that are used to make other things.
5	labour	(n) workers, employed people.
6	market	(n) a place where things are bought and sold.

E) Trade

1	trade	(n) the exchange of goods and materials between countries.
2	import	(v) goods brought into a country.
3	export	(v) sending goods to another country for sale.
4	trade bloc	(n) an arrangement in which participant countries lower trade barriers with one another.
5	tariff	(n) a tax imposed on goods when they are imported or exported between countries.

D) Employment structures and development

Countries	Industries
developing countries	Large primary sector, growing secondary sector and a moderate tertiary sector.
emerging countries	large secondary sector, rapidly falling primary sector and growing tertiary sector.
developed countries	A large tertiary sector, a growing quaternary sector, both secondary and primary employment is low.

Change	Cause
Falling primary and secondary sector	1. Cheaper to import. 2. Mechanisation has taken jobs. 3. Raw materials have been exhausted in certain areas.
Growing tertiary sector	1. Disposable income has increased, so a greater demand for services. 2. A large public sector e.g. health and education, due to a high tax revenue.

F) Case study: World of work in Russia

Factors effecting trade in Russia

Opportunities	Challenges
With a working population of over 75 million people, Russia has one of the largest workforces in the world.	Russia is at war with Ukraine which affects international relationships.
The Steppe and temperate woodlands of western Russia are fertile and flat.	Russia has the largest land mass of any country.
Russia has an extensive network of roads, railways, ports and pipelines.	Russia does not have a warm water port.
Russia has vast reserves of natural resources including oil and natural gas.	Many countries aim to buy and use less oil and natural gas in the future to mitigate the effects of climate change.
Russia's education system puts a strong focus on science, technology, engineering and maths (STEM).	

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History

Heart - Ambition - Respect - Tenacity

7.04 Medieval Monarchs

Key Vocabulary

1	baron	(n) a person who held land or property given by the monarch or a powerful overlord.
2	challenge	(n) to make a rival claim or to threaten someone's hold on a position.
3	dynastic	(adj) relating to a line of rulers from the same family.
4	heresy	(n) a belief that goes against the teachings of the Church
5	male primogeniture	(n) the practice of giving the inheritance to the eldest son in the family.
6	miasma	(n) the idea that disease is caused by foul smelling air.
7	monarch	(n) king or queen.
8	resistance	(n)he refusal to accept or obey something.
9	revolt	(n) often a violent and sudden resistance which is short-lived.
10	seige	(n) military act of surrounding a city or base, attacking it, and cutting off supplies.

Key dates

1135-53	The Anarchy
1170	Murder of Thomas Becket
1154	Eleanor becomes Queen of England and France
1209	King John excommunicated
1215	Magna Carta
1265	Creation of Parliament under Henry III
1381	Peasants' Revolt
1455-87	Wars of the Roses

Themes and Threads

Power

The control a person or group has in a country.

For example, the power of the monarch was challenged during the Peasants' Revolt in 1381.

This includes threads such as class systems, succession, protest and democracy.

Identity

The qualities and characteristics that make a person who they are and what they value as important.

For example, the role of women such as Eleanor of Aquitaine who played an active role as Queen.

This includes threads such as the role of women and beliefs.

Connectivity

The act of joining or being linked to somewhere, someone or something else.

For example, the Black Death arrived in England in 1348 and there were several ideas about the causes of the disease and how to treat it.

This includes threads such as medicine.

7.04: Medieval Monarchs

Chronology

William I
1066 - 1087

William II
1087 - 1100

Henry I
1100 - 1135

Stephen
1135 - 1154

Henry II
1154 - 1189

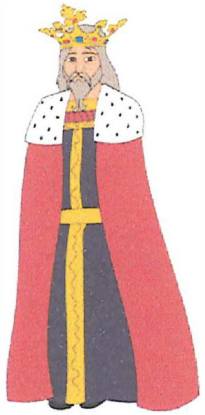
Richard I
1189 - 1199

John
1199 - 1216

Henry III
1216 - 1272

Edward I
1272 - 1307

Edward II
1307 - 1327



Edward III
1327 - 1377

Richard II
1377 - 1399

Henry IV
1399 - 1413

Henry V
1413 - 1422

Henry VI
1422 - 1461

Edward IV
1461 - 1483

Edward V
1483

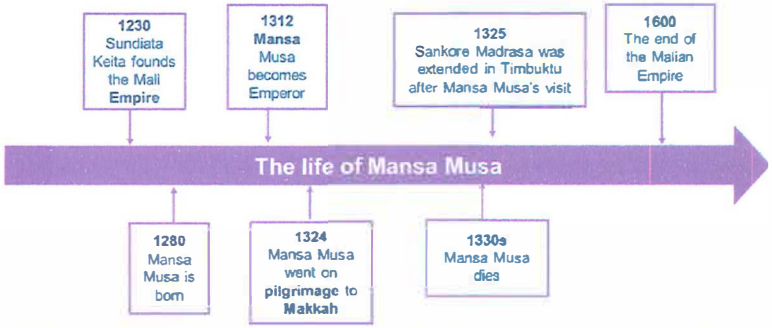
Richard III
1483 - 1485

Mali

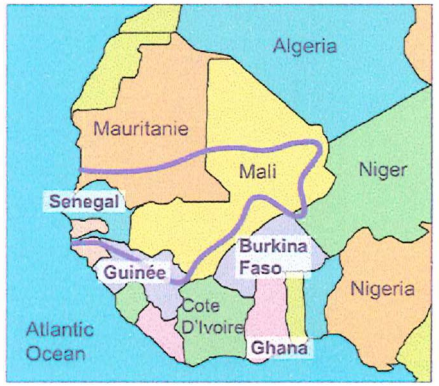
Key Vocabulary

1	annexation	(n) to add conquered territory to your own territory.
2	caravan	(n) a group of people, travelling together across a desert in Asia or North Africa.
3	diplomatic	(adj) being careful not to hurt someone's feelings.
4	divine	(adj) like a God.
5	empire	(n) a group of countries ruled by a single ruler.
6	enslaved	(v) to force someone to remain in a conditions such as slavery.
7	Griot	(n) people in West Africa who passed on their society's history through stories, poems and music.
8	legacy	(n) how someone or something is remembered.
9	Makkah	(n) the holy city of Islam in Saudi Arabia.
10	Mansa	(n) king of the Mali Empire.
11	merchant	(n) someone who buys goods and sells them for a profit.
12	pilgrimage	(n) a journey typically taken to a site of religious importance.

Chronology



Place



The line on this modern map of West Africa shows the location of the Mali Empire.

The Mali Empire was located in West Africa and was richer than any European empire during the 13th – 16th centuries.

Themes and Threads

Power

The control a person or group has in a country.

For example, the Mali Empire was the wealthiest and largest empire in Africa. It expanded under Mansa Musa.

This includes threads such as succession and empire.

Identity

The qualities and characteristics that make a person who they are and what they value as important.

For example, Mansa Musa was a devout Muslim and wanted to spread Islam across the Empire.

This includes threads such as beliefs and class systems.

Connectivity

The act of joining or being linked to somewhere, someone or something else.

For example, the Mali empire was rich in gold and salt which was used to trade with other empires.

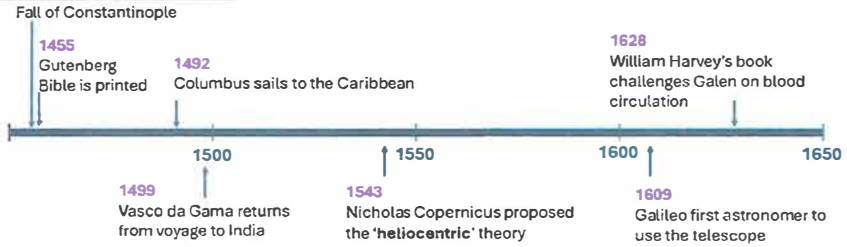
This includes threads such as trade and knowledge.

European Renaissance

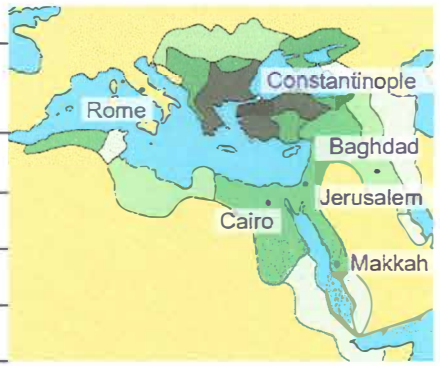
Key Vocabulary

1	Absolute monarch	(n) when a ruler holds unlimited power.
2	Anatomy	(n) a branch of science that studies the body structure of humans and animals.
3	Aristocrat	(n) someone of high class.
4	Artillery	(n) large guns that can fire across long distances.
5	Bombardment	(n) to attack with guns or canon fire.
6	Circumnavigate	(v) to sail around the world.
7	Innovation	(n) the process of improving something or creating something that is a new technology.
8	Invention	(n) the creation of a new device, method or process.
9	Janissary	(n) an infantry unit made up of young Christian men.
10	Musket	(n) a long loading gun.
11	Physician	(n) a highly educated and trained medical expert.
12	Renaissance	(n) the revival of art and learning in Europe 1300-1600
13	Republic	(n) a form of government where power is held by elected individuals and not a monarch.
14	Voyage	(n) a long journey.

Chronology



Place



Themes and Threads

Power

The control a person or group has in a country.

For example, the Ottoman empire was controlled by the Sultan who was an absolute monarch.

This includes threads such as succession, warfare, empire and class systems.

Identity

The qualities and characteristics that make a person who they are and what they value as important.

For example, during the Renaissance a new school of thought called humanism emerged.

This includes threads such as the role of women and beliefs.

Connectivity

The act of joining or being linked to somewhere, someone or something else.

For example, after the fall of Constantinople many scholars migrated to Italy.

This includes threads such as migration and medicine.

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Year 7

French

Heart - Ambition - Respect - Tenacity

The Basics

1.1.1 Salut, comment t'appelles-tu? - Hi, what's your name?	
Bonjour	Hello
Salut	Hi
Merci	Thank you
Comment t'appelles-tu ?	What is your name?
Je m'appelle...	I'm called...
Comment il/elle s'appelle?	What is he/she called?
Elle/Il s'appelle...	S/he is called...
Au revoir	Good-bye

1.1.3 Quel âge as-tu? Quel âge a-t-elle/il? - How old are you? How old is she/he?	
Quel âge as-tu ?	How old are you?
J'ai ... ans.	I am ... years old.
Quel âge a-t-elle/il?	How old is she/he?
Elle/il a ... ans.	She/he is ... years old.

1.2 Quelle est la date de ton anniversaire? - When is your birthday ?	
Mon anniversaire est le...	My birthday is...
Premier **deux/trois**	First of... second/third
Mon anniversaire est le cinq mars	My birthday is the 5th March

1.1.4 Où habites-tu? Quelle est ta nationalité? - Where do you live? What's your nationality?	
Où habites-tu?	Where do you live?
D'où viens-tu ? Quelle est ta nationalité?	Where do you come from? What nationality are you?
J'habite	I live
à (+ name of town/city)	In (+ name of town/city)
en/au/aux (+ country)	In (plus country)
En... Angleterre/Écosse/Irlande du Nord/France/ Espagne/Allemagne...	In England/Scotland/Northern Ireland/France/Spain/ Germany...
Au Pays de Galles/Portugal/Canada	In Wales/in Portugal/in Canada
Aux Etats-Unis/aux Pays-Bas	In the USA/in the Netherlands
Je suis... anglais(e)/écossais(e)/gallois(e)/ nord-irlandais(e)...	I am... English/Scottish/Welsh/Northern Irish...
Je parle... français/espagnol/allemand/arabe	I speak... French/Spanish/German/Arabic
Je veux parler...	I want to speak...

1.3 Qu'est-ce que tu aimes faire? - What do you like doing? Qu'est-ce que tu n'aimes pas faire? - What don't you like doing?	
J'aime (+infinitive/noun with article) **J'aime danser / J'aime le chocolat**	I like I like dancing/I like chocolate
Je n'aime pas (+infinitive/noun with article) **Je n'aime pas chanter**	I don't like I don't like singing
J'adore (+infinitive/noun with article)	I love
Je déteste (+infinitive/noun with article)	I hate
Je préfère (+ infinitive/noun with article)	I prefer
Jouer (au foot/au tennis/au rugby/au golf)	To play (football/tennis/rugby/golf)
Jouer sur mon Xbox	To play on my Xbox
Faire du sport	To play (to do) sport
Manger (de la pizza / du chocolat)	To eat (pizza/chocolate)

My Family

2.1 Parle-moi de ta famille - Tell me about your family	
Dans ma famille	In my family
Il y a	There is/are
Ma mère/Ma belle-mère	My mum/step mum
Ma sœur	My sister
Ma grand-mère	My grandma
Mon père/Mon beau-père	My dad/step dad
Mon frère	My brother
Mon grand-père	My grandad
Mes frères et sœurs	My brothers and sisters
Elle/il s'appelle...	S/he is called...
Elle/il a...ans	S/he is ... years old

2.2.1 Tu es comment? - What are you like?	
J'ai les yeux ...(bleus/verts/noisette/marron)	I have ...(blue/green/hazel/brown) eyes.
J'ai les cheveux... (blonds/roux/gris/noirs/bruns)	I have ... (blonde/red/grey/black/brown) hair.
Longs	Long
Courts	Short
Raides	Straight
Ondulés	Wavy
Bouclés/Frisés	Curly
Je suis.../Je ne suis pas...	I am.../I am not...
Grand(e)	Tall
Petit(e)	Small
Mince	Slim
Gros(se)	Big/fat
Drôle/Marrant(e)	Funny

2.2.2 Décris ton père/ton frère/ta mère/ta sœur - Describe your Dad/Brother/Mum/Sister	
Ton/ta/tes	Your
Mon père a ...	My dad has...
Mon père est.../mon père n'est pas...	My dad is.../my dad isn't...
Elle a.../Il a... (...ans/les cheveux.../les yeux...)	He has/She has..(...years/...hair/...eyes)
Elle est... /Il est... **grand/grande**	He is/She is tall
Elle/Il aime... (+ noun or infinitive) **Elle aime le tennis/Il aime jouer au tennis**	He/she likes She likes tennis/He likes to play tennis
Elle/Il préfère... (+ noun or infinitive)	S/he prefers
Elle/Il porte	S/he wears
Une barbe	A beard
Chauve	Bald

My Family

2.3 Qu'est-ce que tu aimes faire? Qu'est-ce qu'elle/il aime faire? - What do you like doing? What does s/he like doing?	
J'aime (+ infinitive/noun with article)	I like...
Elle/il aime (+ infinitive/noun with article)	S/he likes...
J'adore (+ infinitive/noun with article)	I love...
Elle/il adore (+ infinitive/noun with article)	S/he loves...
Je déteste (+ infinitive/noun with article)	I hate...
Elle/il déteste (+ infinitive/noun with article)	S/he hates...
Je n'aime pas (+ infinitive/noun with article)	I don't like...
Elle/il n'aime pas (+ infinitive/noun with article)	S/he doesn't like...
Je préfère (+ infinitive/noun with article)	I prefer...
Elle/il préfère (+ infinitive/noun with article)	S/he prefers...

2.4.1 As-tu des animaux? Décris ton animal - Have you got any pets? Describe your pet.	
J'ai...	I have...
Un chat/deux chats	A cat/two cats
Un chien/deux chiens	A dog/two dogs
Un lapin/deux lapins	A rabbit/two rabbits
Un cochon d'Inde/deux cochons d'Inde	A guinea pig/two guinea pigs
Un poisson rouge/deux poissons rouges	A goldfish/two goldfish
Un oiseau/deux oiseaux	A bird/two birds
Un serpent/deux serpents	A snake/two snakes
Un cheval/deux chevaux	A horse/two horses
Une tortue/deux tortues	A turtle/two turtles
Une araignée/deux araignées	A spider/two spiders
Qui s'appelle...	Who is called...
Qui s'appellent...	Who are called...
Elle/il est...	S/he is...

2.4.2 Quels animaux préfères-tu/veux-tu? - What animals do you like/do you want?	
Je préfère les...(chiens/chats/chevaux/lapins/tortues/serpents/ cochons d'Inde/oiseaux/araignées)	I prefer (dogs/cats/horses/rabbits/turtles/snakes/guinea pigs/birds/spiders)
Car elle/il sont...	Because they are...
Mon animal préféré est le ...	My favourite animal is...
À l'avenir	In the future
Je veux avoir...	I want to have...

My School

3.1.1 Quelles matières as-tu le lundi? - What lessons do you have on Mondays?	
Le lundi j'ai...	On Mondays I have...
Le lundi on a...	On Mondays we have...
L'anglais	English
L'informatique	ICT
L'EPS (éducation physique et sportive)	P.E.
L'allemand	German
L'espagnol	Spanish
L'instruction civique	Citizenship
L'histoire	History
La religion	R.E.
La géographie	Geography
La musique	Music
La technologie	Technology
Le théâtre	Drama
Le français	French
Les maths	Maths
Les sciences	Science
Les arts plastiques	Art
Le matin	In the morning
L'après-midi	In the afternoon
À ... heures	At ... o'clock
À ... heures et demie	At half past ...

3.1.2 Quelle est ta matière préférée? - What is your favourite subject? Quelles matières aimes-tu? - Which subjects do you like?	
Ma matière préférée est...	My favourite subject is...
Parce que/car c'est...	Because it's...
Ce n'est pas...	It isn't...
Compliqué	Complicated
On a beaucoup de devoirs	We get lots of homework
J'aime/Je n'aime pas le/la prof	I like/I don't like the teacher
Je préfère...	I prefer...
Plus intéressant/e(s) que...	More interesting than...
Moins intéressant/e(s) que...	Less interesting than...

3.2 Décris-moi tes profs - Describe your teachers to me	
Mon/ma prof préféré(e) s'appelle...	My favourite teacher is called...
Mon/ma prof de/d'...	My ...(subject) teacher
Elle/il est grand(e)/ petit(e)/de taille moyenne	S/he is tall/small/average height
Elle/il a les cheveux courts/longs/blonds/ gris/ noirs/bruns/raides/frisés	S/he has short/long/blonde/grey/ black/ brown/straight/curly hair
Elle/il porte des lunettes	S/he wears glasses
Elle/il est...	S/he is...
Elle/il nous aide	S/he helps us
Elle/il explique des choses bien	S/he explains things well
Elle/il n'explique pas bien	S/he doesn't explain well
Elle/il crie	S/he shouts

My School

3.3 Décris ton collège - Describe your school	
Mon collège est...	My school is...
Il y a ... bâtiment(s)	There are ... buildings
Dans mon collège il y a...	In my school there is/are...
Les salles de classe	Classrooms
Les laboratoires de sciences	Science labs
Un court de tennis/de basket	A tennis/basketball court
Un terrain de sport	A playing field
Un gymnase	A sports hall
Un théâtre	A theatre
Une cantine/une cafétéria	A canteen
Une salle informatique	A computer room
Une salle des profs	A staffroom
Une bibliothèque	A library
Une piscine	A swimming pool
Je voudrais...	I would like...
Un/une autre...	Another...
Plus de/d'...(ordinateurs/salles de classe)	More (computers/ classrooms)
Une salle de danse	A dance studio
Une salle de jeux	A games room

3.5 Qu'est-ce que tu fais pendant la récré? - What do you do during break? Qu'est-ce que tu fais après le collège généralement? - What do you do generally after school?	
Pendant la récré	During break
Je mange à la cantine/On mange à la cantine	I eat in the canteen/we eat in the canteen
Un sandwich	A sandwich
Un casse-croûte	A snack
Du chocolat	Chocolate
Des fruits	Some fruit
Des chips	Crisps
Je bois (de l'eau, du coca)/On boit	I drink (water/coke)/we drink
Je lis/On lit	I read/we read
Je joue au foot/au basket/On joue au foot/au basket	I play football/basketball/ we play football/basketball
Je bavarde avec mes amis/On bavarde	I chat with my friends/we chat
Je vais dehors/ On va dehors	I go outside/we go outside
Après le collège	After school
Je vais au parc	I go to the park
Je retrouve mes amis	I meet my friends
Je fais du sport/du vélo/de la danse/mes devoirs	I do sport/ ride my bike/dance/do my homework
J'écoute de la musique dans ma chambre	I listen to music in my bedroom
Je joue aux jeux vidéo	I play video games
Je regarde la télé/ Netflix	I watch television/Netflix

3.4 Qu'est-ce que tu vas faire après le collège/l'école aujourd'hui? - What are you going to do after school today?	
Après le collège	After school
Je vais...(+Infinitive) **Retrouver mes amis/ Faire mes devoirs**	I'm going... To meet my friends/ to do my homework
Je ne vais pas...(+Infinitive) **Promener mon chien**	I'm not going... To walk my dog

Where I Live

4.1.1 Où habites tu? - Where do you live?	
J'habite dans...	I live in...
Une petite/grande maison	A small/big house
Une maison individuelle	A detached house
Une maison jumelée	A semi-detached house
Un appartement	An apartment
...est situé(e)/...se trouve	...is situated/...is located
Dans le nord/le sud/l'est/ l'ouest de l'Angleterre	In the north/south/east/west of England
À la campagne	In the countryside
À la montagne	In the mountains
Au bord de la mer	By the seaside
Dans une (grande) ville	In a town/city
Dans un village	In a village
Près d'un aéroport/d'un centre commercial	Near an airport/shopping centre
J'aime habiter ici	I like living here
On peut (+infinitive)	You can
Il y a...	There is/are...
Beaucoup de choses à faire	Lots of things to do
Opportunités pour les jeunes	Opportunities for young people
Un bon système de transport en commun/transports publics	A good public transport system
J'aime la tranquillité	I like the peacefulness

4.1.2 Décris ta maison - Describe your house	
Ma maison est... **Mon appartement est...**	My house is... My apartment is...
Il y a... (+ un/une or number)	There is/are...
Il n'y a pas de (+item)	There isn't/aren't...
Un salon	A living room
Un balcon	A balcony
Un garage	A garage
Un jardin	A garden
Un bureau	A study/office
Une cuisine	A kitchen
Une buanderie	A utility room
Une salle de bains	A bathroom
Une salle à manger	A dining room
Une chambre **Deux chambres**	A bedroom Two bedrooms
La chambre de mes parents/ ma soeur	My parent's/sister's bedroom

4.2 Décris ta chambre - Describe your bedroom	
Il y a... (+ un/une or number)	There is/are...
Il n'y a pas de (+item)	There isn't/aren't...
Un lit	A bed
Un bureau	A desk
Un poster	A poster
Un ordinateur	A computer
Une chaise	A chair
Une armoire	A wardrobe
Une étagère	A bookshelf
Des lits superposés	Bunk beds
Sous	Under
Sur	On top of
Entre	Between
Devant	In front of
Derrière	Behind
À côté du/de la/des	Next to

Where I Live

4.3.1 Décris ta ville ou ton village - Describe your town or village	
Qu'est-ce qu'il y a dans ta ville ?	What is there in your town?
Il y a... (+ un/une or number)	There is/are...
Il n'y a pas de (+item)	There isn't/aren't...
Beaucoup de	Lots of
Un centre commercial	A shopping centre
Un centre de loisirs	A leisure centre
Un parc	A park
Un cinéma	A cinema
Un restaurant (italien/ chinois)	A (Italian/Chinese) restaurant
Un café	A café
Un parc d'attractions	A theme park
Un théâtre	A theatre
Un bowling	A bowling alley
Un château	A castle
Un musée	A museum
Une piscine	A swimming pool
Une patinoire	An ice rink
Une bibliothèque	A library

4.3.2 Qu'est-ce qu'on peut faire dans ta ville? - What can you do in your town?	
On peut (+infinitive)	You can
On ne peut pas (+infinitive)	You can't
Aller au cinéma	Go to the cinema
Aller à la plage	Go to the beach
Aller au bowling	Go to the bowling alley
Jouer au parc	Play in the park
Manger au restaurant	Eat at a restaurant
Visiter le musée/le château	Visit the museum/the castle
Voir un spectacle	See a show
Faire des promenades	Go for walks
Faire du shopping	Go shopping

4.4.1 Tu aimes habiter ici? Pourquoi/pourquoi pas? - Do you like living here? Why (not)?	
J'aime habiter ici	I like living here
Je n'aime pas habiter ici	I don't like living here
Beaucoup de choses à faire	Lots of things to do
Beaucoup d'emplois	Lots of jobs
Beaucoup d'opportunités pour les jeunes	Lots of opportunities for young people
Beaucoup d'espaces verts	Lots of green space
Trop de pollution	Too much pollution

4.4.2 Où vas-tu habiter plus tard? - Where are you going to live later?	
À l'avenir	In the future
Je vais habiter	I'm going to live
Je voudrais habiter	I would like to live
Je veux habiter	I want to live
À (+city name)	In
À la campagne	In the countryside
À la montagne	In the mountains
Au bord de la mer	By the sea
Dans une grande ville	In a city
À l'étranger	Abroad
En France/en Espagne/en Allemagne/en Australie	In France/in Spain/in Germany/in Australia
Au Portugal/au Maroc	In Portugal/In Morocco
Aux États-Unis/aux Caraïbes	In the USA/in the Caribbean
J'aime le soleil	I like the sun
J'adore la culture	I love the culture
J'aime la nourriture	I like the food
J'aime faire du ski	I like skiing
C'est plus intéressant que...	It's more interesting than...

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Year 7

Spanish

Heart - Ambition - Respect - Tenacity

The Basics

1.1.1 Hola, ¿Qué tal?	
Hola	Hello
Buenos días/buenas tardes	Good morning/afternoon
Gracias	Thank you
¿Cómo te llamas?	What's your name?
Me llamo	My name is...
¿Cómo se llama?	What is s/he is called?
Se llama...	S/he is called...
Adiós/hasta luego	Good-bye

1.1.3 ¿Cuántos años tienes? - How old are you? How old is he/she?	
¿Cuántos años tienes?	How old are you?
Tengo ... años.	I am ... years old.
¿Cuántos años tiene?	How old is s/he?
Tiene ... años.	S/he is ... years old.

1.2 ¿Cuando es tu cumpleaños? - When is your birthday?	
Mi cumpleaños es el...	My birthday is on...
Primero/uno de Dos/tres/cuatro de...	Second/third/fourth of...
Mi cumpleaños es el cinco de marzo	My birthday is the 5th March

1.1.4¿De dónde eres? ¿Dónde vives? - Where are you from? Where do you live?	
¿Dónde vives?	Where do you live?
¿De dóndes eres? ¿Cuál es tu nacionalidad?	Where are you from? What is your nationality?
Vivo en... Inglaterra/Escocia/Irlanda del Norte/Gales/Francia/España/Alemania/Portugal/Italia/los Estados Unidos (EEUU)	I live in... England/Scotland/Northern Ireland/Wales/France/Spain/Germany/Portugal/Italy/United States (USA)
Soy...	I am...
inglés/inglesa	English
escocés/escocesa	Scottish
galés/galesa	Welsh
irlandés/irlandesa	Irish
Hablo...	I speak...
español	Spanish
árabe	Arabic
francés	French
alemán	German
Me gustaría hablar...	I would like to speak...

1.3 ¿Qué (no) te gusta hacer? - What do you (not) like doing?	
Me gusta (+ infinitive/noun with article) Me gusta bailar/el regetón	I like I like dancing/I like regeton
No me gusta (+ infinitive/noun with article) No me gusta cantar	I don't like I don't like singing
Me encanta (+ infinitive/noun with article)	I love
Detesto (+ infinitive/noun with article)	I hate
Prefiero (+ infinitive/noun with article)	I prefer
Jugar (al + sport)	To play
Jugar con la consola/a los videojuegos	To play my Xbox
Hacer deporte	To play - to do sport
Comer	To eat

My Family

2.1 Háblame de tu familia - Tell me about your family	
En mi familia	In my family
Hay...personas	There are ... people
Mi madre/mi madrastra	My mum/step mum
Mi hermana	My sister
Mi abuela	My grandma
Mi padre/mi padrastro	My dad/stepdad
Mi hermano	My brother
Mi abuelo	My grandad
Mis hermanos	My brothers and sisters
Tiene ... años.	S/he is ... years old

2.2.1 ¿Cómo eres? - What are you like?	
Tengo los ojos (azules/verdes/marrones)	I have ...(blue/green/brown) eyes.
Tengo el pelo (rubio/pelirrojo/gris/negro/castaño)	I have ... (blonde/red/grey/black/brown) hair.
Largo	Long
Corto	Short
Liso	Straight
Ondulado	Wavy
Rizado	Curly
Soy.../no soy...	I am.../I am not...
Muy	Very
Bastante	Quite
Un poco	A bit

2.2.2 Describe a tu madre/padre - Describe your mother/father	
Tu/tus	Your
Mi padre tiene...	My dad has...
Mi padre es/mi padre no es...	My dad is.../my dad isn't...
Tiene	S/he has
Es	S/he is
A ... le gusta...	S/he likes
Prefiere	S/he prefers
Lleva	S/he wears
Barba	A beard
Bigote	A moustache
Gafas	Glasses
Pecas	Freckles
Aparato	Braces

My Family

2.3 ¿Qué te gusta hacer? ¿Qué le gusta hacer? - What do you like doing? What does s/he like doing?	
Me gusta (+ infinitive/noun with article)	I like...
A... le gusta (+ infinitive/noun with article)	S/he likes...
Me encanta (+ infinitive/noun with article)	I love...
Le encanta (+ infinitive/noun with article)	S/he loves...
Detesto (+ infinitive/noun with article)	I hate...
Detesta (+ infinitive/noun with article)	S/he hates...
No me gusta (+ infinitive/noun with article)	I don't like...
No le gusta (+ infinitive/noun with article)	S/he doesn't like...
Prefiero (+ infinitive/noun with article)	I prefer...
Prefiere (+ infinitive/noun with article)	S/he prefers...

2.4.1 ¿Tienes mascotas? ¿Cómo es tu perro/gato? - Have you got pets? What is your dog/cat like?	
Tengo ...	I have...
Un gato/dos gatos	A cat/two cats
Un perro/dos perros	A dog/two dogs
Un conejo/dos conejos	A rabbit/two rabbits
Una cobaya/dos cobayas	A guinea pig/two guinea pigs
Un pez/dos peces	A goldfish/two goldfish
Un pájaro/dos pájaros	A bird/two birds
Una serpiente/dos serpientes	A snake/two snakes
Un caballo/dos caballos	A horse/two horses
Una tortuga/dos tortugas	A turtle/two turtles
Una araña/dos arañas	A spider/two spiders
Que se llama...	Who is called...
Que se llaman...	Who are called...
Es...	S/he, it is...

2.4.2 ¿Qué animales prefieres/te gustaría tener o proteger? - What animals do you prefer? What animals would you like to have or protect?	
Prefiero los (perros/gatos/ caballos/conejos/tortugas/ serpientes/cobayas/pájaros/arañas)	I prefer (dogs/cats/horses/rabbits/turtles/snakes/ guinea pigs/birds/spiders)
Porque son ...	Because they are...
Mi animal preferido es el...	My favourite animal is the...
En el futuro	In the future
Me gustaría tener/proteger	I would like to have/protect...
Animales/especies en peligro de extinción	Endangered animals/species

School

3.1.1 ¿Qué asignaturas tienes los lunes? - What subjects have you got on Mondays?	
¿Qué asignaturas tienes los lunes?	What lessons do you have on Mondays?
Los lunes tengo...	On Mondays I have...
Los lunes tenemos...	On Mondays we have...
inglés (el)	English
informática (la)	ICT
educación física (la)	P.E.
alemán (el)	German
español (el)	Spanish
ética (la)	Citizenship
historia (la)	History
religión (la)	R.E.
geografía (la)	Geography
música (la)	Music
diseño (el) y tecnología (la)	Technology
arte dramático (el)	Drama
francés (el)	French
matemáticas (las)	Maths
ciencias (las)	Science
por la mañana	In the morning
por la tarde	In the afternoon
A las...	At ... o'clock
A las... y media	At half past ...

3.1.2 ¿Cuál es tu asignatura favorita? - What is your favourite subject?	
¿Qué asignaturas (no) te gustan ?	Which subjects do you (not) like?
Mi asignatura favorita es el/la/las...	My favourite subject is...
Porque es.../son...	Because it's...
Interesante/s	Interesting
Una pérdida de tiempo	A waste of time
Tenemos muchos/demasiados deberes	We get a lot/too much homework
(No) me gusta el/la profe	I don't like the teacher
Prefiero	I prefer
Más útil que	More useful than...
Menos interesante que	Less interesting than...

3.2 ¿Cómo son tus profes? - What are your teachers like?	
Mi profe favorita/o es la/el de...	My favourite teacher is called...
Mi profe de (+ asignatura)	My ...(subject) teacher
Es alta/o, baja/o, de mediana estatura	S/he is tall/small/average height
Tiene el pelo corto/largo/rubio/gris/ negro/castaño/liso/rizado	S/he has short/long/blonde/grey/ black/brown/straight/curly hair
Lleva gafas	S/he wears glasses
Creo que...	I think that...
En mi opinión	In my opinion
Es...	S/he is...
Nos ayuda	S/he helps us
Explica bien las cosas	S/he explains things well
No explica bien	S/he doesn't explain well
Grita a menudo	S/he shouts often

School

3.3 ¿Cómo es tu instituto? Describe tu colegio - What is your school like?	
Mi instituto/colegio es	My school is...
Hay... edificios	There are ... buildings
En mi colegio hay...	In my school there is/are...
Aulas (las)	Classrooms
Laboratorios de ciencias (los)	Science labs
Una pista de tenis/baloncesto	A tennis/basketball court
Un campo de juego	A playing field
Un gimnasio	A sports hall
Un teatro	A theatre
Una cafetería/un comedor	A canteen
Una clase de informática	A computer room
Una sala de profesores	A staffroom
Una biblioteca	A library
Una piscina	A swimming pool
Me gustaría/quisiera	I would like...
Otro/otra	Another...
Más (ordenadores/aulas/espacio)	More (computers/ classrooms/space)
Un aula para bailar	A dance studio
Une sala de juegos	A games room

3.4 ¿Qué vas a hacer hoy después del colegio? - What are you going to do today after school?	
Después del colegio/instituto	After school
(No) voy a + infinitivo **Salir con mis amigos**	I'm (not) going... Go out with my friends
(No) quiero + infinitivo **Pasear al perro**	I (don't) want... Walk the dog

3.5 ¿Qué haces en el recreo? - What do you do during break? ¿Qué haces normalmente después del colegio? - What do you do generally after school?	
En el recreo	During break
Como/comemos en la cafetería	I/we eat in the canteen
Un bocadillo	A sandwich
Unos caramelos	Some sweets
Una chocolatina	A chocolate bar
Fruta	Some fruit
Patatas fritas	Crisps/chips
Bebo (agua/un refresco)/ bebemos	I drink (water/a soft drink)/we drink
Después del instituto	After school
Voy/vamos al parque/al centro	I go/we go to the park/ to the town centre
Hago/ hacemos los deberes	I do/we do my homework
Juego/ jugamos al baloncesto/ al ordenador	I/we play basketball /on the computer
Charlo con mis amigas/os	I chat with my friends

Where I live

4.1.1 ¿Dónde vives? - Where do you live?	
¿Dónde está tu casa?	Where is your house?
Vivo en...	I live in...
Una casa (independiente)/un chalet (individual)	A detached house
Una casa adosada	A semi-detached/ terraced house
Un piso/ apartamento	A flat/an apartment
Una caravana/una roulotte	A caravan
Está...	...is situated/...is located
En el norte/sur/este/oeste de Inglaterra	In the north/south/east/ west of England
En el campo	In the countryside
En la(s) montaña(s)	In the mountains
En la costa	By the seaside/coast
En una ciudad	In a town/city
En un pueblo (grande/ pequeño)	In a (big/small) village
Cerca de/lejos de un aeropuerto/centro comercial	Near to/far from an airport/shopping centre
Me gusta vivir aquí	I like living here
Hay...	There is/are...
Muchas cosas que hacer	Lots of things to do
Oportunidades para la gente joven/los jóvenes	Opportunities for young people
Buen transporte público	Good public transport
Me encanta la tranquilidad	I like the peacefulness

4.1.2 ¿Cómo es tu casa? - What is your house like?	
Mi casa es... **Mi piso es...**	My house is... My apartment is...
Hay... (+ un/una or number)	There is/are...
No hay (+ item without the article)	There isn't/aren't...
Un salón	A living room
Un balcón/ una terraza	A balcony
Un garaje	A garage
Un jardín	A garden
Un despacho	A study/office
Una cocina	A kitchen
Un lavadero	A utility room
Un cuarto de baño	A bathroom
Un comedor	A dining room
Una habitación/ un dormitorio **Dos habitaciones/dos dormitorios**	A bedroom Two bedrooms

4.2 ¿Qué hay en tu habitación/dormitorio? - What is there in your bedroom?	
Hay... (+ un/una or number)	There is/are...
No hay (+ item, no article)	There isn't/aren't...
Una cama	A bed
Una mesa	A desk
Un poster	A poster
Un ordenador	A computer
Una silla	A chair
Un armario	A wardrobe
Una estantería	A bookshelf
Literas	Bunk beds
Debajo de	Under
Encima de	On top of
Entre	Between
Delante de/enfrente de	In front of
Detrás de	Behind
Al lado de	Next to

Where I live

4.3.1 ¿Qué hay en tu pueblo? - What is there in your town?	
Describe donde vives	Describe where you live
¿Qué hay en tu pueblo/zona/ barrio?	What is there in your town/ neighbourhood?
Hay (+ un/una or number)	There is/are...
No hay (+item)	There isn't/aren't...
Muchos/as	Lots of
Un centro comercial	A shopping centre
Un polideportivo	A leisure centre
Un parque	A park
Un cine	A cinema
Un restaurante (italiano/chino)	A (Italian/Chinese) restaurant
Una cafetería	A café
Un parque de atracciones	A theme park
Un teatro	A theatre
Una bolera	A bowling alley
Un castillo	A castle
Un museo	A museum
Una piscina	A swimming pool
Una pista de patinaje	An ice rink
Una biblioteca	A library

4.3.2 ¿Qué se puede hacer donde vives? - What can you do where you live?	
Se puede (+infinitive)	You can
No se puede (+infinitive) **No se puede visitar el museo /castillo**	You can't You can't visit the museum/ the castle
Ir al cine	Go to the cinema
Ir a la playa	Go to the beach
Ir a la bolera	Go to the bowling alley
Jugar en el parque	Play in the park
Comer en un restaurante	Eat at a restaurant
Visitar el museo/castillo	Visit the museum/the castle
Ver un espectáculo	See a show
Dar paseos/ir de paseo	Go for walks
Ir de compras	Go shopping

4.4.1 ¿Te gusta donde vives? ¿Por qué (no)? - Do you like where you live? Why (not)?	
Me gusta vivir aquí	I like living here
No me gusta vivir aquí	I don't like living here
Muchas cosas que hacer	Lots of things to do
Mucho trabajo	Lots of jobs
Muchas oportunidades para los jóvenes	Lots of opportunities for young people
Suficientes espacios verdes	Lots of green space
Demasiada polución	Too much pollution

4.4.2 ¿Dónde te gustaría vivir en el futuro? - Where would you like to live in the future?	
Quisiera (+ infinitive) vivir	I would like to live
Quiero (+ infinitive) vivir	I want to live
Me gustaría (+infinitive) vivir	I would like to live
Prefiero (+infinitive) vivir	I prefer to live
En (+city name)	In
En el campo	In the countryside
En la montaña	In the mountains
En la costa	By the sea
En una ciudad	In a city
En el extranjero	Abroad
En + country	In + country
Me encanta el sol	I love the sun
Me apasiona la cultura	I love (I am passionate about) the culture
Me gusta la comida	I like the food
Es más interesante que...	It's more interesting than...

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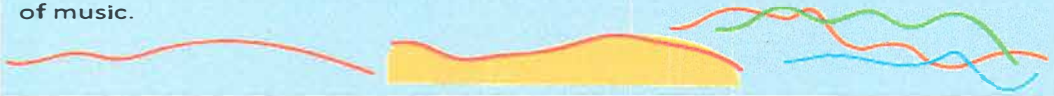
Year 7

Music

Heart - Ambition - Respect - Tenacity

Musical Openings Knowledge Organiser – Year 7 Music

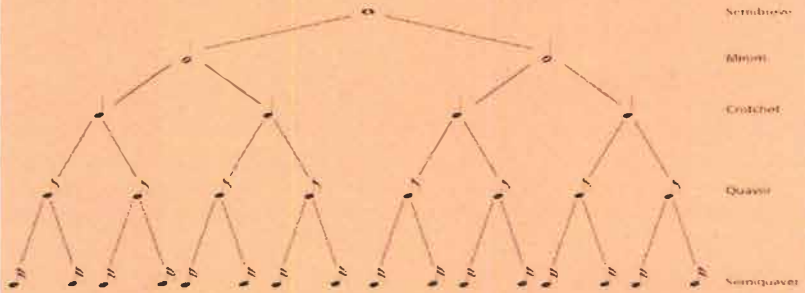
Program Music	A piece of music which either **tells a story** or **describes something**.   
Pitch	Pitches is how high or low a piece of music, or a particular note, is.  
Rhythm/ Duration	Duration/rhythm means how long or short a note is.  
Dynamics	Dynamics are how loud or quiet the music is played.  
Tempo	Tempo is how fast or slow a piece of music is played.  
Texture	Texture describes how melodies, rhythms and harmonies are layered in a piece of music. 
Timbre/ Sonority	Timbre (or sonority) describes the particular sound quality of an instrument or voice.   
Structure	Structure (or form) is the overall plan of a piece of music.  

It's Theory Time!

Note Values

This is a *Rhythm Tree* – it is designed to help you identify what the symbols for different note values are, and how they relate to one another. Here are the note values!

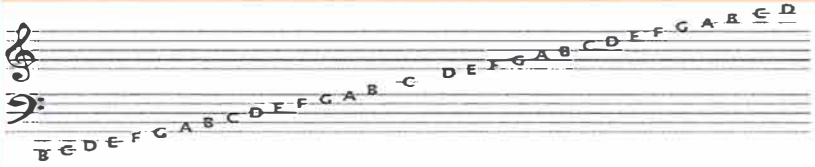
Semibreve = 4 beats
Minim = 2 beats
Crotchet = 1 beat
Quaver = ½ beat
Semiquaver = ¼ beat



Notes on the Stave

Here are the notes of the **treble** (top line) and **bass** (bottom line) clefs. When the notes fall outside the five lines of music paper, we add extra lines called **ledger** lines. Here are some phrases to help you remember where the notes go!

Treble Clef Lines: Every Green Bus Drives Fast
Treble Clef Spaces: F A C E (in the space!)
Bass Clef Lines: Green Buses Drive Fast Always
Bass Clef Spaces: All Cows Eat Grass



MUSIC: ELEMENTS, ORCHESTRA & OPERA

★ KNOWLEDGE ORGANISER ★

THE MUSICAL ELEMENTS

The building blocks of music. Composers use these elements to create mood, describe ideas and engage the listener.

MELODY
The main tune of a piece of music. It is what we often sing or remember.

HARMONY
The combination of different notes played at the same time (chords). It supports the melody and creates mood.

RHYTHM
The pattern of long and short sounds and silences in music.

TEMPO
The speed of the music.
e.g. Adagio (slow) • Andante (walking pace) Allegro (fast) • Presto (very fast)

DYNAMICS
The volume of the music.
e.g. pianissimo (very quiet) to fortissimo (very loud)

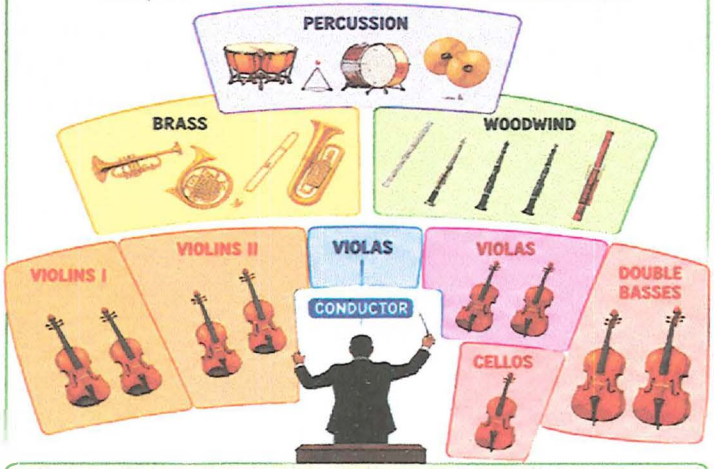
TONE COLOUR (TIMBRE)
The unique quality of sound made by different instruments and voices.

TEXTURE
The number of layers in the music and how they are combined.
e.g. Monophonic, Homophonic, Polyphonic

STRUCTURE
The organisation of a piece of music.
e.g. AB, ABA, Rondo, Theme and Variations

REMEMBER: These elements work together to create expression, emotion and meaning in music.

THE ORCHESTRA: LAYOUT



The conductor leads the orchestra, setting the tempo and helping musicians play together.

THE ORCHESTRA: INSTRUMENT FAMILIES

STRINGS
Played with a bow or plucked. They create melody, harmony and warmth.
e.g. Violins, Violas, Cellos, Double Basses, Harps

WOODWIND
Players blow across or into the instrument. Often play melody and counter-melody.
e.g. Flute, Oboe, Clarinet, Bassoon

BRASS
Players buzz their lips into a mouthpiece. They are loud and powerful.
e.g. Trumpet, French Horn, Trombone, Tuba

PERCUSSION
Played by striking, shaking or scraping. They add rhythm, effects and power.
e.g. Timpani, Snare Drum, Cymbals, Xylophone

OPERA: STYLE & FEATURES

Opera is a dramatic art form where the story is told through singing, acting and music, usually with an orchestra.

KEY FEATURES

- Sung throughout – no speaking (aria, recitative, chorus).
- Dramatic storylines – often love, tragedy or heroism.
- Large-scale sets and costumes to create atmosphere.
- Orchestra provides mood, support and action.
- Uses musical elements to express emotion and build tension.
- Different voice types: Soprano, Mezzo-Soprano, Tenor, Baritone, Bass.

TYPES OF OPERA

OPERA SERIA
Serious themes, often based on mythology or history. Grand and formal.
e.g. "Julius Caesar" by Handel

OPERA BUFFA
Comic opera with funny characters and stories from everyday life.
e.g. "The Barber of Seville" by Rossini

GRAND OPERA
Spectacular and dramatic with large casts, choruses and big staging.
e.g. "Aida" by Verdi

FAMOUS OPERAS & COMPOSERS

The Magic Flute – W.A. Mozart
A fairy tale with magical elements and a mix of serious and comic moments.

La Traviata – Giuseppe Verdi
A tragic love story full of beautiful arias and emotional music.

Madama Butterfly – Giacomo Puccini
A tragic story of love and loss set in Japan.

KEY VOCABULARY

Aria – a solo song expressing a character's thoughts.
Recitative – a singing style used to move the story on.
Chorus – a group of singers.
Orchestra – a large group of musicians.
Conductor – the person who leads the orchestra.
Score – the written music for all the parts.
Composer – someone who writes music.

WHY IT MATTERS

Understanding the musical elements, how an orchestra is arranged and the features of opera helps us to listen, appreciate and perform different styles of music with confidence.

Hooks & Riffs Knowledge Organiser — Year 7 Music

Hook	A 'musical hook' is usually the 'catchy bit' of the song that you will remember. It is often short and used and repeated in different places throughout the piece. 
Melodic Hook	A hook based on the instruments and the singers.  
Rhythmic Hook	A hook based on the patterns in the drums and bass parts.  
Verbal/Lyrical Hook	A hook based on the rhyming and/or repeated words of the chorus. 
Riff	A repeated musical pattern often used in the introduction and instrumental breaks in a song or piece of music. **Riffs** can be rhythmic, melodic or lyrical, short and repeated. 
Ostinato	A repeated musical pattern. The same meaning as the word **riff**, but used when describing repeated musical patterns in *Classical* and some *World music*. 
Bassline	The lowest pitched part of the music often played on bass instruments such as the bass guitar or double bass. **Riffs** are often used in **basslines**. 
Melody	The main "tune" of a song or piece of music, played higher in pitch that the **bassline** and it may also contain **riffs** or **hooks**. In **Classical Music**, the melody line is often performed with an **ostinato** pattern below. 

Go the extra mile - spot the riff!

Can you spot the hooks, riffs or ostinatos in the following pieces of music? Search them on YouTube/Spotify and find out!

Queen	We Will Rock You
One Direction	What Makes You Beautiful
The White Stripes	Seven Nation Army
Guns 'n Roses	Sweet Child o' mine
Purcell	Dido's Lament
Stevie Wonder	Superstition
Anon.	Sumer is Icumen in
Pachelbel	Canon in D

Skills Check

Can you perform the following ostinatos accurately? Clap them to a friend or your music teacher to check!