ORMISTON SWB ACADEMY

Knowledge Organisers
Spring Term – Year 8

Name: _____

Please remember:

- It is to be kept inside your knowledge organiser book
- It is to be brought into school every day

Regular retrieval throughout a scheme of learning (daily, weekly and monthly) has been proven to **reduce the rate of forgetting**, supporting you to **retain more** in long term memory- making assessments/ exams way easier! The challenge for you as a student is to make sure you use your knowledge organiser for each subject properly to help you to know more and remember more over time. We've created this walk through to support you in using your knowledge organiser- for more support speak to your subject teachers.

Using your Knowledge Organiser

1	2	3	4	5
Look	**Cover**	**Write**	**Check**	**Repeat**
Start with a **small section of knowledge** that you want to remember *e.g Henry VIII's wives in History.* Read through this section of the knowledge organiser (a couple of times if it helps)	Now **cover up this section** of your knowledge organiser with a post it note or scrap paper.	**Self quiz- what can you remember** and rewrite? Make sure you do this without looking back at your knowledge organiser.	**Remove the post it and check for accuracy**- did you get the key terminology? Was it spelt correctly? Was the order correct? If you drew a diagram, how much of this did you get correct? Most importantly- what did you miss out?	After a short break away from your knowledge organiser repeat the look, cover, write, check **until you can recall all of the facts correctly without prompts.** This process can be used for any new knowledge that you want to acquire. It is good idea to do this on a regular basis, once a week.

Strategy 1- Look, cover, write, check – A really simple but effective way to use your knowledge organiser. Focus on a specific area of your knowledge organiser.

1	2	3	4	5
Focus	**Big ideas**	**Explain it**	**Link it**	**Record it**
Make it manageable by selecting an area of your KO where your learning is not secure. Don't waste time going off something you can already do!	Pick out the main points or the **big ideas** in this section.	**Explain what you know** about the main points (this could be written or shared verbally – a friend, a family member.	Now, see **how it links to other areas** within the subject. *E.g Eating meat – causes global warming. Cows produce methane which is a greenhouse gas.*	**Write down as many 'think it, link it' ideas** as you can in your book. See if you can beat others in you class!

Strategy 2- Think it, link it – Great for connecting the big ideas in your subject. How does 'x' relate to 'y'. What are the key factors which make an equation/ experiment/ process work? Challenge yourself to see how many links you can make!

1	2	3	4	5
Select topic	**Prepare quiz**	**Answer it**	**Self check**	**Repeat**
Decide **which area you want to be quizzed** on (this might build up over time)	Get someone else to **prepare 10 random questions** on that topic to challenge you.	**Set a time limit** (depending on the number of questions) and answer the questions without looking at your KO.	Now look at your KO to **self check**- make a note of your score. Celebrate your successes and make a note of anything you missed or got incorrect.	**Return to this section** in 2/3 weeks- see if you can improve your score! Re-do those questions that you missed or got incorrect.

Strategy 3- Knowledge quiz – You might try this after a few weeks of using your knowledge organiser. Get someone to set you 10 questions using your knowledge orgainser. These could be spellings, key words, processes, equations etc to see how much you can remember! Record your score and see if you can beat your personal best each half term!22

Contents Page

Year 8 – English – The Tempest – Plot and Key Quotations

Act 1

1. King Alonso and his friends are caught in a tempest (a) at sea.
2. Prospero informs the islanders that he caused the storm. Then, Prospero tells Miranda about their past memories of her childhood and his betrayal (b).
3. Ariel, Prospero's servant, reports that he has scattered the survivors on various parts of the island. Prospero and Caliban argue.
4. Suddenly, Ferdinand and Miranda instantly fall in love. Prospero demands that Ferdinand completes a set of tasks.

"in my false brother/Aw awaked an evil nature."

"abhorred (h) slave… vile race."

"This island's mine, by Sycorax my mother."

Act 2

1. Ariel puts all the ship's passengers to sleep except Antonio and Sebastian who plot to seize (k) King Alonso's crown.
2. Just as they are about to attack the sleeping King, Ariel wakes the party up who all leave in search of Ferdinand.
3. Trinculo and Stephano meet Caliban and give him wine. Caliban drunkenly worships Stephano.

"My strong imagination sees a crown dropping upon thy head."

"A plague upon the tyrant that I serve!"

"I'll show thee every fertile inch o' th' island; And I will kiss thy foot."

Act 3

1. Ferdinand and Miranda declare their love and agree to marry although Ferdinand is still enslaved (c) by Prospero.
2. Caliban, Trinculo and Stephano plot to kill Prospero with Caliban promising that Stephano can marry Miranda. Ariel overhears and reports the plan to Prospero.
3. A banquet appears in front of the royal party, but, as they are about to eat, Ariel appears as a harpy(d) and accuses King Alonso, Antonio and Sebastian of being criminals.

"I am your wife, if you will marry me./If not, I'll die your maid."

"Be not afeared, The isle is full of noises, Sounds, and sweet airs."

"You are three men of sin (e), whom Destiny (i) this lower world…"

Act 4

1. Prospero arranges the marriage of Miranda and Ferdinand, but halts the masque (f) as he remembers Caliban's plan.
2. Prospero tells Ariel to tempt the men with garish (g) clothes and sends spirits after them. Prospero promises to free Ariel soon.

"help to celebrate a contract of true love."

"…my rich gift."

"Shortly shall all my labours end, and thou Shalt have the air at freedom."

Act 5

1. Prospero promises to give up magic.
2. The group arrive and Prospero forgives them but states Antonio must give up his claims on Prospero's ruling of Milan.
3. Prospero reveals to Alonso that Ferdinand is alive and married to Miranda.
4. The royal party are invited to spend the night while Ariel's final duty is to provide calm seas for them to set sail the next morning.

"I'll break my staff/ I'll drown my book."

"Thy dukedom I resign (j), and do entreat Thou Pardon me my wrongs."

"…your affections would become tender."

The Epilogue

"I must be here confined (l) to you."

"But release me from my bands with the help of your good hands."

Prospero's final speech:

Now my charms are all overthrown,
And what strength I have's mine own,
Which is most faint: now, 'tis true,
I must be here confined by you,

Or sent to Naples. Let me not,
Since I have my dukedom got
And pardon'd the deceiver (o), dwell
In this bare island by your spell;

But release me from my bands
With the help of your good hands:
Gentle breath of yours my sails
Must fill, or else my project fails,
Which was to please. Now I want
Spirits to enforce, art to enchant,
And my ending is despair (p),
Unless I be relieved by prayer,
Which pierces so that it assaults
Mercy itself and frees all faults.
As you from crimes would pardon'd be,
Let your indulgence set me free.

Year 8 – English – The Tempest – Context, Themes and Character map

Freedom and Colonialism

Prospero is sent away from Milan and trapped on the island. He then enslaves (c) Caliban and Ariel who are natives (m) to the island. Prospero promises to free Ariel and eventually acts upon this.

Justice and Forgiveness

Prospero attempts to seek justice (e)by regaining his rightful power from his brother Antonio. To conclude the play, Prospero embraces the Christian value of forgiveness before resuming his place as Duke of Milan.

Love

Miranda and Ferdinand fall in love at first sight and arrange to marry. Prospero, out of love for his daughter, makes Ferdinand prove his love. Family love is displayed through the concern parents have for their children.

The Supernatural

Prospero's thirst for knowledge about magic is what lost him his position as Duke of Milan. His cloak, books and staff symbolise his knowledge and power which is destroyed in Act 5. Prospero uses magic to control Ariel to commit a number of magical acts in the name of justice (e).

Characters

Caliban

Native (m) of the island. Enslaved (c) by Prospero.

hates

Ariel

Native (m) of the island. Enslaved (c) by Prospero.

helps

Prospero's family

Prospero

The rightful Duke of Milan

Gonzalo

Counsellor to Alonso. Provided aid to Prospero.

Antonio

Brother of Prospero.

Miranda

Daughter of Prospero

Ferdinand

Son of Alonso.

On island

plot to kill

A jester and a butler who serve

Stephano

Trinculo

Minor members of the shipwrecked party.

Shipwrecked party

Alonso

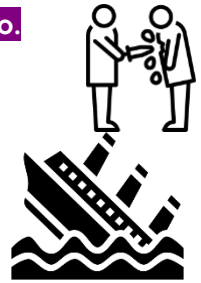
King of Naples.

Sebastian

Alonso's brother who plots to murder the king.

Ferdinand

Son of Alonso.



Context

A patriarchal society Society throughout the Middle Ages and at Shakespeare's time was patriarchal - women were considered to be below men. Women belonged to their fathers (or brothers if their fathers had died) and then their husbands.

The Colonial Era At the time the play was written, Shakespearean audiences would have been interested in the efforts of English (and other European) settlers to colonialise (n) distant lands around the world. These ideas are common in the play, as almost every man who sets foot on the island dreams of ruling it. Prospero's cruel treatment towards Caliban is similar to the behaviour of settlers to natives (m).

	Key terms	Definition
A	Tempest	A violent windy storm.
B	Betrayal	The act of deliberately being untrustworthy.
C	Enslaved	Causing someone to lose their freedom..
D	Harpy	A monster described as having a woman's head and a bird's body.
E	Justice	The act of gaining fair treatment.
F	Masque	Formal entertainment of the 16th and 17th century.
G	Garish	Colourful, detailed, patterned clothing.
H	Abhorred	To consider with disgust or hatred.
I	Destiny	The events that will happen to a particular person or thing in the future.
J	Resign	Leave something without force.
K	Seize	Take hold of something with force and suddenly.
L	Confined	Limited space or area.
M	Native	A person born on the land they currently live.
N	Colonialise	Establish political control over a place.
O	Deceive	Make someone believe something untrue.
P	Despair	Having no hope.
Q	Indulgence	To enjoy something you have desired.

Year 7 – English - Mastery Writing 2

Mastery Writing Two Rules

¶ Paragraph rules:

- New paragraphs start **two finger spaces** from the margin. All other lines start at the margin.
- This is called **indenting (h)** a paragraph.

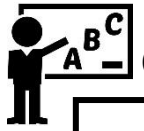
Tense rules:

- When you tell what **happened**, you put "ed" on the end of the action.
- When you put actions in the past simple, you say what happened, not what was happening.
- When you start with when it happened, you put a **comma** right after when it happened.
- You don't use a comma if when it happened is at the end.

¶ *As Benedict left his home, he was filled with joy. His mother had let him finally wear his new football boots. That afternoon, he returned home and his boots were ripped.*

Sentence and subject rules:

- If the next sentence uses the same **subject** (n)**(thing or person that the sentence is talking about)**, you should use a **pronoun (i)** to replace it.
- You can only use the **pronoun** (i) to replace a subject you have used in the sentence before.
- When you list two things a subject did in one sentence, **you only name the subject (n) once**.
- If there are two **objects** in a sentence, you **can't use it** in the next sentence.



Grammar and punctuation rules:

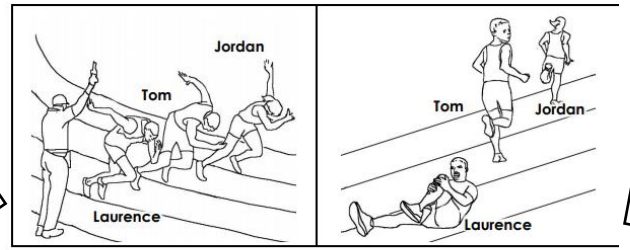
- If a person said more than one sentence, put everything they said inside the **'inverted commas'** (f).
- If the part that starts with 'although', 'unless' or 'if' is at the start of the sentence, it is followed by a comma

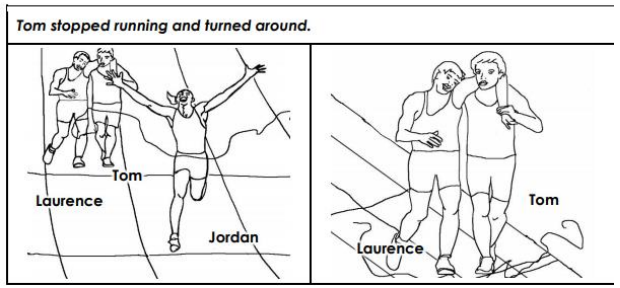
  e.g. Although Cerys did not receive the puppy she wanted for her birthday, she was grateful for all the other gifts she received.

Year 7 – English – Mastery Writing 2 – Story Writing Model Example.

You will receive a set of pictures like these. You will need to **practice your writing working on the rules** you've been doing in **that lesson, and the lessons before**.

You must include all the Mastery Checks.





I have **inferred** p) from the four boxes what the most likely set of events are and will write them into a story.

I have written in the **past tense.**

I have introduced my **main subject** (n).I have told the audience where they are.

I have structured my story in paragraphs. I have **indented** (h) my **paragraphs**.

I have written in **complete sentences (c).**

Aa

Tom, Jordan and Laurence had started to race each other. Tom and Jordan had begun to take the lead. Laurence tripped over his laces and fell onto the ground.

¶ Devastated, Laurence held his knee in agony. Just when he thought he was all alone, Tom turned around to help him up.

Although Jordan technically won the race, Laurence and Tom finished together and they won each other's friendship.

I have a **complication**(m) in my story.

I have used **verbs**(l) to show how my character is feeling.

I have **solved the problem**.

I have used **complex sentences** (d) throughout my work.

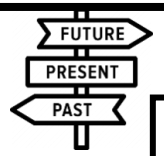
	Key terms	Definition
A	**Adjective**	A word which describes a noun: **Example:** sweet, short, bitter, stinky
B	**Adverb**	Describes a verb or adjective. An adverb answers how, where, when how much, how often. **E.g.: quickly, easy and never.**
C	**Complete Sentences**	A sentence which contains a subject and a verb. **Example:** She went to the shop
D	**Complex Sentences**	A sentence containing a subordinate clause
E	**Conjunctions**	A conjunction is a part of speech that connects words, phrases, or clauses. **Example:** for, and, but.
F	**Inverted commas**	The punctuation which indicates when speech has happened. " and ".
G	**Fused Sentences**	A sentence which has not used punctuation between the next subject. **Example:** She went to the shop she bought some milk.
H	**Indent**	Starting the first line of a paragraph further away from the margin than other paragraphs.
I	**Personal Pronoun**	A first person word which replaces a name, like "we, I" etc.
J	**Simple Sentences**	A sentence with one clause, one subject and one verb. **Example:** Jack likes fishing.
K	**Subordinate Clause**	A clause which does not make sense on its own. (e.g. 'when it rang' in 'she answered the phone when it rang').
L	**Verb**	A word which describes an action **Example:** read, write, drive, walk.
M	**Complication**	Something which causes a difficulty for a character.
N	**Subject**	The person or thing doing the verb in the sentence.
O	**Singular/plural**	Singular means one and plural means more than one.
P	**Infer**	When you work out information from the evidence you have.

Year 8 – English – Mastery Writing 3

Mastery Writing Three Rules

¶ Paragraph rules:

- New paragraphs start **two finger spaces** from the margin. All other lines start at the margin.
- This is called **indenting (h)** a paragraph.
- A new paragraph should start when there is a **change in: time, place topic or a new person/speaker begins to speak. (TiPToPS)**.



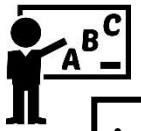
Tense rules:

- When you put actions in the past simple, you say what **happened**, not what was happening.
- When writing in the past tense, be careful to choose the **correct verb** to go with the subject. Not all verbs in the past simple end with 'ed'. E.g. The boy got <u>sent</u> home.

While Sally sat and wrote a lengthy letter, an abundance (a) of tears dropped on the page. From her office window, she noticed Travis's dog through a pane of glass although her glossy eyes impaired her vision.

Sentence and subject rules:

- Sentences must either be, or contain, an independent clause.
- An independent clause must have a **subject (m), a verb (l) and expresses a complete idea (c)** for it not to be a fragment (p).
- Phrases beginning with 'although', 'if', 'unless', 'even though', 'because' and 'whenever' are other forms of subordinate clauses (k).
- However, there are other subordinate clauses (k) that do not begin with these words. For example, '<u>Like a bullet</u> speeding through the air, he ran through the door'.
- If the **temporal clause (b)** is at the start of the sentence, a comma should follow. If the temporal clause is at the end of a sentence, no comma should follow.



Punctuation:

- When **two independent clauses** (c) are joined together by a comma (comma splice (g)), you should correct this by changing the comma to a full stop. Alternatively, **change the second independent clause into a subordinate clause (k)** to keep the comma. For example: 'Tom read the novel. His friend saw the movie' and 'Because Tom read the novel, his friend saw the movie.'
- Apostrophes of **omission (j)** replace the letter you have removed. E.g. <u>He's</u> the greatest dancer – <u>He is</u> the greatest dancer. You <u>must not use</u> an apostrophe to show that a noun is plural e.g. "the egg's", or the verb is in the third person e.g. "Barry walk's" – **this is incorrect.**
- If a **singular** (o) noun:
  - doesn't end in s, you add an 's e.g. Kate's cat.
  - ends in s, you still add 's e.g. James's cat, Dickens's writing.
  - ends in ss, you still add 's e.g. The princess's cat.
- If a **plural** (o) noun:
  - ends in s, you add ' e.g. The cats' dinner.
  - does not end in s, you add 's e.g. The people's voice.

Year 8 – English – Mastery Writing 3 – Story Writing Model Example.

You will receive a single picture like this. You will need to **practice your writing working on the rules** you've been doing in **that lesson and the lessons before**. Vocabulary will be provided to guide your narrative.

You must include all the Mastery Checks.

deafening	emergency	pressure	void
oxygen	mission	terror	perilous

Part 1: Opening	Part 2: Problem
Part 3: Solution	Part 4: Happy Ending

Write an **outline of your story** in the clear, **four-part structure**. You should think carefully about the different sections do what they are for. This narrative structure is for 'problem solved' stories. **Not all stories will follow this structure**.

¶ Aa As Jamila departed the International Space Station, she inhaled. Poised, she cleared her throat and informed her colleagues that she was prepared for the **perilous** task ahead. Jamila trained for years for her **mission** in locating the missing astronaut. She knew that if something went wrong, she had spirit on her side. On the edge of the platform, she looked out at the **void.** The quiet put her at peace. She knew Iris, her daughter, was proud.

¶ The **deafening** silence surrounded Jamila. Her only way out was to continue on. In that moment, she was alerted to a hissing sound. To Jamila's horror, she realised she was quickly losing **oxygen**. Wide eyed and overwhelmed by **terror**, she screeched out to her colleagues, "Please help. My **oxygen** tank is faulty!". Jamila closed her eyes and felt the strong rhythm of her heartbeat in her throat. Silence once again surrounded her. Confused and under **pressure** to survive, she noticed the International Space Station in the distance.

I have written in the **past tense throughout.**

I have introduced my **main subject (n)**. I have told the audience where they are.

I have used **Mastery vocabulary**.

I have used **complete sentences (c) throughout.**

I have a **problem** in my story and used **direct speech** to show this using **inverted commas (e)**.

I have followed the writing structure of a **problem solved story.** Each paragraph focuses on an element of the writing structure.

	Key terms	Definition
A	**Abundance**	A very large amount of something.
B	**Temporal clause**	A clause which informs the reader about the time when the action of main verb of the sentence occurred.
C	**Complete Sentences (idea)**	A sentence which contains a subject and a verb. Makes sense alone. **Example:** She went to the shop.
D	**Complex Sentences**	A sentence containing a subordinate clause (k) and a main clause.
E	**Inverted commas**	The punctuation which indicates when speech has happened. " and ".
F	**Fused Sentences**	A sentence which has not used punctuation between the next subject. **Example:** She went to the shop she bought some milk.
G	**Comma splice**	A **comma splice** is when two independent clauses are incorrectly joined by a **comma** to make one sentence.
H	**Indent**	Starting the first line of a paragraph further away from the margin than other paragraphs.
I	**Apostrophe of possession**	A punctuation mark that shows that one thing belongs to another. **"Mark's pen."**
J	**Apostrophe of omission**	A punctuation mark that is used to show two words have been combined into one.
K	**Subordinate Clause**	A clause which does not make sense on its own. (e.g. 'when it rang' in 'she answered the phone when it rang').
L	**Verb**	A word which describes an action **Example:** read, write, drive, walk.
M	**Subject**	The person or thing doing the verb in the sentence.
N	**Singular/plural**	Singular means one and plural means more than one.

Year 7 – Maths – Mastery: Unit 7 – Angles

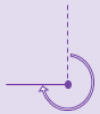
Measuring Turn

One way that we can interpret an angle is as a measure of **turn**.
How many degrees has the line segment turned through in each case?

360°
(a full turn anticlockwise)

90°
(A quarter turn anti-clockwise)

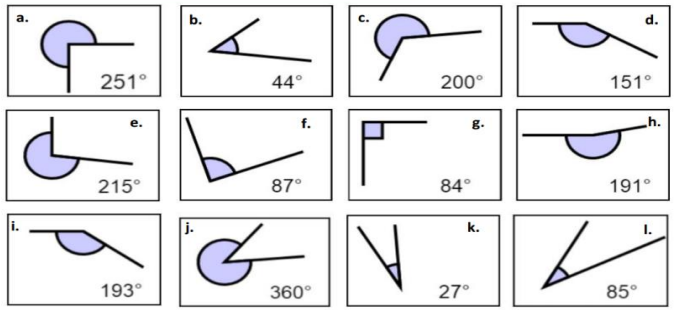
180°
a half turn clockwise



270°
clockwise
(Three quarters of a turn clockwise)

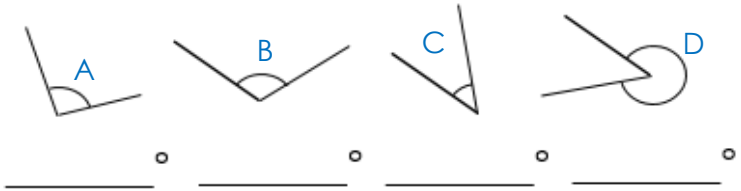
incorrectly estimated?

Which of these angles have been incorrectly estimated?



Write the incorrect estimations here: ___ ___ ___ ___ ___ ___

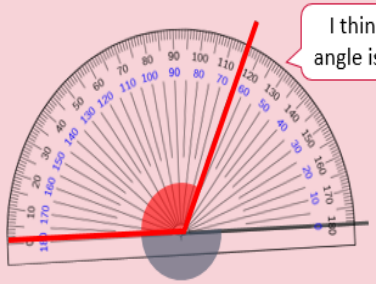
Comparing Angles



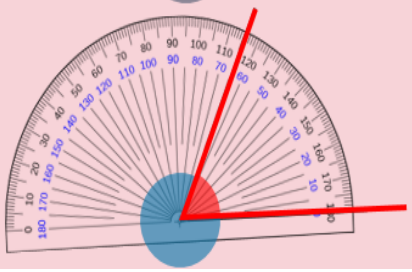
Estimate the size of each angle.
What type of angle is each?
Which is the smallest angle?
Place them in order of size.

Measurement Mistakes

Take care when measuring angles with a **protractor** - make sure you read the scale starting at zero.



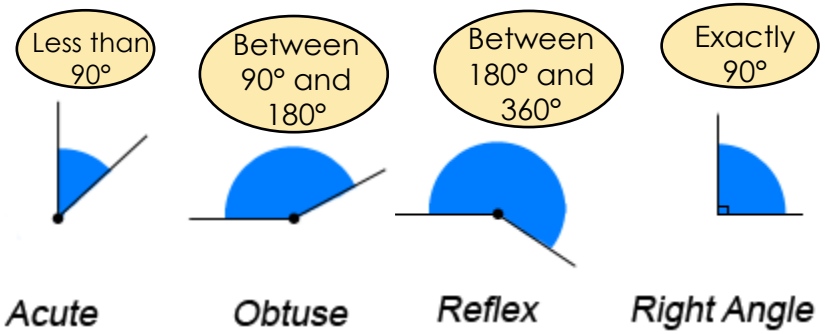
115° is the size of this obtuse angle. You can add an additional **180°**. The correct answer is **295°**.



65° is the size of this acute angle. You can subtract **65°** from 360°. The correct answer is **295°**.

Types of Angles

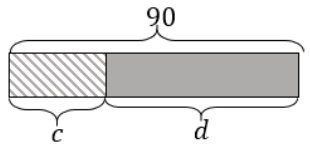
Deciding which type of angle you have helps when estimating its size and also helps you make sure you measured it correctly.

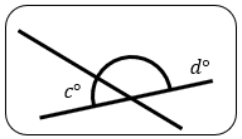


Partitioning known angles

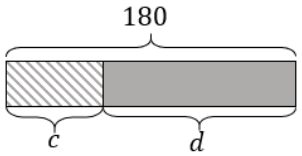
Connect each equation to the bar model and image.

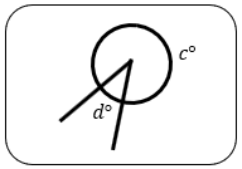
$c + d = 360$



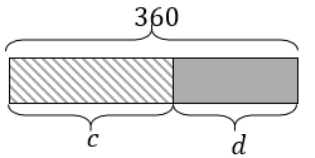


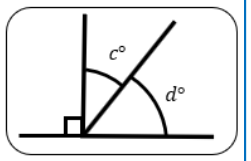
$90 - c = d$





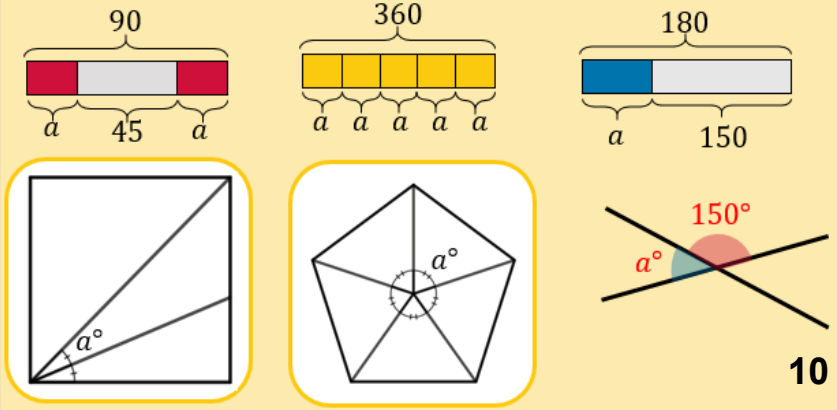
$180 = c + d$





You need to know that:
Angles that meet on a straight line sum to 180 °
Angles that meet at a point sum to 360 °

Making connections



Year 7 – Maths – Mastery: Unit 7 – Angles

parallel lines

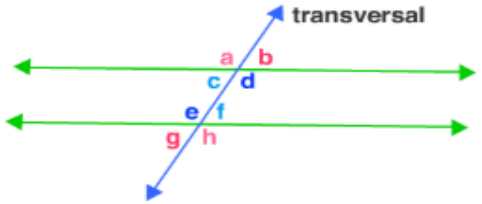
- lines that are always an equal distance apart.
- coplanar lines that do not intersect.

EXAMPLES:

parallel lines

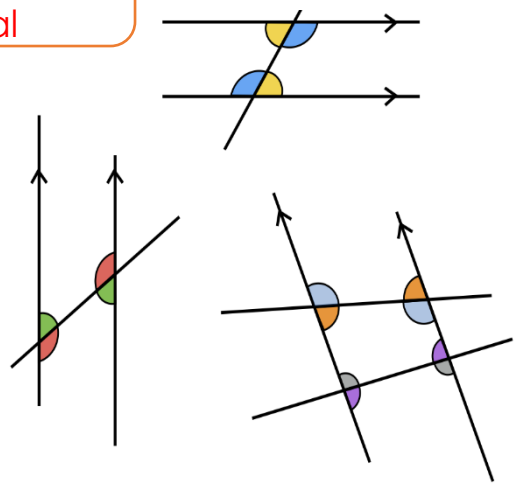
Parallel lines are equidistant, always the same distance apart … never touching

angles created by a transversal intersecting parallel lines



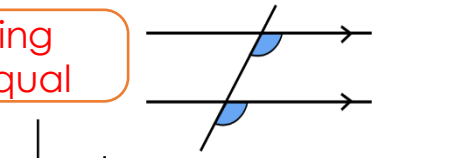
Intersection Points

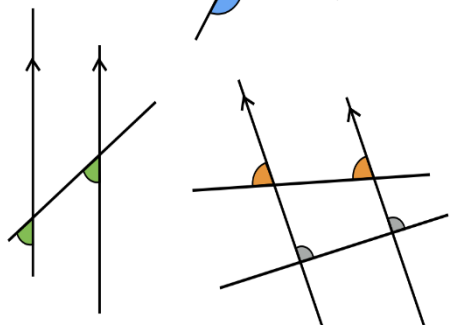
Alternate angles are equal



Pairs of alternate angles are shown in the same colour.

Corresponding angles are equal

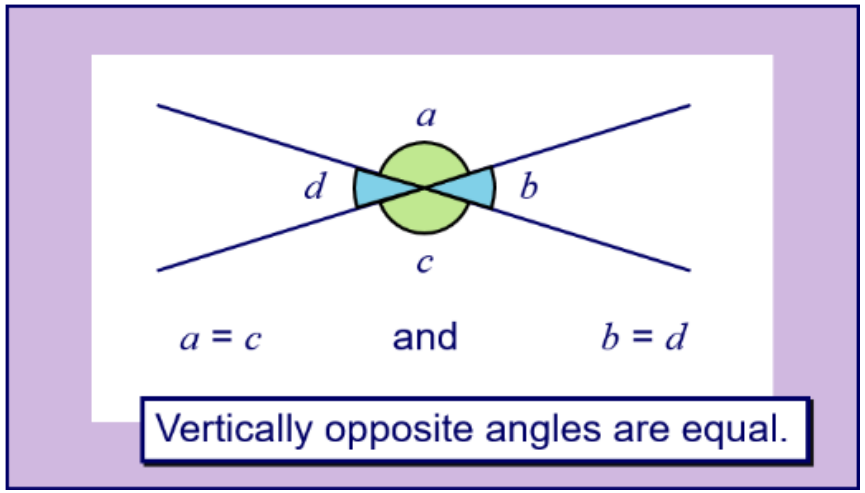




Pairs of corresponding angles are shown in the same colour.

Vertically Opposite Angles

When two straight lines intersect, two pairs of vertically opposite angles are formed.



Other Topics/Units this could appear in:

Working Towards:

Unit 5 – properties of shapes and simple angle facts

Unit 8 – mensuration

Crossover:

Unit 36 – Alternate & corresponding angles and applying other known angle facts.

Unit 37 – Interior and exterior angles of polygons.

Keyword/Skill	**Definition/Tips**
Angle	The amount of turn between two rays called arms meeting at a common point called vertex.
Vertically opposite	Pair of angles directly opposite to each other, formed by intersection of straight lines.
Reflex	Any angle that measures more than 180 degrees but less than 360 degrees.
Parallel	Equidistant lines, that is, exactly the same distance apart and never touching.
Partitioning	A strategy that splits numbers into smaller addends, factors or place value to make calculation easier.
Perpendicular	Meeting or crossing at a right angle.
Protractor	An instrument used to measure angles in degrees.
Adjacent Angles	Angles immediately next to each other.
Degrees	The unit of measuring the size of an angle.
Acute	Any angle that measures less than 90 degrees.
Obtuse	Any angle that measures between 90 degrees and 180 degrees.
Right angle	Any angle that measures exactly 90 degrees.

Year 7 – Maths – Mastery: Unit 12 – Transforming 2D Figures

Other Topics/Units this could appear in:
Year 9/10: Unit 46 - Congruence/Similar Shapes
Unit 47 - Transformations

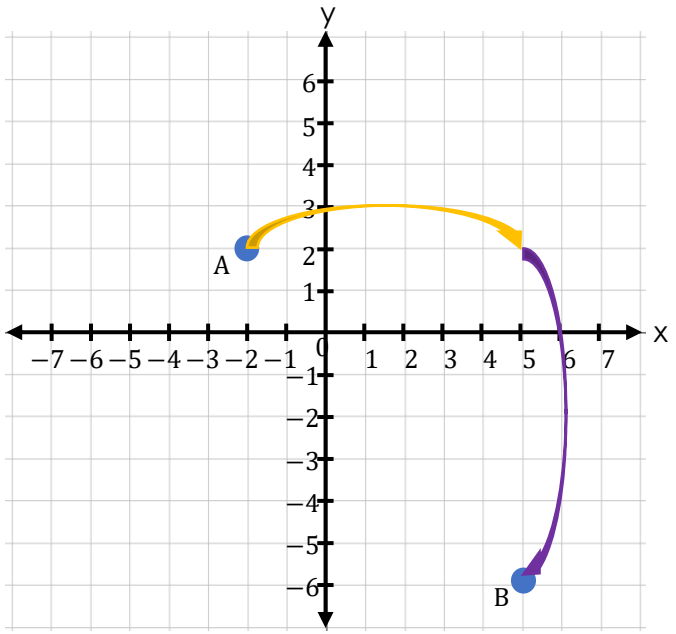
Translations

Translations are movements in a direction.
Column vectors can be used to describe translations.

7 units in the positive x-direction

From point A to point B the translation is: $\begin{pmatrix} 7 \\ -8 \end{pmatrix}$

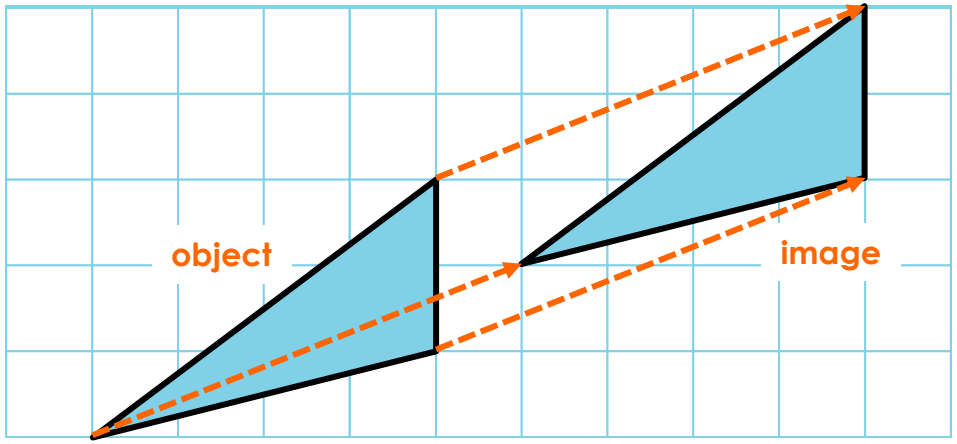
8 units in the negative y-direction



First count the number of squares moved in the x-direction and then count the number of squares moved in the y-direction.

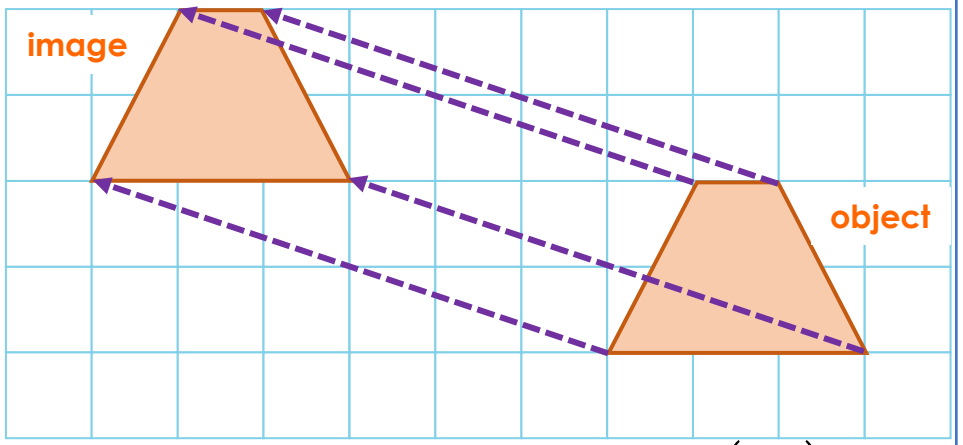
Translating a shape

When a whole shape is translated, every vertex moves by the **same** translation vector.



The translation vector from this object to its image is $\begin{pmatrix} 5 \\ 2 \end{pmatrix}$

Every vertex (corner) has moved by exactly the same column vector.



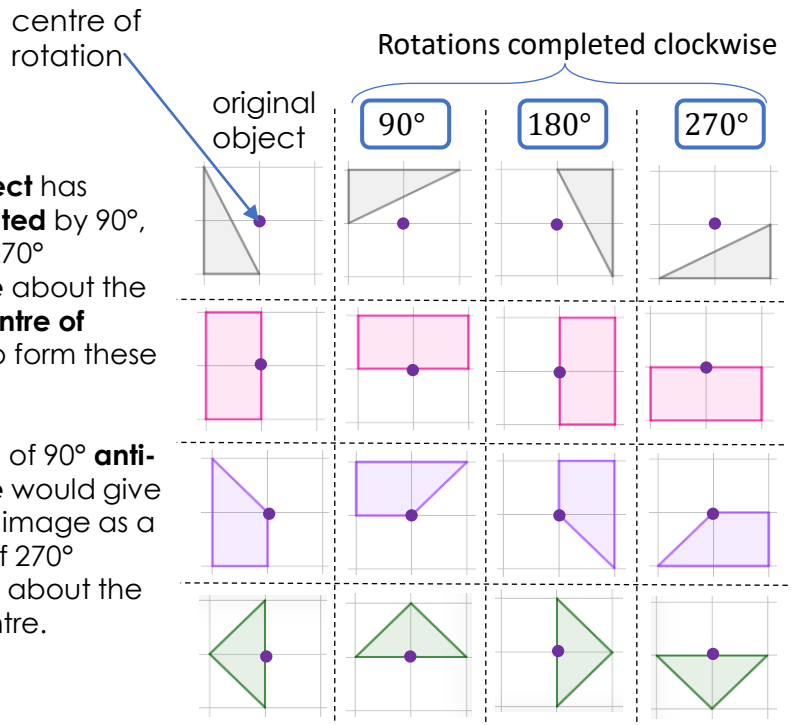
The translation vector from this object to its image is $\begin{pmatrix} -6 \\ 2 \end{pmatrix}$

Keyword/Skill	Definition/Tips
Polygon	2-D shape with straight sides and no curved sides.
Regular polygon	All the sides are exactly the same length, all the interior angles are exactly the same size.
Origin	The centre of the axes, where the x-axis and y-axis cross at the point with coordinates (0,0)
Similar	Shapes that are have the same angles, but the side lengths on one have been enlarged by a scale factor.
Congruent	Shapes that are exactly the same, but may be rotated (turned around) or reflected (flipped over).
Invariant point	A point on the original object which has not been affected by the transformation, so is in the same place on the image.
Object	The shape you start with when performing transformations.
Image	The finished shape you have after you have performed any transformations.
Describe	State exactly what **single** transformation has been performed on a shape.

Year 7 – Maths – Mastery: Unit 12 – Transforming 2D Figures

Rotations

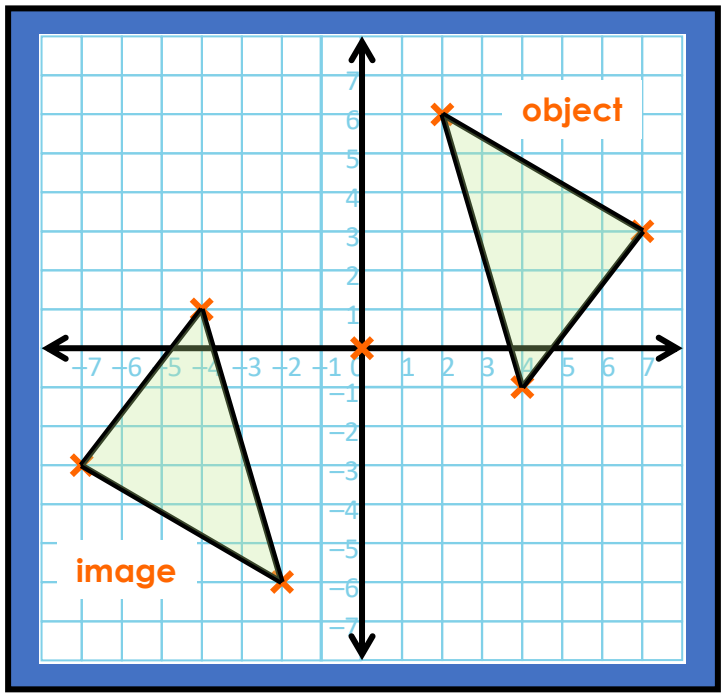
Rotations are turns around a point, which is called the **centre of rotation**.



Each **object** has been **rotated** by 90°, 180 and 270° **clockwise** about the purple **centre of rotation** to form these **images**.

A rotation of 90° **anti-clockwise** would give the same image as a rotation of 270° clockwise about the same centre.

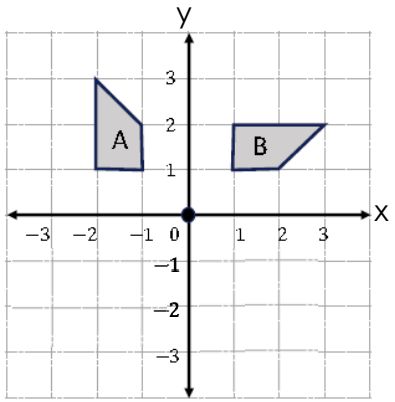
This object has been rotated about the origin by 180°. The direction does not matter because 180° is a half turn, and a half turn clockwise has the same effect as a half turn anti-clockwise.



When we describe this type of transformation, we state that from A to B is:

- A rotation
- From centre (0,0)
- By 90° clockwise

We must always give all three pieces of information to fully describe a rotation.



Other Topics/Units this could appear in:
Year 9/10: Unit 46 - Congruence/Similar Shapes
Unit 47 - Transformations

Keyword/Skill	Definition/Tips
Polygon	2-D shape with straight sides and no curved sides.
Regular polygon	All the sides are exactly the same length, all the interior angles are exactly the same size.
Origin	The centre of the axes, where the x-axis and y-axis cross at the point with coordinates (0,0)
Similar	Shapes that are have the same angles, but the side lengths on one have been enlarged by a scale factor.
Congruent	Shapes that are exactly the same, but may be rotated (turned around) or reflected (flipped over).
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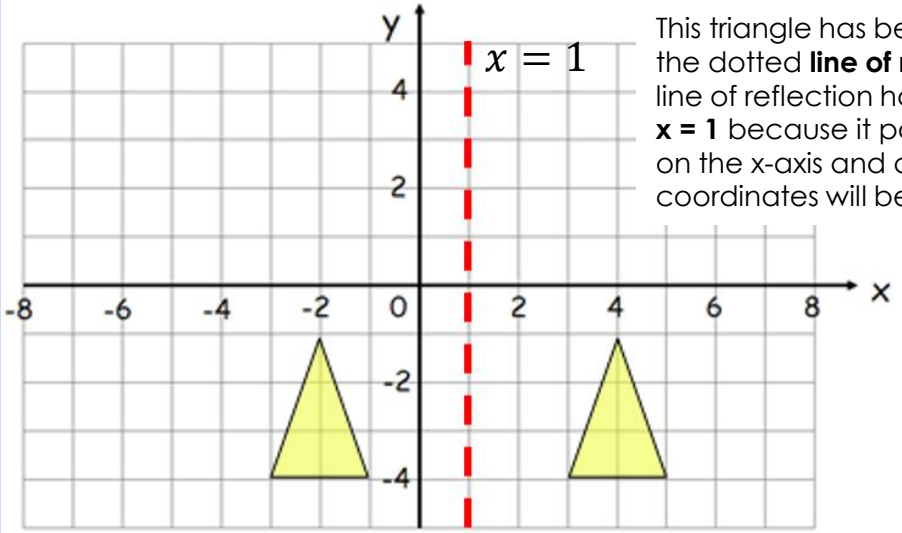
Image	The finished shape you have after you have performed any transformations.
Describe	State exactly what single transformation has been performed on a shape.

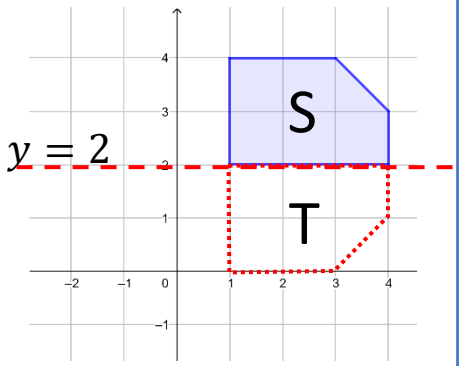
Year 7 – Maths – Mastery: Unit 12 – Transforming 2D Figures

Reflections flip an object, but its size and shape remain the same. The mirror line is called the **line of reflection**.



This triangle has been **reflected** in the dotted **line of reflection**. The line of reflection has the equation **x = 1** because it passes through 1 on the x-axis and all its x-coordinates will be 1.

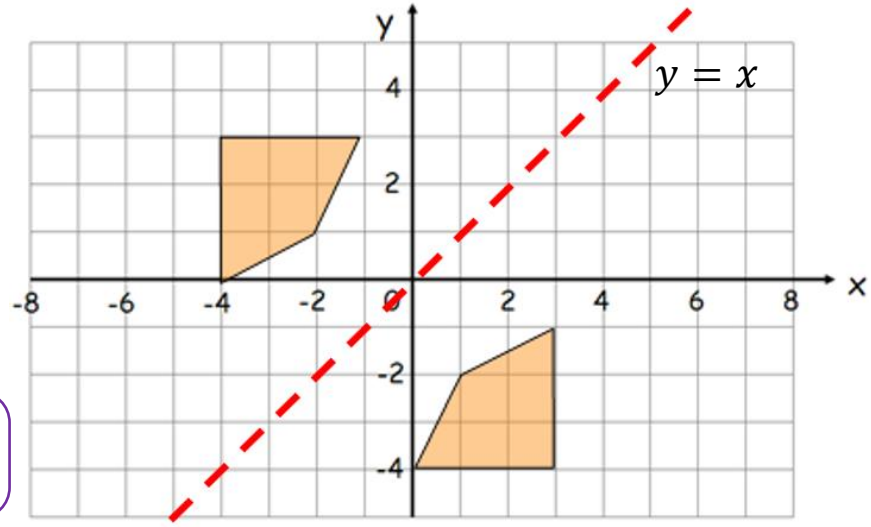
Reflections



This shape has been **reflected** in the dotted **line of reflection**. The line of reflection has the equation **y = 2** because it passes through 2 on the y-axis and all its y-coordinates will be 2.

Diagonal lines of reflection

This shape has been **reflected** in the dotted **line of reflection**. The line of reflection has the equation **y = x** because it passes through the origin and all its pairs of coordinates will have matching x and y values, such as (1,1), (2,2), (-4,-4)…



There are two diagonal lines you need to know. They are:
y=x (shown on the diagram)
and y = -x (slopes the opposite direction)

Other Topics/Units this could appear in:
Year 9/10: Unit 46 - Congruence/Similar Shapes
Unit 47 - Transformations

Keyword/Skill	Definition/Tips
Polygon	2-D shape with straight sides and no curved sides.
Regular polygon	All the sides are exactly the same length, all the interior angles are exactly the same size.
Origin	The centre of the axes, where the x-axis and y-axis cross at the point with coordinates (0,0)
Similar	Shapes that are have the same angles, but the side lengths on one have been enlarged by a scale factor.
Congruent	Shapes that are exactly the same, but may be rotated (turned around) or reflected (flipped over).
Invariant point	A point on the original object which has not been affected by the transformation, so is in the same place on the image.
Object	The shape you start with when performing transformations.
Image	The finished shape you have after you have performed any transformations.
Equidistant	Two points are the same distance away from the line of reflection.

Year 7 – Maths – Mastery: Unit 12 – Transforming 2D Figures

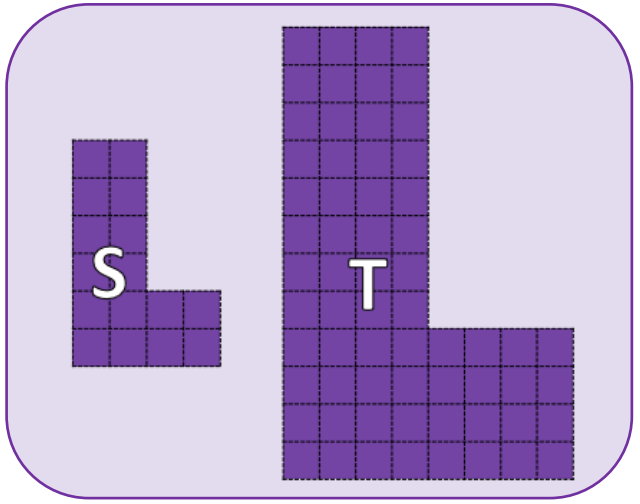
Other Topics/Units this could appear in:
Year 9/10: Unit 46 - Congruence/Similar Shapes
Unit 47 - Transformations

Enlargements

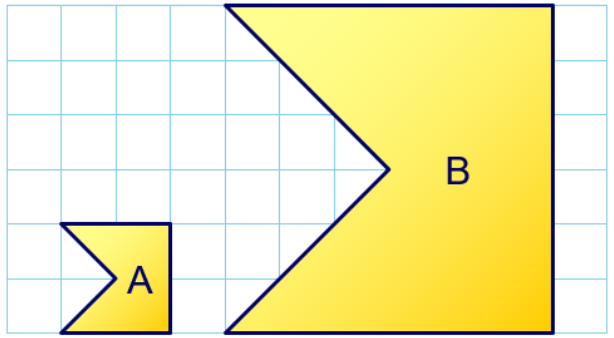
Enlargements make the object bigger or smaller.
Scale factors tell us how much bigger or smaller.

S is an enlargement of T by scale factor $\frac{1}{2}$

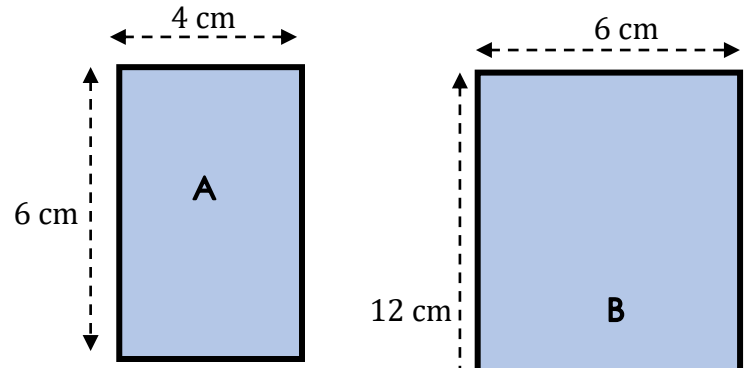
T is an enlargement of S by scale factor 2



A is an enlargement of B by scale factor $\frac{1}{3}$



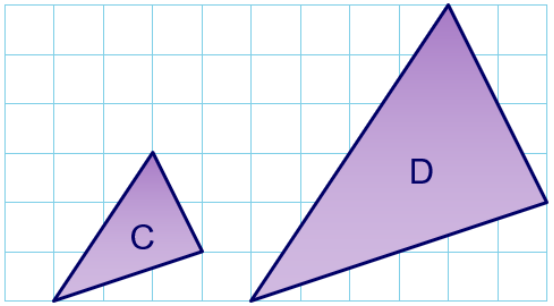
B is an enlargement of A by scale factor 3



B is not an enlargement of A because the side lengths have not been increased by the same scale factor. The scale factor must be exactly the same for all lengths.

C is an enlargement of D by scale factor $\frac{1}{2}$

Even when the scale factor makes a shape smaller, the transformation is still called an enlargement.



D is an enlargement of C by scale factor 2

Keyword/Skill	Definition/Tips
Polygon	2-D shape with straight sides and no curved sides.
Regular polygon	All the sides are exactly the same length, all the interior angles are exactly the same size.
Origin	The centre of the axes, where the x-axis and y-axis cross at the point with coordinates (0,0)
Similar	Shapes that are have the same angles, but the side lengths on one have been enlarged by a scale factor.
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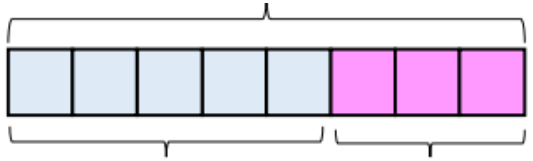
Invariant point	A point on the original object which has not been affected by the transformation, so is in the same place on the image.
Object	The shape you start with when performing transformations.
Image	The finished shape you have after you have performed any transformations.
Equidistant	Two points are the same distance away from the line of reflection.

Year 8 – Maths – Mastery: Unit 6 – Ratio Review

Representing a Ratio

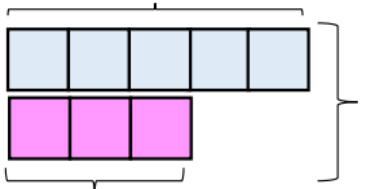
"For every 5 boys there are 3 girls" → 5 : 3

This is the "whole" – boys and girls together



This represents the 5 boys This represents the 3 girls

This represents the 5 boys



This is the "whole" – boys and girls together

This represents the 3 girls

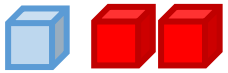
Order is Important

"For every dog there are 2 cats"
Dogs : Cats

The ratio has to be written in the same order as the information given.

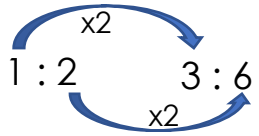
E.g. 2 : 1 would represent 2 dogs for every 1 cat

In The Same Ratio



The ratio of blue cubes to red cubes is **1 : 2**

If we have 3 blue cubes, to keep it in the same ratio as **1 : 2** we need double the amount of blue cubes. That means 6 red cubes are needed

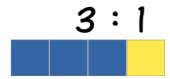
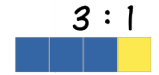


Equivalent Ratios

2 : 3

4 : 6

These strips show that each ratio is equivalent as the same area of each strip is gold and silver.

Keyword/Skill	Definition/Tips
Ratio	Ratio compares the size of **one part** to **another part**. Written using the ':' symbol. 
Proportion	Proportion compares the size of one part to the size of the whole. In a class with 13 boys and 9 girls, the proportion of boys is $\frac{13}{22}$ and the proportion of girls is $\frac{9}{22}$
Share	Split or divide.
Parts	One cube in the bar model represents one part.
Direct Proportion	As one amount increases, another amount increases at the same rate.
Inverse Proportion	When one value **decreases** at the same rate that the other increases.
Bar Model	A picture (usually a bar) to represent a known or unknown number 
Enlargement	Make the object bigger or smaller
Constant of Proportionality	The constant value relating to amounts that rise or fall at the same rate together

Other Topics/Units this could appear in:

- Ratio & Proportion
- Direct and inverse proportion

Year 8 – Maths – Mastery: Unit 6 – Ratio Review

It may help you to look through **Y7 Mastery: Unit 12 – Transforming 2D Figures knowledge organiser** before starting this

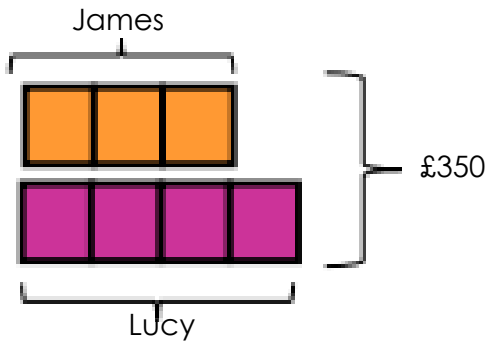
Sharing a Whole into a Given Ratio (a:b)

James and Lucy share £350 in the ratio 3 : 4. Work out how much each person earns.

Model the Question

James Lucy

3 : 4

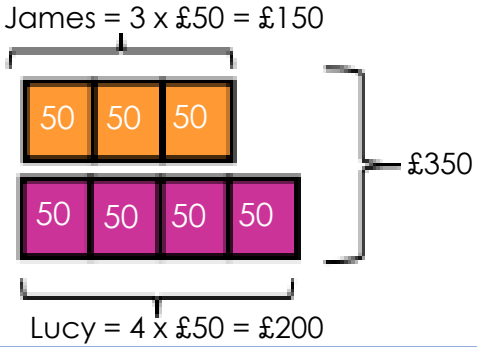


Find the Value of One Part

Whole £350
7 parts to share between
(3 James, 4 Lucy)
£350 ÷ 7 = £50

□ = one part
= £50

Put Back into the Question



James Lucy

3 : 4

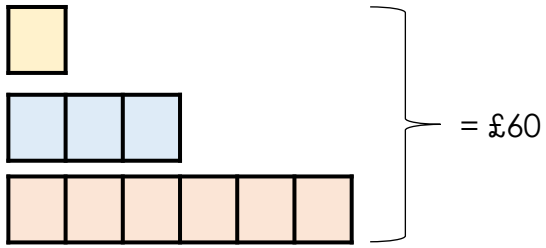
x50 x50

£150 : £200

Sharing a Whole into a Given Ratio (a:b:c)

For dividing a quantity into three parts, we can use the same method as above. Here we will have three sets of bars.

Example:
Charlie wants to divide £60 between three charities in the ratio 1 : 3 : 6



Altogether there is £60.
There are 10 parts altogether.
1 part = £60 ÷ 10 = £6

Each charity gets:

1	:	3	:	6
x6		x6		x6
6	:	18	:	36

Keyword/Skill	Definition/Tips
Ratio	Ratio compares the size of **one part** to **another part**. Written using the ':' symbol. 3 : 1
Proportion	Proportion compares the size of one part to the size of the whole. In a class with 13 boys and 9 girls, the proportion of boys is $\frac{13}{22}$ and the proportion of girls is $\frac{9}{22}$
Share	Split or divide.
Parts	One cube in the bar model represents one part.
Direct Proportion	As one amount increases, another amount increases at the same rate.
Inverse Proportion	When one value **decreases** at the same rate that the other increases.
Bar Model	A picture (usually a bar) to represent a known or unknown number 3 : 1
Enlargement	Make the object bigger or smaller
Constant of Proportionality	The constant value relating to amounts that rise or fall at the same rate together

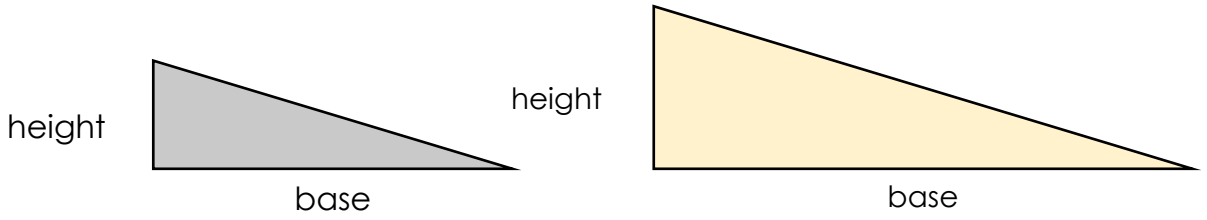
Other Topics/Units this could appear in:
- Ratio & Proportion
- Direct and inverse proportion

Year 8 – Maths – Mastery: Unit 6 – Ratio Review

It may help you to look through **Y7 Mastery: Unit 12 – Transforming 2D Figures knowledge organiser** before starting this

Enlargement & Constant of Proportionality

The larger blue triangle is an enlargement of the smaller yellow triangle.



The constant of proportional helps us calculate the corresponding sides.

base	height
4cm	2cm
6cm	2cm

Constant of proportionality
x 2
x 3

base	height
8cm	4cm
18cm	6cm

We can figure this out by comparing the ratios of each triangle.

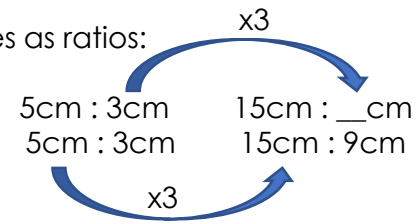
Example:

base	height
5cm	3cm

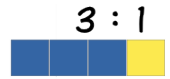
Constant of proportionality
x ___

base	height
15cm	__cm

Comparing the sides as ratios:



Looking at the corresponding sides, you can see the constant of proportionality would be x3.

Keyword/Skill	Definition/Tips
Ratio	Ratio compares the size of **one part** to **another part**. Written using the ':' symbol. 
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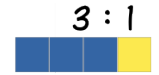
Direct Proportion	As one amount increases, another amount increases at the same rate.
Inverse Proportion	When one value **decreases** at the same rate that the other increases.
Bar Model	A picture (usually a bar) to represent a known or unknown number 
Enlargement	Make the object bigger or smaller
Constant of Proportionality	The constant value relating to amounts that rise or fall at the same rate together

Other Topics/Units this could appear in:

- Ratio & Proportion
- Direct and inverse proportion

Year 8 – Maths – Mastery Unit 7 – Real Life Graphs and Rates of Change

Pricewise Graphs

The graph below displays Tariq's Taxis deal

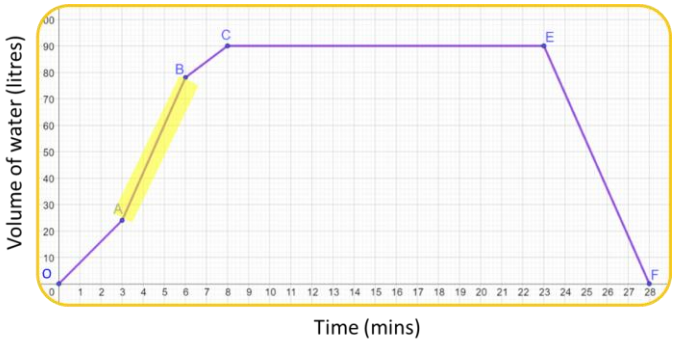
£1.50 call out fee means the minimum cost of the taxi is £1.50

£1 per km for the first 5 km is shown in blue

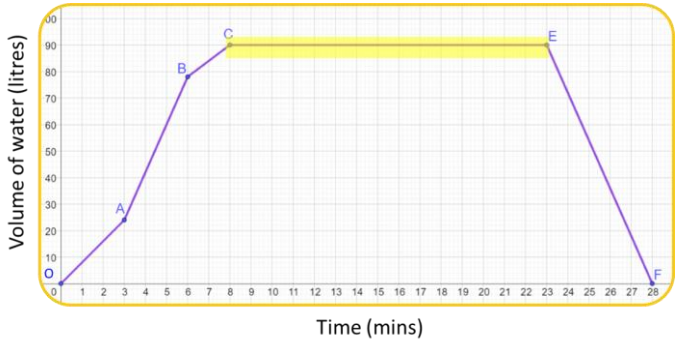
80p for every km after that means a flatter slope

Understanding graphs

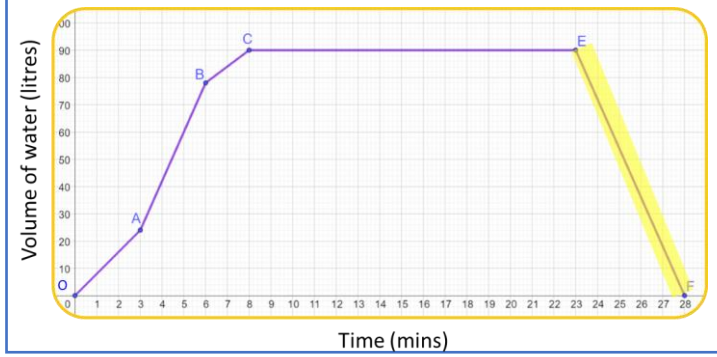
The graph shows how much water was in a bath over a period of time.



1) Highlighted section shows when the bath is being **filled the fastest**



2) Highlighted section shows the period of time when the bath is **not being filled or emptied**



3) Highlighted section shows the period of time when the bath is **being emptied**

Keyword/Skill	Definition/Tips
Linear	Relating to a line; in a straight direction.
Graph	A drawing or a diagram to record information.
Distance	The length between two points or objects.
Time	Continuum of past to present to future. Measured in seconds, minutes, hours etc.
Coordinate	Shown as pairs of letters and/or numbers to show position on graph (x, y).
Gradient	How steep a line is.
Speed	Is how fast something moves

Other Topics/Units this could appear in:

- Drawing and Interpreting tables/charts
- Straight line graphs
- Graphs of trig functions
- Gradient & Area under graphs
- Mechanics

Year 8 – Maths – Mastery Unit 7 – Real Life Graphs and Rates of Change

Speed

Speed is a compound measurement combining **distance** and **time**

Example

A car travels **120 miles** in **2 hours and 30 minutes**. Calculate the average **speed** of the car in **mph**.

The units of **speed** are **miles per hour** so the **distance** must be in **miles** and the **time** must be in **hours**.

Distance = 120 miles
Time = 2.5 hours

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

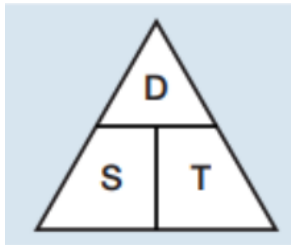
$$\text{Speed} = \frac{120}{2.5}$$

$$\text{Speed} = 48\text{mph}$$

The formula triangles can be used to help rearrange this equation to calculate distance or time.

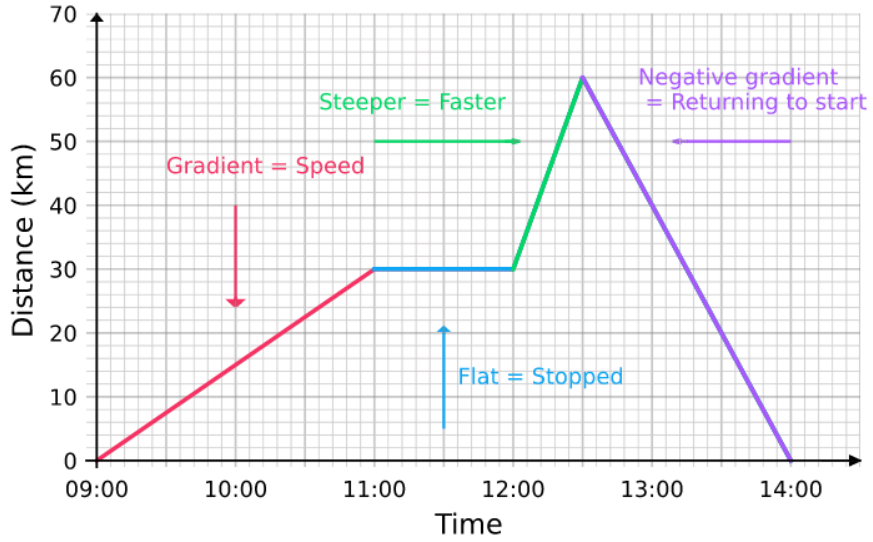
Speed

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$



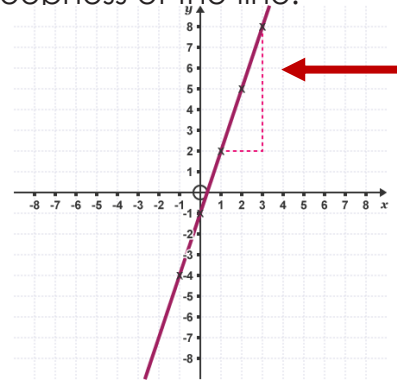
Distance – Time Graphs

A speed-time graph shows the speed and direction an object travels over a specific period of time.



Gradient of a straight line

The gradient of a straight line describes the slope or steepness of the line.



The triangle goes from 2 to 8 on the y-axis, so has a height of 6. It goes from 1 to 3 on the x-axis, so has a width of 2.

$$Gradient = \frac{6}{2} = 3$$

Keyword/Skill	Definition/Tips
Linear	Relating to a line; in a straight direction.
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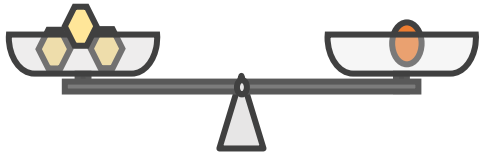
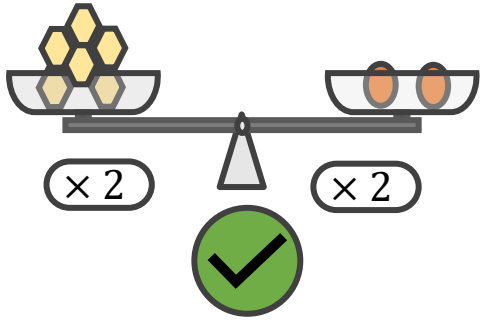
Year 8 – Maths – Mastery Unit 8 – Direct & Inverse Proportion

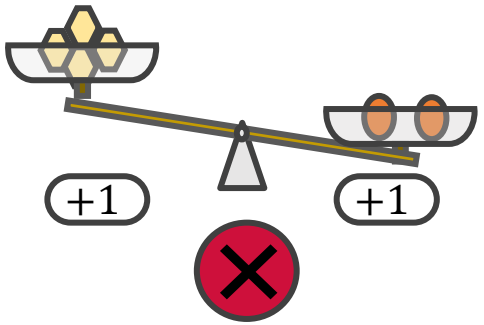
Proportionality



These two quantities are balanced, therefore they are equal.



I can find other quantities that are balanced by scaling each quantity.



If I add or subtract each side by the same quantity it is not balanced.

These relationships are called **multiplicative relationships** and the two quantities are **directly proportional**. This means there is a number we can multiply by to convert the measure.

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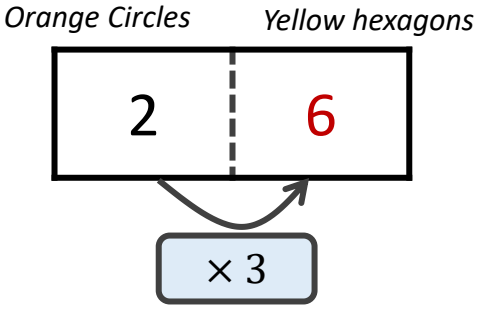

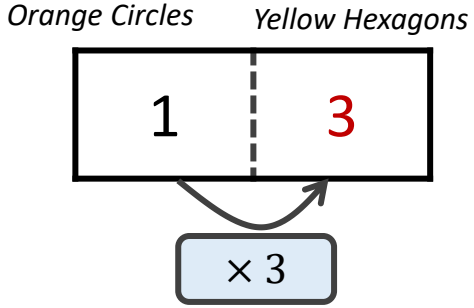

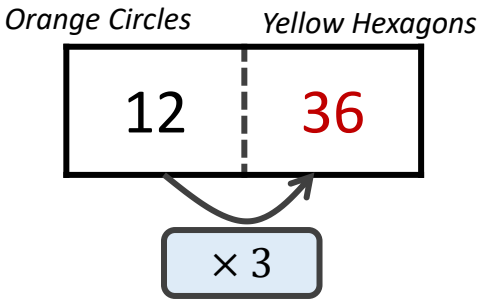

Keyword/Skill	Definition/Tips
Ratio	Shows the relative sizes of two or more values. E.G. 1 boy and 3 girls would be written as 1:3
Inverse	The opposite or the reverse E.g. the inverse of addition is subtraction.
Proportion	Two ratios or fractions that are equal.
Direct Proportion.	Two quantities change in the same way. When one increases or decrease, so does the other one.
Equation	Says that two things are the equal. (1+1=2).
Linear	A graph that has a straight line.
Substitute	Putting values where the letters are.
Constant of Proportionality	A constant value relating to amounts that rise or fall uniformly together.
Scaling	Multiplying or dividing two quantities by the same number
Multiplicative Relationship	A relationship where two quantities can be expressed as a multiple of each other.

Other topics/units this may appear in:

- Fractions
- Percentages
- Best Value
- Exchange Rates
- Proportion Recipes
- Straight Line Graphs
- Direct & Inverse Proportion

Year 8 – Maths – Mastery Unit 8 – Direct & Inverse Proportion

Constant of Proportionality

If two quantities are directly proportional, the multiplier between them is called the **constant of proportionality**.

Example:

lbs	oz
1	16
5	

Pounds (lbs) and ounces (oz) are directly proportional.

lbs	oz
1	16

× 16

Therefore, 16 is my constant of proportionality.

lbs	oz
1	16
5	80

× 16

Unitary Method

Sometimes the constant of proportionality is more challenging to find.
If we scale it down to 1, then it is easy to then scale up to the quantity we need!

Eggs	Cost (£)
8	20
50	?

Eggs		Cost (£)
8	1	20

÷ 8 × 20

Eggs		Cost (£)
8	1	20
50	6.25	125

÷ 8 × 20

Keyword/Skill	Definition/Tips
Ratio	Shows the relative sizes of two or more values. E.G. 1 boy and 3 girls would be written as 1:3
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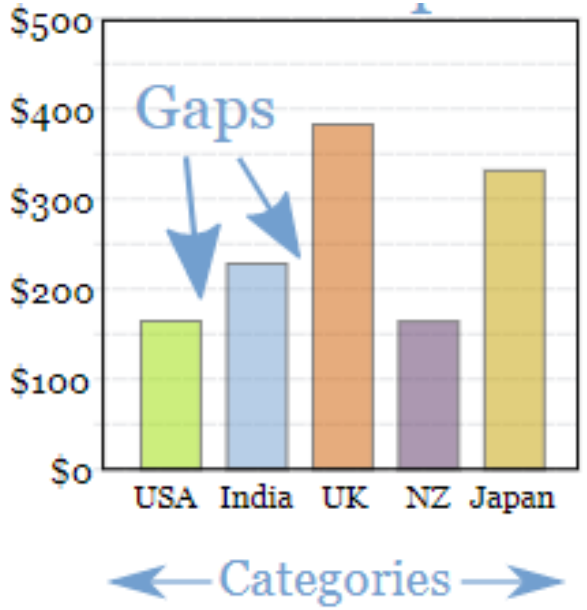
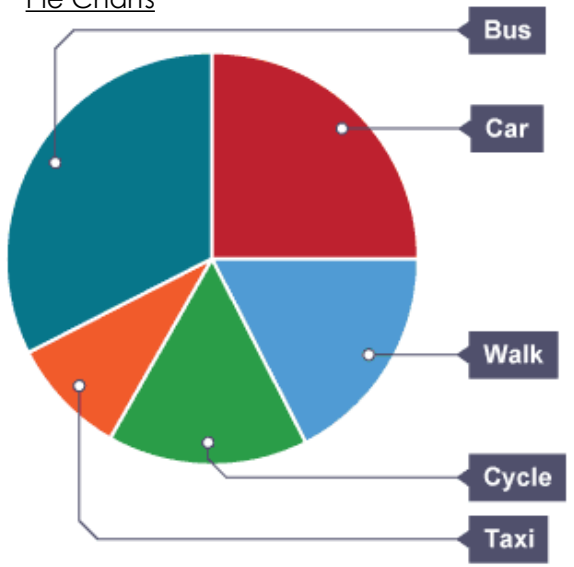
Year 8 – Maths – Mastery Unit 9 – Univariate Data

Bar Charts



- **Discrete data** can be represented using bar charts
- A bar chart is used to compare two or more values with a small set of results.
- Bar charts show the absolute value of each category

Pie Charts



When you are graphing percentages of a distribution a pie chart would be suitable.

Pie charts clearly show the proportion of each category

- Pie charts use different-sized sectors of a circle to represent data.
- The angle of each sector represents the fraction, out of 360, assigned to that data value.
- Pie charts should always be labelled, either directly on the pie chart or by means of a colour-coded key.

Tally Charts

- A tally chart is a way to represent data.
- You are able to represent **qualitive and quantitative data.**
- You can have normal tally charts or grouped tally charts. These are also called frequency tables.

Tally chart with discrete data

Response	Tally	Frequency
0	𝍸 𝍸 |||	13
1	𝍸 |||	8
2	||||	4
3	||	2
4		0
5		0
6 or more	|||	3

Grouped tally chart with continuous data

Response	Tally	Frequency
$x < 125$	||	2
$125 \leq x < 135$	||	2
$135 \leq x < 145$	𝍸 ||	7
$145 \leq x < 155$	𝍸 𝍸 |	11
$155 \leq x < 165$	𝍸 |	6
$x \geq 165$	||	2

Tally chart with quantitative data

Response	Tally	Frequency
White		0
Black	𝍸 ||	7
Blue	|	1
Blonde	||||	4
Dark Brown	𝍸 ||||	9
Ginger	|||	3
Light brown	𝍸 |	6

Keyword/Skill	Definition/Tips
Discrete	Discrete data can only have a finite or limited number of possible values
Continuous	Continuous data can have an infinite number of possible values within a selected range
Quantitative	Quantitative data that can be counted (discrete), quantitative date that can be measured (continuous)
Qualitative	Information that is written in words i.e. colour of cars
Average	A calculated 'central value' of a set of numbers
Mean	The mean amount is the total amount split evenly
Median	Place the numbers in value order and then find the middle number. When there are two numbers in the middle we average them.
Mode	The number which appears most often in a set of numbers
Range	The difference between the highest and lowest values
Frequency	How often something happens.
Table	Information (such as numbers and descriptions) arranged in rows and columns.
Data	A collection of facts, such as numbers, words, measurements, observations or even just descriptions of things.
Proportion	A part, share, or number considered in comparative relation to a whole.
Univariate Data	Univariate means "one variable" (one type of data).

Other Topics/Units this could appear in:

- Averages
- Averages from Tables
- Sampling
- Histograms

Year 8 – Maths – Mastery Unit 9 – Univariate Data

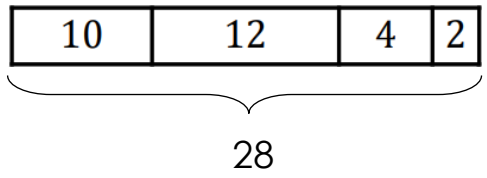
Calculating the Mean

The mean is the most commonly used measure of average. The mean is the total amount split evenly.

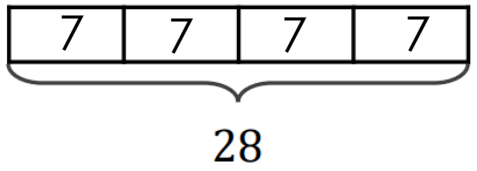
For example take this data set:

10. 12. 4. 2

I can represent this as a bar model:



The total is 28. I then want to split this amount evenly into how many values there are. In this case I need to split 28 into 4 even values.

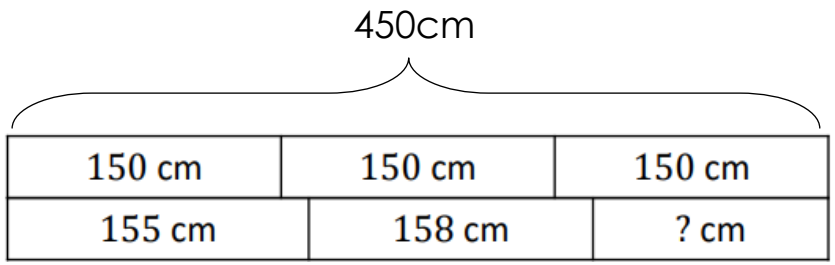


Therefore the mean is 7!

You can also find missing values from data sets when given the mean.

Example:
Three children have a mean of 150cm.
Two children have a height of 155cm and 158 cm.
What is the height of the third child?

I can draw a bar model to help me out:



I can see that the total would be 450cm so I can figure out the missing total:
155cm + 158cm = 313cm 450cm – 313cm = **137cm**
is the height of the third child

Calculating the Median

- If you place a set of numbers in order, the median number is the middle one.

10 12 13 15 16 23 26

15 is the middle number so it is the median.

- If there are two middle numbers the median is the mean of this

10 12 13 15 16 17 23 26

Here you need to find the number in the middle of 15 and 16:

15 + 16 = 31 31÷ 2 = 15

Therefore, 15.5 is the median.

Calculating the mode

- The mode is the value that occurs most often

Example:

1,3,3,4,7,8

The number 3 occurs the most so the mode is 3.

Calculating the Range

The range is the difference between the highest and lowest values in a set of numbers

Find the range of:

23, 27, 40, 18, 25

The largest value is 40 and the smallest value is 23.

40 – 23 = 17

Keyword/Skill	Definition/Tips
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Univariate Data	Univariate means "one variable" (one type of data).

Other Topics/Units this could appear in:

- Averages
- Averages from Tables
- Sampling
- Histograms

Year 8 – Maths – Mastery Unit 10 – Bivariate Data

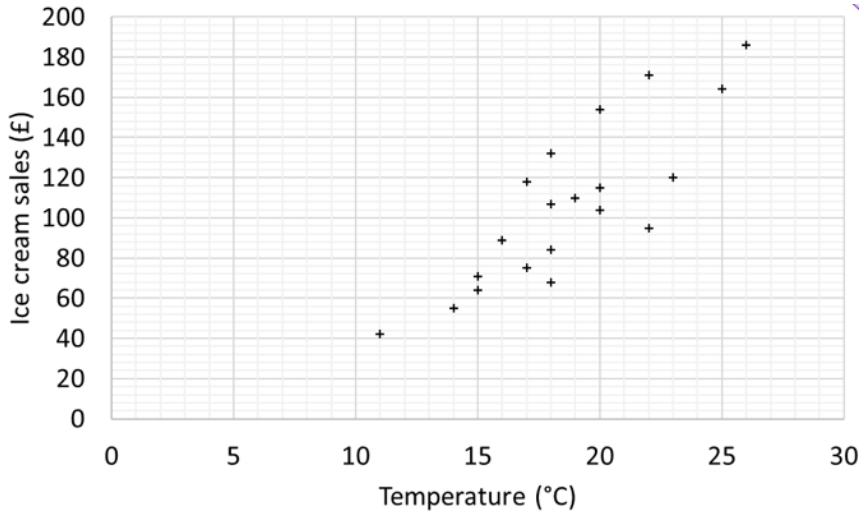
Bivariate Data

- When each entry in a data set has two corresponding pieces of information, we call it bivariate data.
- Here we can then compare data and make connections between them.
- Example:
  The taller someone is the heavier they are.

Participant	1	2	3	4	5
Height (m)	1,53	1.63	1.61	1.75	1.49
Weight (kg)	60.7	66.1	65.2	70.1	59.4

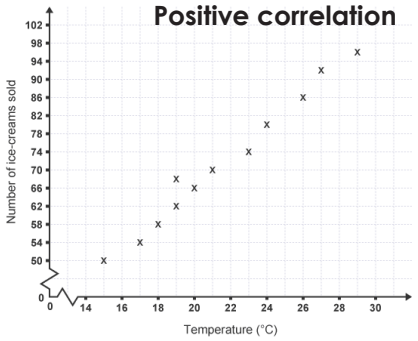
Scatter Graphs

- Bivariate data can be represented as a scatter graph when both values are quantitative data.
- Each point on the scatter graph shows a single object is measured according to the two variables.
- You can make connections with the data based on the trend of the data.
  Example: The hotter it is, the more ice cream is sold.

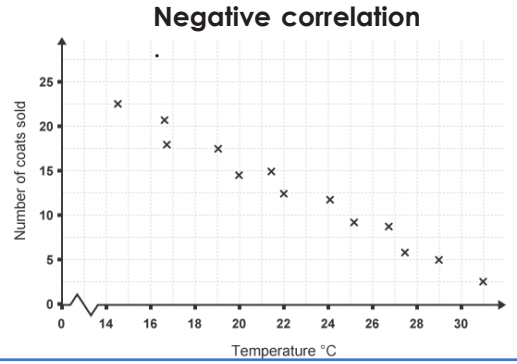


- We can use scatter graphs to see if there is a **correlation**, or connection.

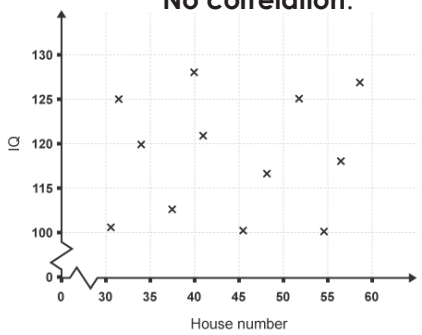
Positive correlation



Negative correlation



No correlation.



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Bivariate Data	Data for two variables (usually two types of related data).
Correlation	When two sets of data are strongly linked together
Causation	The action of causing something.
Frequency	How often something happens.
Table	Information (such as numbers and descriptions) arranged in rows and columns.
Data	A collection of facts, such as numbers, words, measurements, observations or even just descriptions of things.
Proportion	A part, share, or number considered in comparative relation to a whole.
Variable	A variable is an attribute that describes a person, place, thing, or idea.
Trend	The general direction a group of data follows.
Interpolate	Estimating a value inside a set of data points.
Extrapolate	Estimating a value outside a set of data points.

Other Topics/Units this could appear in:

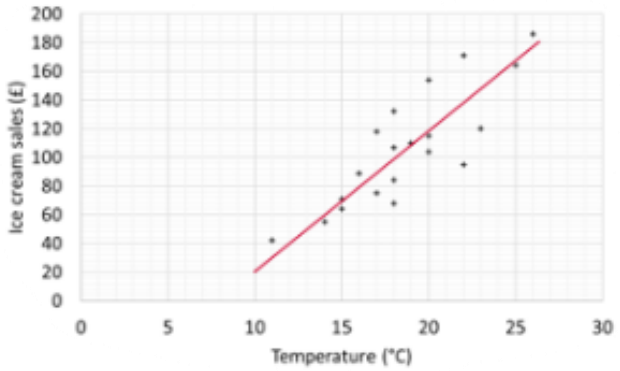
- Averages
- Averages from Tables
- Sampling
- Histograms

Year 8 – Maths – Mastery Unit 10 – Bivariate Data

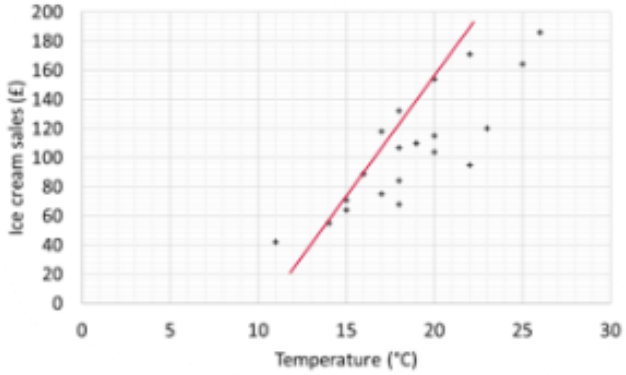
Line of Best Fit

- The line of best fit is a straight line that minimises the distance from each data point to the line.

Example: This line is as close to all the pieces of data as possible

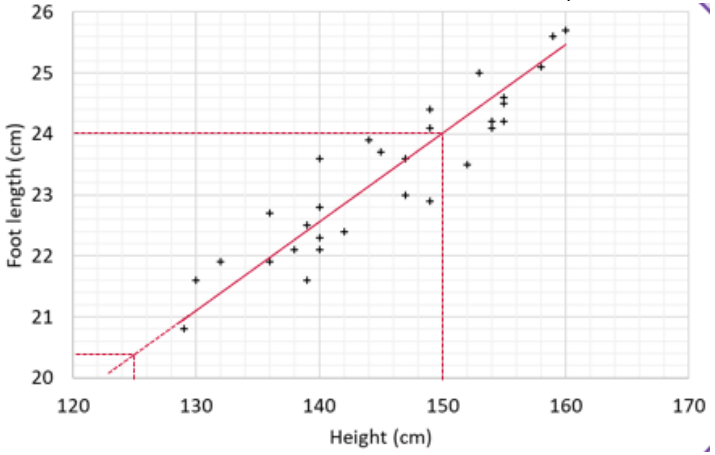


Non-Example: The line is very close to some pieces of data but distance to the data 'below' the line is much greater



Interpolation

- You can use a line of best fit to find out expected results



- Using my line of best fit I can expect a 150cm student to have a 24cm foot length.
- We can only use interpolation when there is correlation between two variables

Two-Way Tables

- Two-way tables are a useful way of recording bivariate data.

- One variable determines the category for each column.
- The other variable determines the category for each row.

		Year		
		7	8	9
Siblings	Brothers but no sisters	45	52	49
	Sisters but no brothers	62	39	54
	Brothers and sisters	51	48	31
	No siblings	34	46	50

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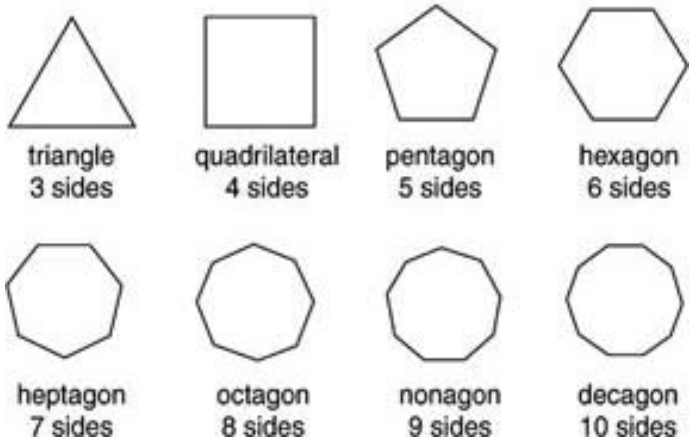
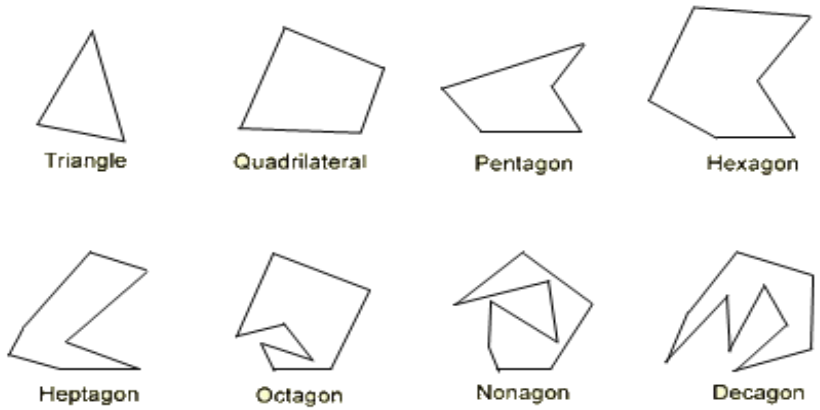
- Histograms

Year 8 Maths – Mastery Unit 11 – Angles in Polygons

Regular Polygons

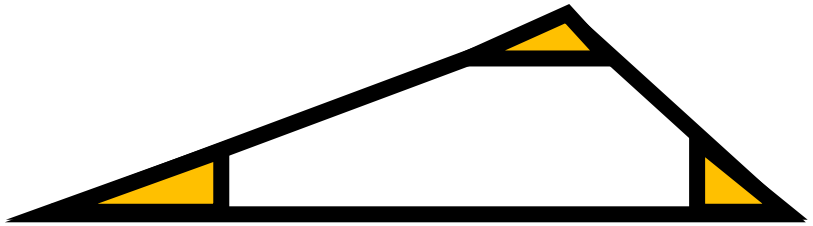


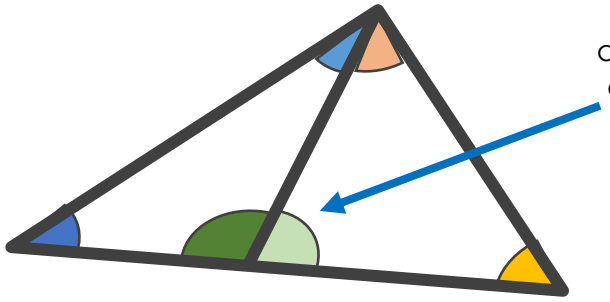
Irregular Polygons



Interior & Exterior Angles

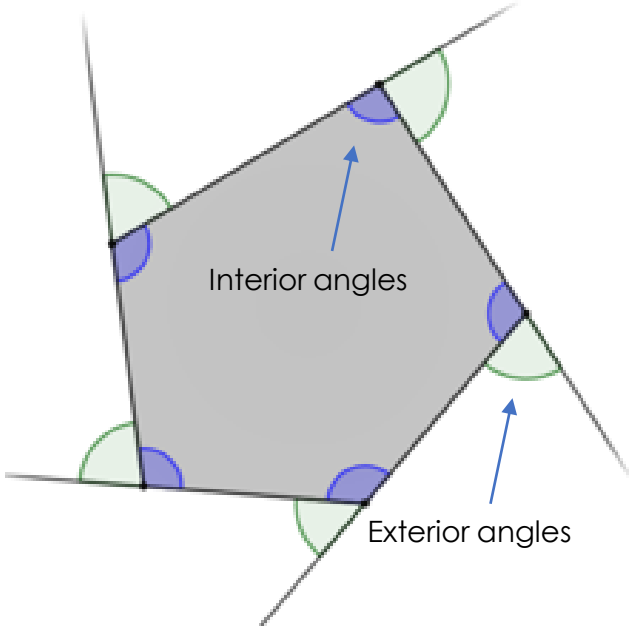
The **interior angles** of a triangle sum to 180°.





In the diagram, the green angles are **not interior angles** of the large triangle as they are not at a **vertex** of the triangle.

Exterior angles and interior angles lie on straight line.
Therefore: **Exterior angle + Interior angle = 180°**



Keyword/Skill	Definition/Tips
Quadrilateral	A shape that has four straight sides
Polygon	A **2D** shape with **only straight edges**.
Regular	A shape is regular if all the **sides** and all the **angles** are **equal**.
Irregular	A shape is irregular when the sides and angles are not all the same size
Interior Angles	An angle inside a shape, joined by two sides
Exterior Angles	The angle between any side of a shape, and a line extended from the next side.
Acute Angles	Angles less than 90°
Right Angles	Angles that are exactly 90°.
Obtuse Angles	Angles greater than 90° but less than 180°.
Reflex Angles	Angles greater than 180° but less than 360°.
Sum	Adding numbers together
Vertex	A point where two or more line segments meet. A corner.

Other Topics/Units this could appear in:

- Mensuration
- Properties of 2D Shapes
- Area & Perimeter, 3D Forms & Angle Facts
- Interior & Exterior Angles

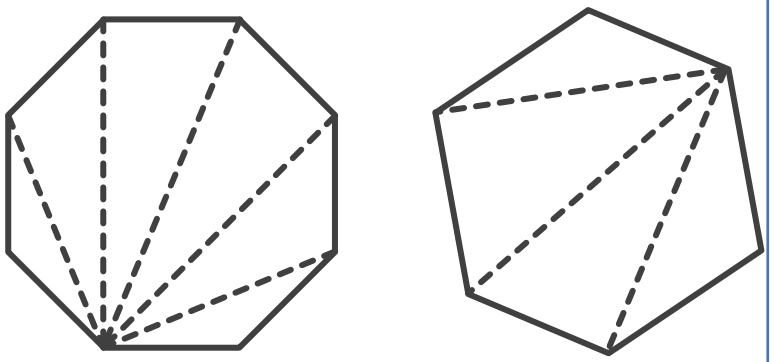
Year 8 Maths – Mastery Unit 11 – Angles in Polygons

Sum of Interior Angles

If we separate a polygon into triangles like these examples, the number of triangles is 2 fewer than the number of sides.
So the sum of the interior angles is:

$$(n-2)\times 180$$

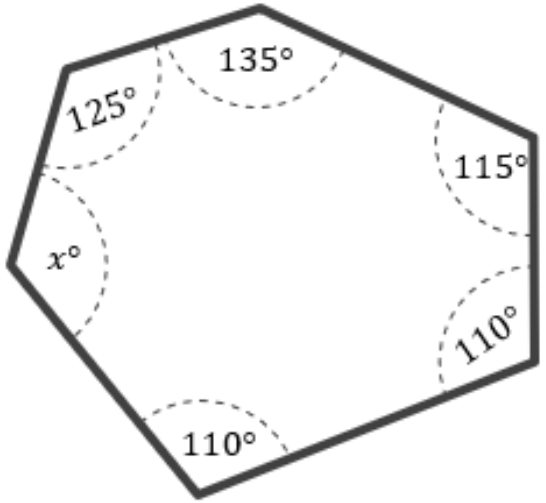
(Where n = the number of sides)



Example:
To find the sum of interior angles in a heptagon.
There are 7 sides on a heptagon.
(7 – 2) x 180 = 5 x 180 = **900°**

Sum of Interior Angles

We can figure out specific angles by using the sum of interior angles.



Sum of interior angles = (6 – 2) x 180 = 4 x 180 = 720°

125	135	115	110	110	x
720					

Therefore, x **= 125°**

Keyword/Skill	Definition/Tips
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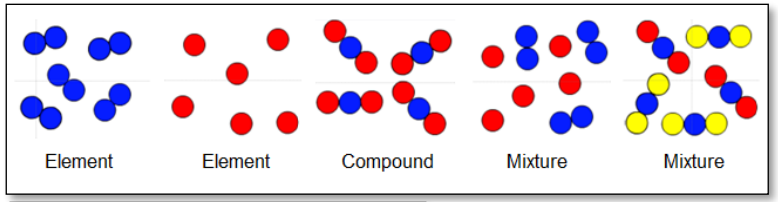
- Area & Perimeter, 3D Forms & Angle Facts
- Interior & Exterior Angles

Year 8 – Science – C1a. Chemical reactions

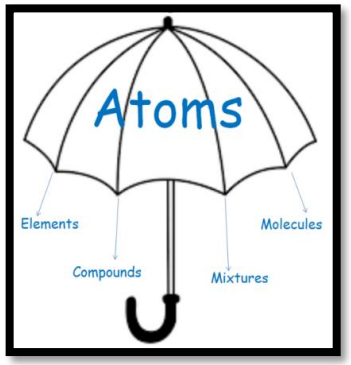
Physical change (Reversible)	Chemical change (Irreversible)
For example – melting chocolate Freezing water into ice	For example – frying an egg - rusting
No new substances or products formed. There has just been a change of state (solid, liquid, gas)	One or more new substances has been formed.



$2\,H_2 + O_2 \longrightarrow 2\,H_2O$

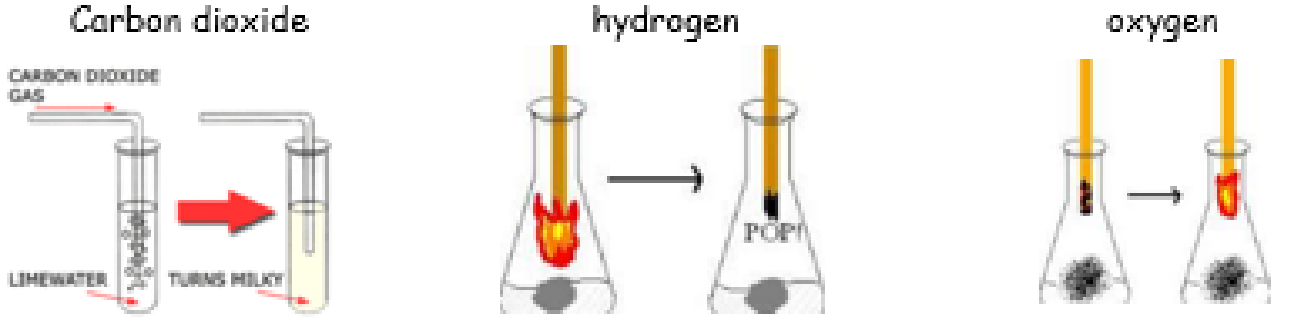
reactants products

A **chemical reaction** is a change in which **atoms are rearranged** to create new substances



Name of compound	Symbol	Elements present
Carbon dioxide	CO_2	1 x Carbon and 2 x Oxygen

Gas testing

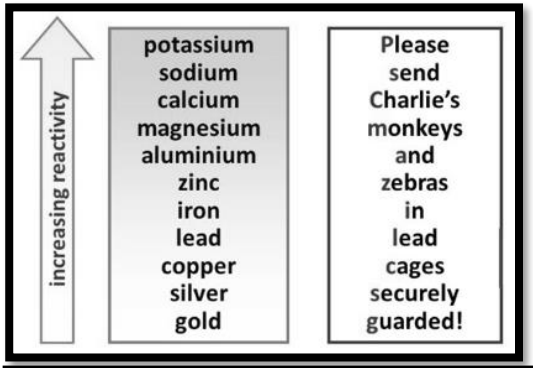


Acid	Name of salt
Hydrochloric	Chlor**ide**
Sulfuric	Sulf**ate**
Nitric	Nitr**ate**

Metal/compound	Acid	Name the products made
Magnesium Mg	sulfuric acid H_2SO_4	Magnesium sulfate + hydrogen $MgSO_4 + H_2$
Iron carbonate $FeCO_3$	nitric acid HNO_3	Iron nitrate + carbon dioxide + water $FeNO_3 + CO_2 + H_2O$
Zinc oxide ZnO	hydrochloric acid 2HCl	Zinc chloride + water $ZnCl_2 + H_2O$
Aluminium	sulphuric acid	Aluminium sulfate + hydrogen

Actual yield	*The quantity (amount) of a product that is obtained from a chemical reaction.*
Chemical	*A substance – such as reactants and products used or made in a chemical reaction.*
Conduction	*The process by which heat, or electricity is transmitted through solids.*
Convection	*The movement of heat through fluids and liquids.*
Elastic potential	*Elastic potential energy is stored in stretched or squashed materials. When a rubber ball is stretched or squashed, it can regain its shape again.*
Electrical	*An electric current is a flow of charge, and in a wire, this will be a flow of electrons.*
Energy	*Energy cannot be created or destroyed. It can be stored, or it can be transferred*
Gravitational potential	*When an object is moved higher, it gains gravitational potential energy.*
Joule	*The scientific unit for energy is the joule.*
Kinetic	*All moving objects will have movement (kinetic) energy.*
Light	*The brightness that comes from objects such as a light bulb, or a torch.*
Non-renewable	*Energy resources that cannot be replaced once they are all used up.*
Nuclear	*Nuclear fuels release energy through nuclear reactions, rather than through chemical reactions.*
Percentage composition	*Percentage composition of a compound is a ratio of an amount of each element to the total amount of individual elements in a compound,*
Percentage yield	*The percent ratio of actual yield to the theoretical yield. It is calculated to be the experimental yield divided by theoretical yield multiplied by 100%.*
Radiation	*A method of transferring heat when no particles are involved.*
Relative atomic mass	*Relative atomic mass of an element is the average mass of its atoms, compared to 1/12th the mass of a carbon-12 atom*
Relative formula mass	*The relative formula mass of a substance made up of molecules is the sum of the relative atomic masses of the atoms in the numbers shown in the formula.*
Renewable	*Energy resources can be replaced and will not run out.*
Sound	*Vibrations that travel through the air or another medium and can be heard when they reach a person's or animal's ear.*
Theoretical yield	*The maximum possible mass of a product that can be made in a chemical reaction.*
Thermal	*Heat energy.*
Transformation	*Changing a substance into another substance*

Year 8 – Science – C1a. Chemical reactions

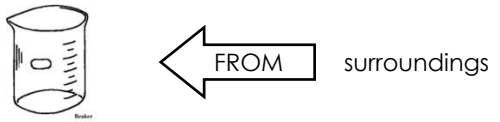


Metal	Oxygen	Name the products made
Lithium 2Li	Oxygen O_2	Lithium oxide 2LiO
Magnesium 2Mg	Oxygen O_2	Magnesium oxide 2MgO

Displacement reactions involve a metal and a compound of a different metal. In a displacement reaction: a more reactive metal will **displace** a less reactive metal from its compounds.
For example, magnesium is more reactive than copper. When a piece of magnesium is dipped into blue copper sulfate solution: the blue colour fades as colourless magnesium sulfate solution forms brown copper coats the surface of the magnesium. A reactivity series helps you to work out if a displacement reaction will take place.

EXOTHERMIC REACTION. Heat energy RELEASED from reaction TO surroundings. Temperature increase . Surroundings get hotter. Examples – combustion, neutralisation

ENDOTHERMIC REACTION. Heat energy ABSORBED FROM surroundings to reaction. Temperature decrease. Surroundings get cooler / Examples – thermal decomposition

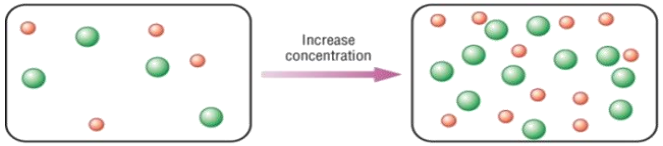


Relative atomic mass
- of an element shows its mass **compared** with the mass of atoms of other elements. The RAM of carbon is 12, while the relative atomic mass of magnesium is 24. This means that each magnesium atom is **twice** the mass of a carbon atom. The relative atomic mass of each element can be found in the **periodic table**.

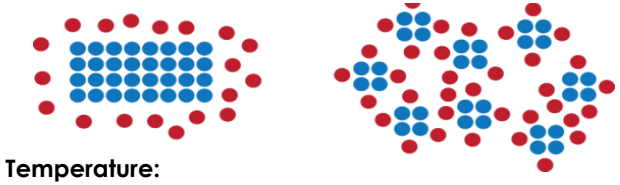
Collision Theory

- **To react**: particles must **collide** with enough energy.
- **To increase rate**: increase the **amount** of collisions or the **energy** of the collisions.

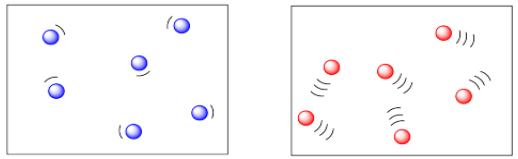
Effect of Concentration:
- Increasing concentration increases the number of reacting particles.
- This increases the number of collisions.



Effect of Surface Area:
- Increasing the surface area increases the proportion of (solid) particles available to react.
- This increases the number of collisions.



Effect of Temperature:
- Increasing the temperature increases the speed that particles are moving
- This means there are more collisions, and those collisions have more energy.



Combustion	
Complete	**Incomplete**
Combustion takes place in lots of oxygen Products – carbon dioxide and water	Combustion takes place in limited oxygen supply Products – carbon monoxide + carbon + water

Catalysts

- **Catalysts:** increase the rate of a reaction without getting used up.
- Catalysts are often used in industry to speed up chemical processes.
- When a catalyst is added to a reaction the same amount of product is formed, but in a shorter period of time
- Enzymes are biological catalyst and enzymes are used in the production of alcoholic drinks.

Calculating relative formulae mass

- Calculate the relative formula mass of the compound with the formula: H_2SO_4
- Answer(H = 1, S = 32, O = 16)

H_2SO_4

(2 x H) (1 x S) (4 x O)
(2 x 1) (1 x 32) (4 x 16)

2 32 64
2 + 32 + 64 = 98

Percentage composition by mass

1. Work out the *relative formula mass* of a compound. 2. Work out the mass of the element that we are interested in. 3. Divide the mass of the element by the relative formula mass of the compound and multiply it by 100.

$$\% \text{ mass} = \frac{\text{Total mass of element}}{\text{Relative formula mass}} \times 100$$

Yield

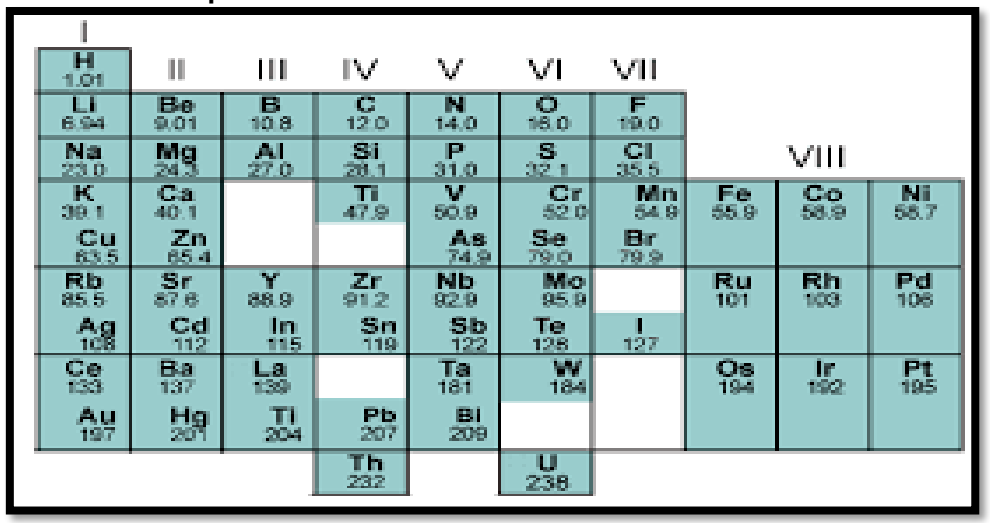
- **Theoretical yield:** the amount of product you would expect.
- **Actual yield:** the amount of product you actually get in practice.
- **Percentage yield:** the proportion of the theoretical yield that you actually achieve.

$$\% \, Yield = \frac{actual \; yield}{theoretical \; yield} \times 100$$

% yield is always less than 100 because:
- The reaction may be incomplete
- Some product may be lost during the steps to prepare it.
- Some reactants may also produce products other than the desired one.

Year 8 – Science – C2b. The Periodic Table

Mendeleev's periodic table

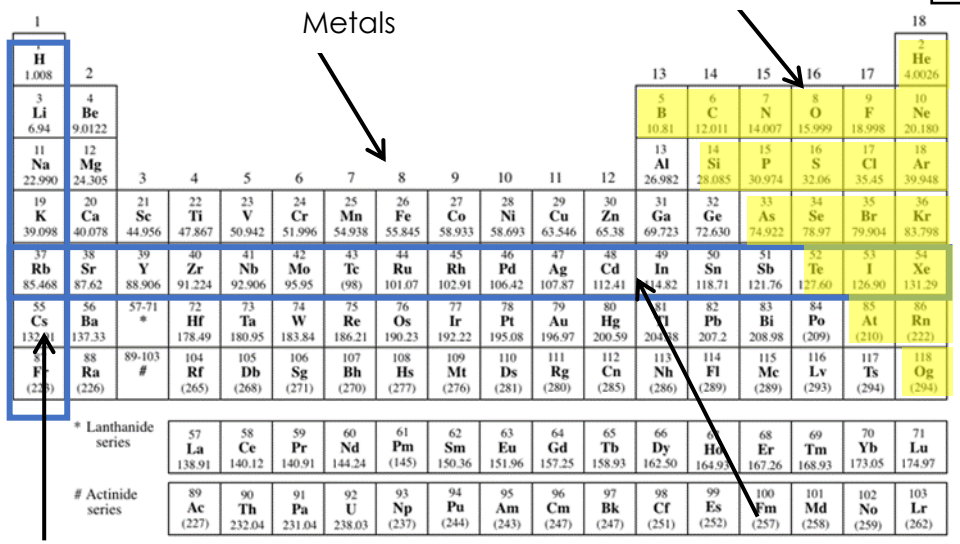


I	II	III	IV	V	VI	VII	VIII
H 1.01							
Li 6.94	Be 9.01	B 10.8	C 12.0	N 14.0	O 16.0	F 19.0	
Na 23.0	Mg 24.3	Al 27.0	Si 28.1	P 31.0	S 32.1	Cl 35.5	
K 39.1	Ca 40.1		Ti 47.9	V 50.9	Cr 52.0	Mn 54.9	Fe 55.9 Co 58.9 Ni 58.7
Cu 63.5	Zn 65.4			As 74.9	Se 79.0	Br 79.9	
Rb 85.5	Sr 87.6	Y 88.9	Zr 91.2	Nb 92.9	Mo 95.9		Ru 101 Rh 103 Pd 106
Ag 108	Cd 112	In 115	Sn 119	Sb 122	Te 128	I 127	
Ce 133	Ba 137	La 139		Ta 181	W 184		Os 194 Ir 192 Pt 195
Au 197	Hg 201	Tl 204	Pb 207	Bi 209			
			Th 232		U 238		

The main groups are numbered from 1 to 7 going from left to right, and the last group on the right is group 0. The section in the middle of the table is called the Transition Metals.

The zig-zag line in this diagram separates the metals, on the left, from non-metals, on the right. Hydrogen is a non-metal but it is often put in the middle.

Modern day periodic table



Each element has its own chemical symbol, made from letters. Remember that you will only find elements in the periodic table and never compounds. So you won't find substances like water or copper sulfate in the periodic table.

Columns going down are called **groups**. Elements in a group have similar properties.

Rows going across are called **periods.**

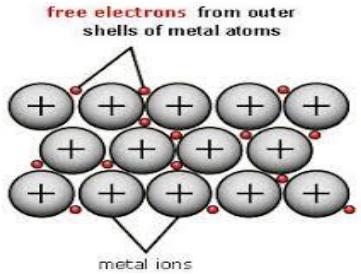
Keyword	Definition
Element	*An element is a substance that cannot be broken down into any other substance. Every element is made up of its own type of atom.*
Period	*A horizontal row on the periodic table.*
Group	*A vertical column on the periodic table.*
Mendeleev	*A Russian scientist called Dmitri Mendeleev produced one of the first practical periodic tables in the 19th century.*
Atomic mass	*The mass of a single atom of a chemical element. It is calculated as the number of protons and neutrons.*
Lustrous	*A material that is shiny.*
Sonorous	*A material that capable of producing a deep or ringing sound.*
Ductile	*A material that may be stretched into a wire.*
Malleable	*A material that can bend without breaking.*
Reactivity	*The tendency of a substance to undergo a chemical reaction.*
Halogens	*Group 7 in the periodic table.*
Atoms	*The smallest part of an element that can exist*
Metal	*A substance found on the left hand side of the periodic table.*
Non-metal	*A substance found on the right hand side of the periodic table.*
Alloy	*A mixture of elements, including at least one metal.*
Pure	*A pure element or compound contains only one substance, with no other substances mixed in.*
Impure	*Impure materials may be mixtures of elements, mixtures of compounds, or mixtures of elements and compounds that are not chemically combined.*
Displacement	*A more reactive metal will displace a less reactive metal from its compounds.*
Density	*The density of an object or substance is its mass divided by its volume: Density = Mass ÷ Volume.*
Alkali metals	*Group 1 in the periodic table.*

Year 8 – Science – C2b. The Periodic Table

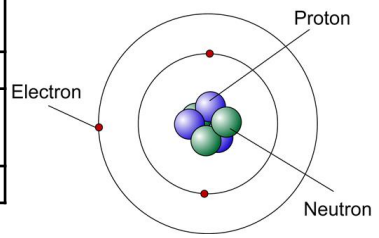
Metal and non-metal properties

	Metal	Non-metal
Appearance	Shiny	Not shiny
Hardness	Hard	Soft
Brittle	No	Yes
Malleable (can be moulded/bent)	Yes	No
Ductile (can be made into wire)	Yes	No
Conducts heat	Yes	No
Conducts electricity	Yes	No
Density	High	low

Metallic structure vs alloy structure



Alloys have **different sized atoms,** and because of this there are **no layers** like in pure metals. In an alloy it is not as easy to push one layer (row) of atoms over another. This makes alloys stronger than pure metals.



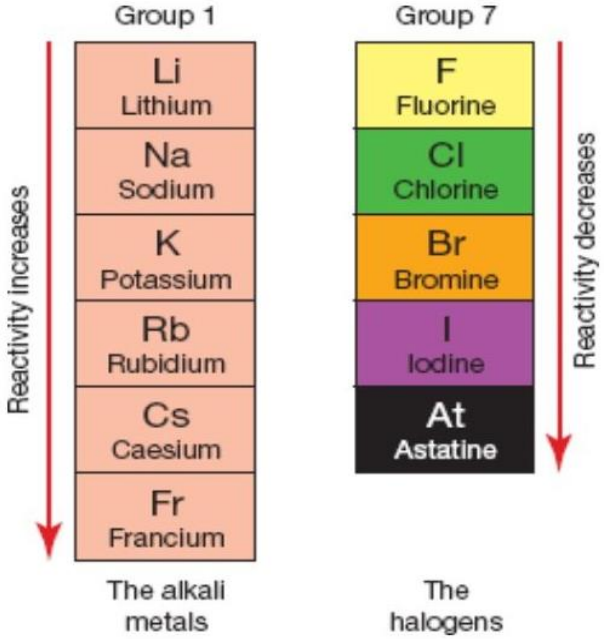
	Reactivity	Reaction with water	Boiling point (°C)	Melting point (°C)
Lithium	Least reactive	Fizzes steadily, moves around, gradually disappears	1342	181
Sodium	reactive	Fizzes rapidly, moves quickly, becomes a sphere, disappears quickly	883	98
Potassium	Very reactive	Ignites with a lilac flame, moves very rapidly, disappears very quickly	760	63

Alkali metal + water → metal hydroxide + hydrogen

Sodium + water → sodium hydroxide + hydrogen

Potassium + water → potassium hydroxide + hydrogen

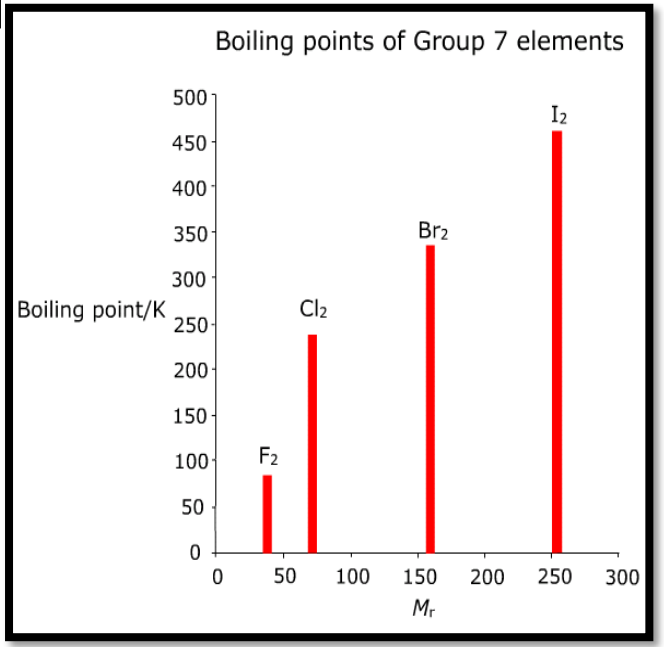
Reactivity of group 1 alkali metals and group 7 halogens



As you go down Group 1, the reactivity of the alkali metals increases.

As you go down Group 7, the reactivity of the halogens increases.

Halogens: The strength of the forces between the molecules of the halogens increases as the size of the molecules increases, so the boiling point increases as it requires more energy to overcome these forces.



Halogen displacement

A more reactive halogen can displace a less reactive halogen from solution of its salts.

Example:

Chlorine + sodium bromide → sodium chloride + bromine

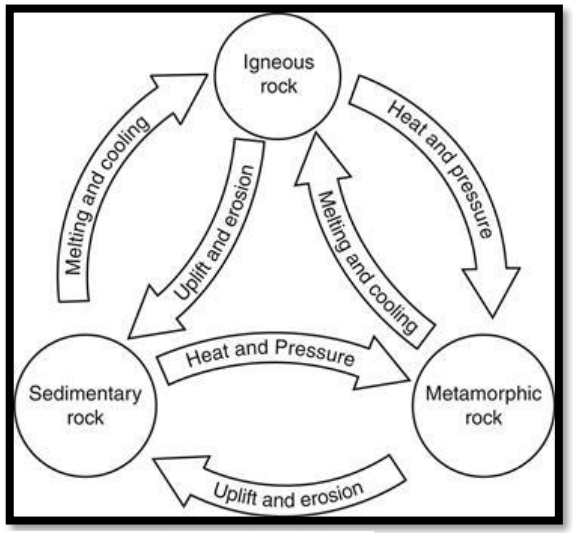
Iodine + potassium bromide → no reaction

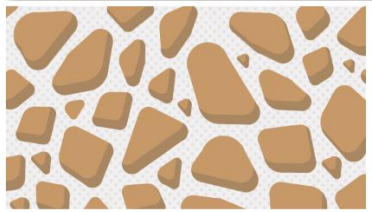
Year 8 – Science – C2c. Earth Science

Keyword	Definition
Rock Cycle	A continuous cycle of recycling rocks over millions of years due of processes such as weathering, erosion and large earth movements.
Fossils	The preserved remains or traces of a dead organism.
Crystals	Molecules or particles of a substance fit together in the repeating pattern.
Layers	A sheet/quantity of a material that covers a surface
Erosion	The movement of broken pieces of rocks away from the site of weathering
Sand	Very small pieces of old rocks that have been weathered and eroded
Extrusive	Igneous rock that is formed by lava, outside the volcano, has small crystals because it has cooled quickly
Intrusive	Igneous rock that is formed by magma, inside the volcano, has large crystals because it has cooled slowly.
Weathering	The mechanical breakdown of rocks on the Earth's surface by the action of weather, temperature or biological activity
Porous	A rock that has small gaps between the grains/particles that allow water/air to pass through them
Recycle	The process of turning used waste and materials into new products.

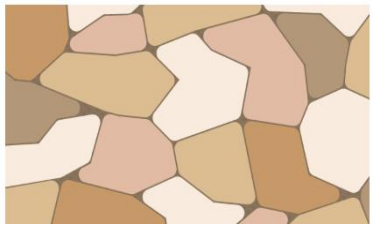
Rocks can be classified in to three main groups - igneous, sedimentary and metamorphic.

Igneous	Sedimentary	Metamorphic
Granite	Limestone	Marble
These rocks are a result of volcanic activity in the past. Rocks were formed from lava. Some cooled on the surface of the Earth, and some deep in the Earth.	These are made up of small particles of sand and rock, which have been transported by the wind, rivers and ice and are usually deposited on lake or seabed.	These are rocks that have been changed in shape and form by intense heat and pressure





Rounded grains (rock is porous and crumbly)

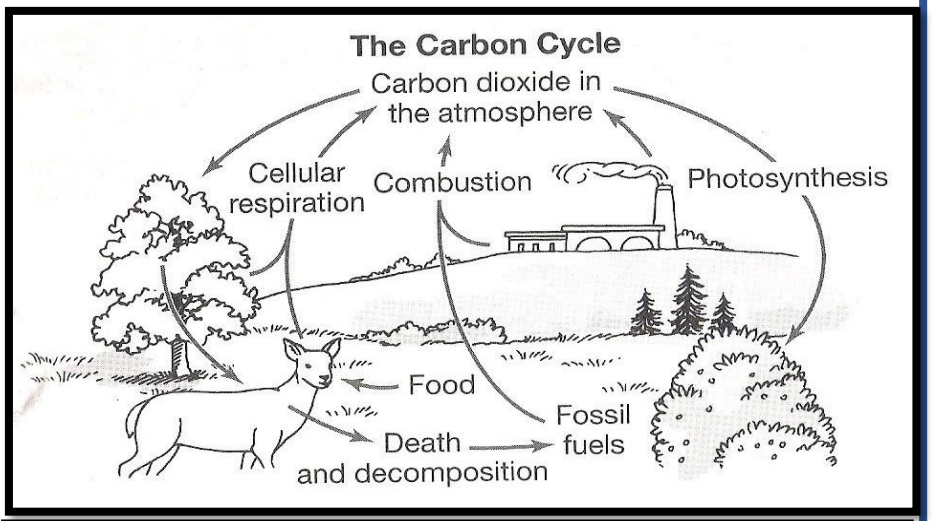


Interlocking grains – crystals (rock is hard)

A fossil is the preserved remains or traces of a dead organism. The process by which a fossil is formed is called fossilisation.

It's very rare for living things to become fossilised. Usually after most animals die their bodies just rot away and nothing is left behind. However, under certain special conditions, a fossil can form.

	Extrusive igneous rock	Intrusive igneous rock
Where magma cooled	On the surface of the Earth	Underground
How fast magma cooled	Quickly	Slowly
Size of crystals	Small	Large
Example	Basalt	Granite



Wind, rain and waves can all cause weathering. The wind can blow tiny grains of sand against a rock. These wear the rock away and weather it. Rain and waves lashing against a rock can also wear it away over long periods of time.

If water gets into a crack in a rock and then **freezes**, it **expands** and pushes the crack further apart. When the ice melts later, water can get further into the crack. When the water freezes, it expands and makes the crack even bigger.

Y8 ART DAY OF THE DEAD KNOWLEDGE ORGANISER
Developing ideas cultural research
Recording ideas.
Using resources – testing out ideas/media.
Making a personal response – final outcome.

What makes a successful Day of the Dead artist research board?

- Cultural information/nationality/Inspiration.
- Exploration of links to natural forms.
- Colour testing
- Pattern testing
- Own response.

What message is behind Day of the Dead artwork?
A good written analysis should include correct art vocabulary and your own opinion of the work.

What needs to be included to record my own ideas?

- Realistic tonal drawings.
- Flowers.
- Insects.
- Pattern developments.

Good observational drawings should show a clear understanding of tonal shading/gradients/directional shading and detail.

How do I develop my ideas to create a response to Day of the Dead cultural art? :

- Use the ideas behind the work to inspire you.
- Combine symbols and patterns in a creative way.
- Use harmonious colour wash paint techniques successfully.

A good artist response should link to the ideas and inspiration behind the work and use similar materials and techniques with skill and control.

Wider Thinking:
Look at Tim Burton's Corpse Bride or Disney's Pixar film 'Coco.'

Expert modelling example..

Tonal drawings/Natural forms

Pattern/colour testing//Own response

Stretch and Challenge:
Use and combine materials and techniques with a high level of skill and control.

Keyword	Definition
Analyse	Examine in detail.
Simplificaiton	Taking away complicated details.
Apply	Put skills/knowledge/understanding into action.
Describe	Give a clear description that includes all the main features – think of it as 'painting a picture with words'.
Watercolour wash	A watercolour wash is a layer of diluted paint. Washes are applied over a large area of a painting to help create backgrounds or build layers of colour.
Composition	The arrangement of the subject matter, such patterns and symbols on the areas of the skull.
Investigate	Test the qualities of materials, techniques or processes through practical work.
Skilful	Apply materials, techniques and processes with a high level of understanding, ability and control.
Refine	Improve work taking into account feedback and aims.
Formal Elements Colour, pattern, shape	Key words that can be applied and used to describe 2D and 3D art and design.
Harmonious colour:	Harmonious colours sit next to each other on the colour wheel and often link to nature.

Y8 Sandra Chevrier KNOWLEDGE ORGANISER
Developing ideas/artist research
Using resources – testing out ideas/media.
Making a personal response – final outcome.

How do I identify the formal elements of Sandra Chevrier's work to create a written analysis?

- Artist's information/nationality.
- Inspiration
- Colour
- Composition
- What message is the artist trying to put across?

A good written analysis should include correct art vocabulary and your own opinion of the work.

What needs to be included to create a good copy of Sandra Chevrier's work?

- Realistic detail
- Finer details
- Collage

A good artist copy should show a clear understanding of the artist's use of materials and techniques..

How do I develop my ideas to create a response to Sandra Chevrier'swork? :

- Use the idea behind her work to inspire you.
- Use her composition style you like best,
- Make your work as detailed as possible.
- Use a collage material that links to your chosen celebrity.

A good artist response should link to the ideas and inspiration behind the artist's work and use her materials and techniques with skill and control.

Stretch and Challenge:
Have a go at drawing facial features using pencil crayons.

Expert modelling example..

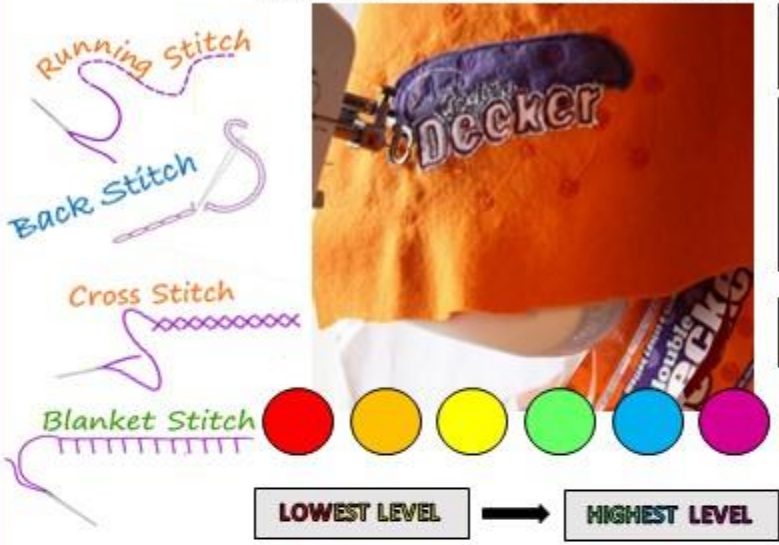
Artist copy/written analysis

Artist response

Wider Thinking:
Research the meaning behind 'The Caged' series by Sandra Chevrier to understand the greater meaning behind her work.

Keyword	Definition
Analyse	Examine in detail.
Tone	**Tone** in an artistic context refers to the light and dark values used to shade a realistic object.
Apply	Put skills/knowledge/understanding into action.
Describe	Give a clear description that includes all the main features – think of it as 'painting a picture with words'.
Finer Details	The details of something are its individual features or elements.
Composition	The arrangement of the subject matter, such as figures, trees, and so on in a work of art.
Investigate	Test the qualities of materials, techniques or processes through practical work.
Skilful	Apply materials, techniques and processes with a high level of understanding, ability and control.
Refine	Improve work taking into account feedback and aims.
Formal Elements	Key words that can be applied and used to describe 2D and 3D art and design.
Collage	A collage is a picture that has been made by sticking pieces of coloured paper and cloth onto paper.

Y8 TEXTILES SWEET TREATS KNOWLEDGE ORGANISER



Step One - Draw your design onto paper and cut out using paper scissors.

Step Two - Pin your template to the CORNER of your felt piece. This prevents waste and means that someone else can use the same piece of felt

Step Three - Use the same template and pin to fabric that already has Bondawebb ironed onto the back.

Step Four - Using fabric scissors cut out the letters. These will then be placed onto your orginal orange piece.

Step Five - Pin your black writing in place.

Needle & Thread

Step Six - Use Running Stitch to sew down your writing.

Around the edge of each letter

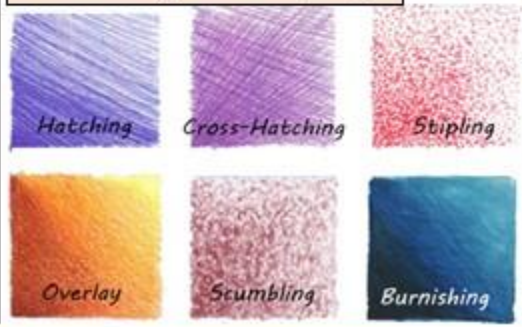
LOWEST LEVEL → HIGHEST LEVEL

Once you have your applique pieces cut out, lay them out in your design and pin to your fabric.

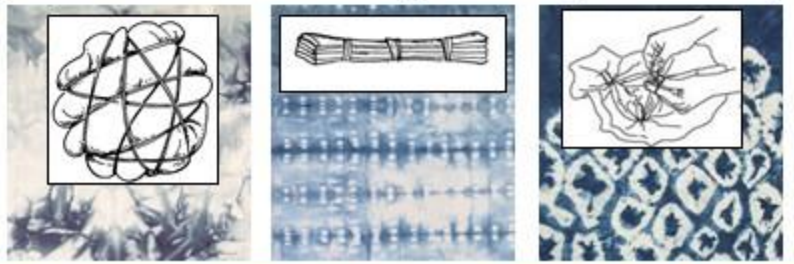
Make sure you only pin to the front piece of your Tie Dye.

Applique your pieces into place – You should hand stitch them in place. Highest grades will use a variety of different stitches. Read the grade descriptors to help you reach your target grade!

Shading Techniques



Tie Dye Techniques



Final Product – Sweet Treat Cushion

Keyword	Definition
Analyse	**Analysis** is the process of breaking a topic or substance into smaller parts in order to gain a better understanding of it
Gradient	Gradation in **art** is a visual technique of gradually transitioning from one colour to another, or from one shade to another, or one texture to another.
Soft Sculpture	3D Art made from fabric.
Analogous	Colours that are next to each other on the colour wheel.
Influence	Something or someone that influences a person or thing, then, has an influence on that person or thing.
Mono - Transfer	Shade the back of an image, place onto a clear piece of paper or fabric and trace so that the detail imprints.
Embroidery	**Embroidery** is the craft of decorating fabric or other materials using a needle to apply thread or yarn.
Applique	Layering pieces of fabric that are sewn or stuck on to a larger piece to form a picture/pattern.
Tie - Dye	A hand method of producing patterns in textiles by tying portions of the fabric or yarn so that they will not absorb the **dye**.

Year 8 – Computing – Flowcharts

Key Vocabulary	
Algorithms	A set of rules or instructions to be followed.
Flowcharts	A graphical way of showing an algorithm.
Selection	Deciding what code to run based on a decision or answer to a question. E.g an IF statement.
Sequence	A set of instructions that are completed in the exact order that they are written.
Iteration	Where a set of instructions is repeated. E.g a while loop, for loop and repeat until loop.
Input	Data that is given to the computer or program to then use.
Output	Information that is provided by the computer or program.
Procedure	A group of instructions grouped together that can be used by the main program.
Variable	A name given to a value in a program that can change when the program is running.

Careers

- Software development
- Programing
- Software Engineering

Flowchart Symbols	
Start/Stop	Used at the start and end of a flowchart.
Input/Output	Controls all the inputs and outputs.
Process	General instructions and calculations carried out by the computer.
Decision	Where a question/decision is asked. Must have a 'Yes' and 'No' output.
	Used to connect flowchart symbols to show the direction of flow in the program.

Year 8 – Computing – Python Advanced

Variables

- Variables are for storing values in memory.
- A variable is declared (set up) and values are assigned.
- Variables are assigned a value using the = operator.
- It chooses the bets data type for the value.

- No spaces in names but can use under_score or camelCase.
- No numbers at start of variable names.

```
myvariable = 28

x = 3

name = "Bob"

my_wage = 3.5

favCol = "red"
```

Comments

- Comments are for explaining lines of code or while sections.

```
x = 3  #can comment at the side

#or comment above
house = "open"
```

Print

- Print information to the screen.
- Can be text, numbers or values in variables.

```
print("hello world")

print(12)

print(name)
```

Input

- Allows user to type in data and store in a variable.
- User prompt requires the " ".

- May need to convert data type.

```
variable = input("message")

name = input("please enter your name")

age = int(input("please enter your age"))
```

Data Types

Real /Float
Number with decimal Point

Integer
Number without a decimal Point

String
A series of characters/TEXT

Character
A single letter or symbol

Date/Time
Date and Time in any format

Boolean
Yes no, true false value

Comparative Operators

==	Equal to
!=	Not equal to
>	Greater than
<	Less than
>=	Greater than or equal to
<=	Less than or equal to

Year 8 – Computing – Python Advanced

If and elseif statement

- **Allows SELECTION of different paths.**
- **Use of THEN & ENDIF.**
- **MUST include indent of 4 spaces or TAB**
- **ELSE is optional.**

- **Conditions are set using different comparison operators.**

==	Equal to
!=	Not equal to
<	Less than
<=	Less than or equal to
>	Greater than
>=	Greater than or equal to

- **Can use more than 1 condition using Boolean operators.**

AND	Both conditions are True
OR	Either of the conditions is True
NOT	If condition not True

- **Use of ELSEIF allows for further selection.**
- **Can have as many as wanted.**
- **ELSE still optional.**

```
if password ==  "pa55word1":
    print("you may enter")
```

```
if score > 80:
    print ("grade A")
elif score > 70:
    print ("grade B")
elif score > 60:
    print ("grade C")
else:
    print ("redo")
```

```
if password !=  "password1" or tries < 3:
    print("you shall not pass")
else:
    print ("please enter")
```

Careers

- Software development
- Programing
- Software Engineering

Sequence: Completing steps in the order which they must happen

Selection: Where a choice is made in a program depending on a condition or outcome

Iteration: Act of repeating or lopping specific sections of code

Count controlled Iteration: Repeats a set number of times
Condition controlled Iteration: Repeats until a condition is met or something in the program changes

Year 8 – Computing – Python Advanced

While Loop

Will keep asking the user to type in a value.

```
#--while loop--
password = input("enter password:")

while password !=  "password1":
    password = input("try again")
```

While True (Break)

If the user types in a value that matches 7 the loop will break (end), if not they will be told to try again.

```
#--while True with break--
while True:
    guess = input("guess the number")
    if guess == "7":
        break
    else:
        print ("try again")
```

For Loop

Start at 0 and stop at 7 (up to 7 but not including), print hello each time (7 times).

```
#--for loop--
for i in range(0,7):
    print ("hello world")
```

For Loop (Break)

Start at 0 and stop at 4,
If the user types in a value that matches mypassword the loop will break (end), if not they will be told to try again and have an attempt recorded.

```
#--for with break--
for i in range(0, 4):
    if password  == "password1":
        break
    else:
        password = input("enter password")
```

- Loops are a way for python to do blocks of code more than once
- Without having to keep copying the code
- Blocks of code being repeatedly run is called **iteration**
- Python offers two ways of looping
  - **while** loop
  - **for** loop

Year 8 – Computing – Python Advanced

Empty list of 0 spaces.

Arrays with values. Use the , to split up space.

Can be different data types, strings need " ".

```
#--format--
mylist = [ ]

group = ["Tim", "Jane", "Bob"]

ages = [14,11,17,10.5,"Apple",True,False]
```

Print whole array.
Print 1st value in array.
Print 3rd value in array.
Prints from 1st value to 2nd value.

```
#--update value--
group[2] = "Mike"

group[0] = "Destiny "
```

Update a value to position 3 in array.

Update a value to position 0(start) in array.

```
#--print--
print(group)
print(group[0])
print(group[2])
print(group[0:2])
```

Add value to end of array.
Remove first instance of value from array.
Insert a value to a specific position in the array

```
#--adding/remove/insert--
group.append("Fred")

group.remove("Jane")

group.insert(2,"Miya")
```

Check if a value is in array.

```
#--Length--
classsize = len(group)
```

Find length of an array (amount of values).

```
#--Check for value--
if "Tim" in group:
      print("hello tim")
```

Procedure without parameters

- A procedure is defined at the top of the page.
- This procedure can then be called from the main program as many times as needed.
- The purpose of a procedure is to make code reusable.

```
#SUBROUTINES-----
def welcome():              #define
    print("hello world")


#MAIN-------------
welcome()     #call
```

Procedure with parameters

- Arguments(values) can be passed to a procedure through the use of 1 or more parameters. The procedure can now use these values.
- In pseudo code you should state what data type these parameters are.
- When the procedure is called it is necessary to say what values or variables to pass to the procedure.

```
#SUBROUTINES-----
def helloprocedure(amount, user):
    print((" hello " + user) * amount)
                #prints "hello Jim" 4 times


#MAIN------------
amount = 4
user = "Jim"
helloprocedure(amount, user)
```

Year 8 – Drama – Basic Drama Skills- Devising

What needs to be included in a good **freeze frame**? :

- Facial expressions
- Body Language
- Gestures
- Stillness
- Silence

A good Freeze frame should freeze at a key moment of the story.

What needs to be included in a good **thought track**? :

- Projection
- Vocal tone
- Focus

A good thought track should be detailed.
"I feel……because……."

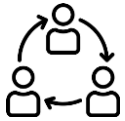
What needs to be included in a good **narration**? :

- Projection
- Vocal tone
- Focus
- Introduction of characters
- Introduction of setting

A good narration should be detailed and tell the audience what has happened prior to the scene.

Steps to a good performance.

Collaborate as a group and discuss initial ideas



Create a **freeze frame** to show the audience your key idea.

Add one **thought track** per character so the audience can learn more about your character.

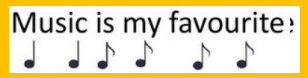
As a group, decide on a **narrator** and add a **narration** to the start of your scene to introduce characters and setting.

Keyword	Definition
Body Language	Using posture or movement to communicate how your character is feeling.
Collaboration	Working together as a group to create something new
Communication	Exchanging information through speaking, writing, or non-verbal communication.
Concentration	Focussing on the set task.
Facial Expressions	Showing your emotion through your face.
Focus	Not laughing while you are on stage and staying in character.
Freeze Frame	A frozen snapshot in time showing a key moment in a story.
Gestures	Using your hands to show the audience where to look through pointing, waving etc.
Narration	Telling the audience key moments of the story. Example: settings and characters.
Projection	Using a loud volume to make sure you are heard.
Thought Track	Stepping out of a freeze frame and telling the audience your character's inner thoughts.
Vocal Tone	Showing emotion through your voice.

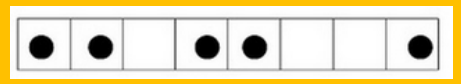
Year 8 Music – I've got Rhythm

Key Words

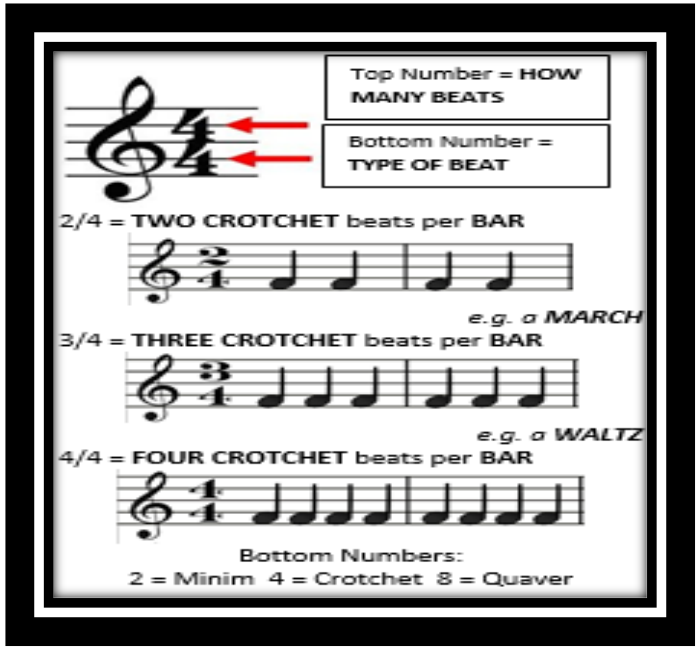
PULSE – A regular BEAT that is felt throughout much music. Certain beats of the pulse can be emphasised to establish regular pulse patterns e.g.
1 2 3 4, 1 2 3 4 = a 4-beat pulse
1 2 3, 1 2 3 = a 3-beat pulse (often called a WALTZ)
1 2, 1 2, 1 2 = a 2-beat pulse (often called a MARCH)

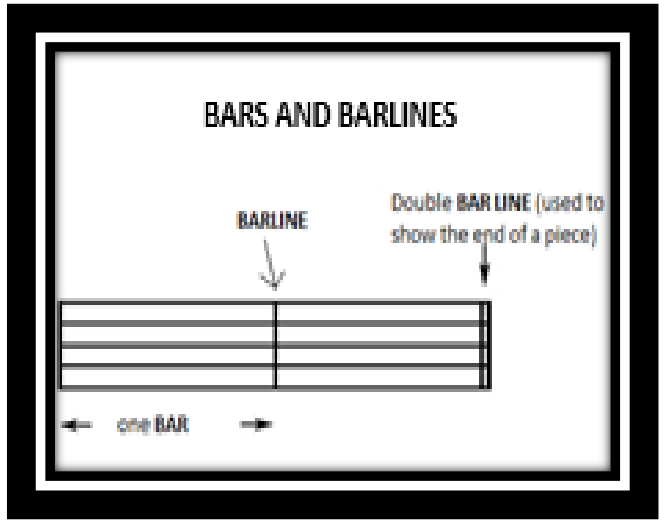


RHYTHM – A series of sounds or notes of different lengths that create a pattern. A rhythm usually fits with a regular pulse. Everyday sentences can be used to create rhythms. The patterns made by words create rhythms and this rhythm has a 4-beat pulse:
ACCENT – Emphasising or stressing a particular note or notes. Accents affect the ARTICULATION and are shown with this symbol >
DURATION – The length of a sound – long/short
TEMPO – The speed of a sound or piece of music – fast/slow
TEXTURE – Layers of sound or how much sound is heard – thick/thin
STRUCTURE – The organisation of sound or how sounds are ordered
SILENCE – The absence of sound or no sound, shown in music by RESTS.
RHYTHM GRID NOTATION – A way of writing down and recording rhythms using boxes



A TIME SIGNATURE tells us how many beats (and what types of beats) there are in each BAR of music and is made up of two numbers at the beginning of a piece of music

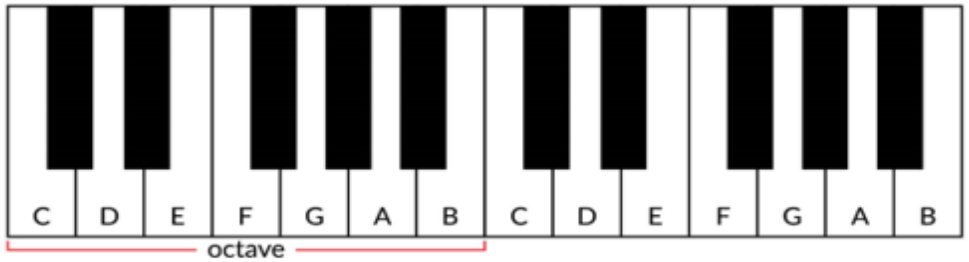




Note Name	Note Symbol	Note Value
Semibreve		4 beats
Minim		2 beats
Crochet		1 beat
Quaver		½ of a beat
Pair of Quavers		2 x ½ beats = 1

Year 8 Music – Keyboard Skills

Layout of a Keyboard/Piano



A piano or keyboard is laid out with **WHITE KEYS** and Black Keys (see section G). C is to the left of the two Black Keys and the notes continue to G then they go back to A again. Notes with the same letter name/pitch are said to be an **OCTAVE** apart. **MIDDLE C** is normally in the centre of a piano keyboard.

Left Hand/Right Hand (1-5)

Treble Clef & Treble Clef Notation

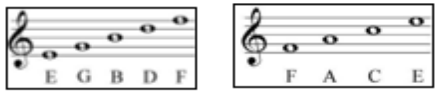
A **STAVE** or **STAFF** is the name given to the five lines where musical notes are written.

The position of notes on the stave or staff shows their **PITCH** (how high or low a note is).

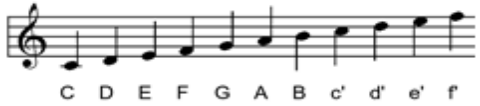
The **TREBLE CLEF** is a symbol used to show high-pitched notes on the stave and is *usually* used for the right hand on a piano or keyboard to play the **MELODY** and also used by high pitched instruments such as the flute and violin.

The stave or staff is made up of 5 **LINES** and 4 **SPACES**.

Every Green Bus Drives Fast. Notes in the **SPACES** spell **"FACE"**



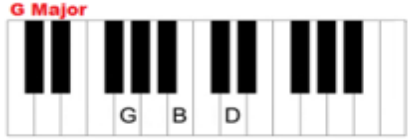
Notes from **MIDDLE C** going up in pitch (all of the white notes) are called a **SCALE**.



Keyboard Chords

C Major

G Major



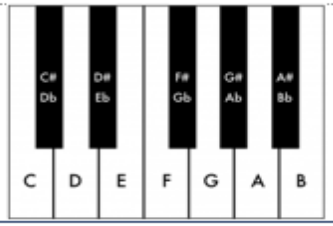
F Major

A Minor

Play one – Miss one – play one – miss one – play one

Black Keys and Sharps and Flats

There are five different black notes or keys on a piano or keyboard. They occur in groups of two and three right up the keyboard in different pitches. Each one can be a **SHARP** or a **FLAT**. The # symbol means a **SHARP** which raises the pitch by a semitone *(e.g. C# is higher in pitch (to the right) than C)*. The *b* symbol means a **FLAT** which lowers the pitch by a semitone *(e.g. Bb is lower in pitch (to the left) than B)*. Each black key has 2 names – C# is the same as D*b* – there's just two different ways of looking at it! Remember, black notes or keys that are to the **R**IGHT of a white note are called SHA**R**PS and black notes to the **L**EFT of a white note are called F**L**ATS.



Year 8 What is Design Technology?

Design and technology gives young people the skills and abilities to engage positively with the designed and made world and to harness the benefits of technology.

Tools and Equipment

	**Marking knife** Used to mark out on woods		**Sand paper** Used to remove cut lines from wood
	**Tenon Hacksaw** Used to cut straight lines into wood		**Disk sander** Used to create a nice finish on wood
	**Coping Saw** Used to cut curved lines into wood		**File** Used to shape and flatten materials

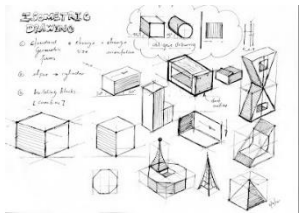
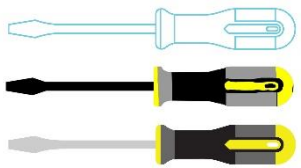
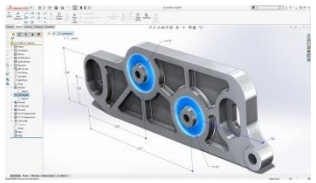
Health and safety

Machine guard Protects from flying debris	**Floor marking** Creates a safe zone around the machine	**Safety signs** Warning and advisory signs	**Table Vice** Hold your work steady
			

Materials

Pine wood A common wood used in construction	**High impact polystyrene** Cheap plastic used for most plastic products	**Oak wood** An expensive wood used for furniture	**Neoprene** A thermal plastic that helps insulate
			

Design Ideas

3D isometric sketching Presenting your ideas in 3D to show more than 1 side of your idea	**Rendering** Using tonal shading to make your ideas appear 3D	**2D sketching** A basic and sketching process to show one side of your idea	**CAD** Computer aided design is used to design product on a digital screen
			

Keywords	***Tools and Machines***	***Materials***
Analysing Investigating Collate Develop Improve Manufacture Evaluate Explain Technical Dimension Tolerance Quality check	Metal files Pillar drill Wet & dry paper Vacuum former Wire wool Laser Cutter 2D Design Bench Vice Junior Hacksaw Safety ruler Pliers Engraver	Acrylic Aluminium Ferrous Non-ferrous Metal Alloy Polyvinyl chloride (PVC) High-density polyethylene ABS Copper Mild steel Polypropylene

Year 8 What is Engineering?

Engineering is the application of science and math to solve problems. Engineers figure out how things work and find practical uses for scientific discoveries.

Tools and Equipment

	**Scribe** Used to mark out on metals		**Emery cloth** Used to remove burrs and sharp edges
	**Junior Hacksaw** Used to cut into metals		**Pillar Drill** Used to cut circular holes into materials.
	**Engraver** Used to scratch designs into metal		**File** Used to shape and flatten materials

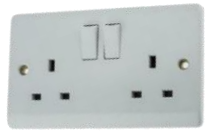
Processes

Mechanical engineering studies the design, manufacture and use of machines	**Electrical engineering** studies the practical applications of electricity and magnetism	**Civil engineering** studies the design, planning and construction of large structures	**Chemical engineering** studies the process and equipment needed to manufacture chemical products on a large scale
			

Health and safety

Goggle Protect your eyes	**Apron** Protect your clothing	**Hair tie** Protect your hair from entanglement	**Vice** Hold your work steady
			

Materials

Mild steel A common material used in construction	**Acrylic** A recyclable type of plastic	**Aluminium** A light-weight metal used in drinks cans	**Urea Formaldehyde** A plastic used for tougher products
			

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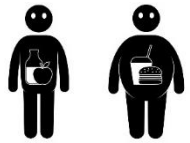
Analysing Investigating Collate Develop Improve Manufacture Evaluate Explain Technical Dimension Tolerance Quality check	Metal files Pillar drill Wet & dry paper Vacuum former Wire wool Laser Cutter 2D Design Bench Vice Junior Hacksaw Safety ruler Pliers Engraver	Acrylic Aluminium Ferrous Non-ferrous Metal Alloy Polyvinyl chloride (PVC) High-density polyethylene ABS Copper Mild steel Polypropylene

Year 8 – Food Technology

Why do we need to eat a **balanced diet**?

1. To achieve and maintain a healthy body weight.

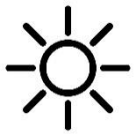


2. For growth and repair

3. To build a strong immune system, prevent disease and infection.

4. To provide energy.

5. To keep us warm.



How do we achieve a balanced diet?
Eight Healthy Tips:

1. Base your meals on starchy foods.

2. Eat lots of fruit and vegetables.

3. Eat more fish – including a portion of oily fish each week.

4. Cut down on saturated fat and sugar.

5. Eat less salt – no more than 4g a day for children.

6. Get active and try to be a healthy weight.

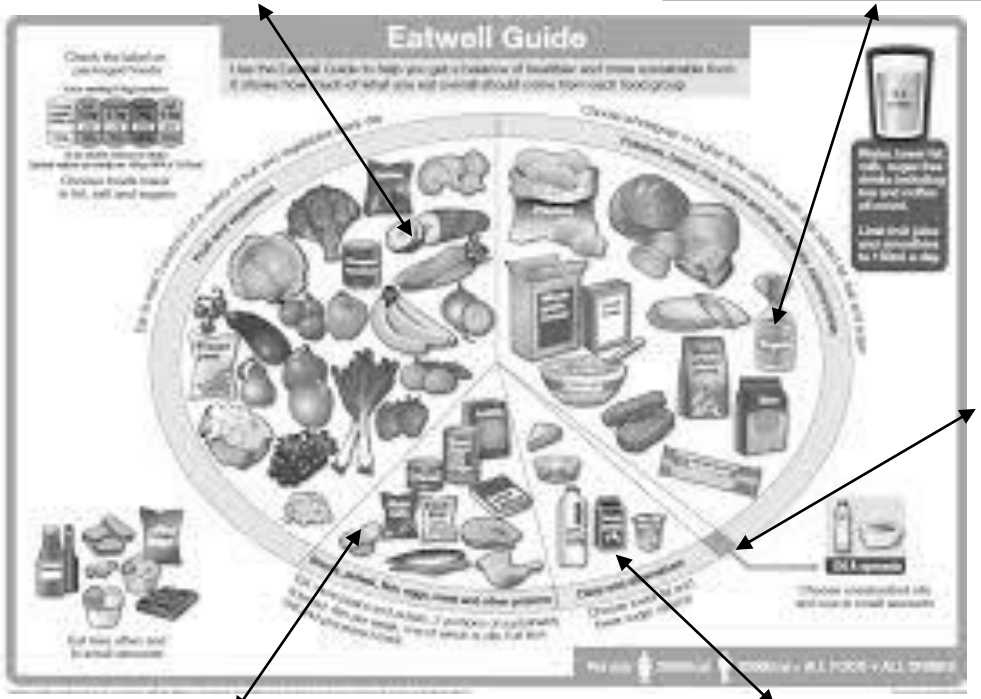
7. Drink plenty of water.

8. Do not skip breakfast.

Eatwell Guide: The Eatwell Guide outlines the recommendations for eating a healthy balanced diet. The guide shows the different types of foods and drinks you should consume – and in what proportions – every day or over a week. The Eatwell Guide shows how much of what you eat overall should come from each food group

Green Section:
Fruit and vegetables are a good source of vitamins, minerals and fibre, needed to build a strong immune system.

Yellow Section:
Starchy foods are a good source of energy. Choose wholegrains for increased fibre, needed to prevent constipation



Purple Section:
Fats, oils and spreads should be eaten sparingly. These do provide energy.

Pink Section:
Beans, pulses, eggs, meat and fish are a good source of protein needed for growth, repair.

Blue Section:
Dairy foods provide a good source of calcium and vitamin D needed for strong bones and teeth.

Year 8 – Food Technology

There are **seven** major classes of nutrients: carbohydrates, fats, dietary fibre, minerals, proteins, vitamins, and water. These nutrient classes can be categorised a either **macronutrients** (needed in relatively large amounts) or **micronutrients** (needed in smaller quantities).

Macronutrients:

Carbohydrates provides the body with **energy**. There are two main types, complex and simple. **Complex carbohydrates** give **long lasting energy**. These are found in foods such as bread, pasta and cereals. **Simple carbohydrates** make blood sugar levels go up very quickly. This provides a **short burst** of **energy.** These are found in 'sugary; foods such as cakes, jams and sweets.

Protein is needed for **growth** and to **repair** cells. Protein is made up of amino acids. Proteins that are high in essential amino acids are called **high biological value (HBV)** proteins. These are found in milk, cheese, fish, eggs, meat and soya beans. Proteins that are low in amino acids are called **low biological value (LBV)** proteins. These are found in nuts, cereals and pulses.

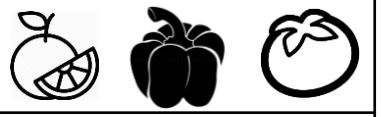
Fats are used by the body for **energy.** Fat also forms an insulating layer under your skin to keep us **warm** and **protect our organs,** such as our kidneys. There are two main types of fat, **saturated** and **unsaturated.** Foods such as meat, cheese and butter are high in saturated fats. Foods such as seeds, fish and vegetable oils are high in unsaturated fats. We should eat less saturated fats.

Fibre helps food to move through our bowels and prevent **constipation**. Foods such as vegetables, wholemeal bread and beans are high in fibre.

Water is needed for lots of reasons, keeping our body at the right **temperature**, **digesting** food, **lubricating** our bones and keeping us **hydrated**. Water is found in drinks, fruits and vegetables.

Keywords	Definition
Constipation	Difficulty empting the bowels
Cholesterol	A type of fat found in our blood
Obesity	Overweight
Diabetes	A disease that occurs when your blood glucose (blood sugars), is too high.

Micronutrients:

Vitamin	What we need it for	Examples of where we get it from
A	Good vision and immune system	
B Group	Releasing energy from carbohydrates	Meat 
C	Fighting diseases and helping the body to absorb iron	
D	Along with calcium, it helps our body make strong bones and teeth	Oily 
Minerals	**What we need it for**	**Examples of where we get it from**
Iron	To make red blood cells to carry oxygen around the body	Green leafy veg 
Calcium	Along with vitamin D, calcium helps make strong bones and teeth	

Consequences of a poor diet:

- Eating too many carbohydrates, fatty foods or sugary foods can lead to **obesity,** which can increase the risk of **type 2 diabetes** and **heart disease.**
- Eating too many salty foods can cause **high blood pressure.**
- Too much saturated fat can lead to **high cholesterol.**

Year 8 – French – Topic 2 – Media (Les médias)

A. Qu'est-ce que tu lis d'habitude ? What do you usually read?					
Time phrase	**Verb**	**Noun**	**Connective**	**Quantifier**	**Adjective**
Normalement Normally **D'habitude** Usually **Dans mon temps libre** In my free time **De temps en temps** From time to time **Quelquefois** Sometimes **Souvent** Often	**je lis** I read **nous lisons** we read **j'aime lire** I like to read **j'adore lire** I love to read	**des BDs** comics **des histoires** stories **des journaux** newspapers **des livres classiques** classics **des livres illustrés** picture books **des livres numériques** digital books **des livres pour les enfants** children's books **des poèmes** poems **des romans** novels	**car ils sont** because they are **parce qu'ils sont** because they are **puisqu'ils sont** as they are	**assez** quite **super** super **très** very **trop** too un peu a bit **vraiment** really	**amusants** fun **capitvants** captivating **divertissants** entertaining **faciles** easy **fascinants** fascinating **géniaux** great **utiles** useful **nuls** rubbish **ennuyeux** boring

B. **Décris la dernière chose que tu as regardée.** Describe the last thing you watched.						
Time phrase	Past tense verb	Noun	Relative	Verb	Quantifier	Adjective
Hier soir Yesterday evening **La semaine dernière** Last week **L'année dernière** Last year	**j'ai regardé** I watched **j'ai vu** I saw **nous avons regardé** we watched **nous avons vu** we saw	**un animé** a cartoon **un film d'action** an action film **un film d'horreur** a horror film **un film fantastique** a fantasy film **un film de super-héros** a superhero film **un documentaire** a documentary **une comédie** a comedy **une comédie musicale** a musical **une émission de téléréalité** reality TV	**qui s'appelle …** which is called …	**et c'était** and it was **et ce n'était pas** and it wasn't	**assez** quite **super** super **très** very **trop** too **un peu** a bit **vraiment** really	**effrayant** scary **extraordinaire** extraordinary **génial** great **inoubliable** unforgettable **nul** rubbish **passionnant** exciting **spectaculaire** spectacular **tragique** tragic **violent** violent

Year 8 – French – Topic 2 – Media (Les médias)

C. **Parle-moi du film …** Talk to me about the film …						
Noun + verb	Opinion	Quantifier	Adjective	Connective	Noun + verb	Adjective
Le film s'appelle … The film is called … **La série s'appelle** … The series is called …	**à mon avis, c'est** in my opinion, it's **selon moi, c'est** according to me, it's	**assez** quite **super** super **très** very **trop** too **un peu** a bit **vraiment** really	**artistique** artistic **extraordinaire** extraordinary **fascinant** fascinating **inspirant** inspiring **pertinent** relevant **plein d'émotions** full of emotion **décevant** disappointing **ennuyeux** boring **tragique** tragic **violent** violent	**et** and **mais** but **cependant** however	**la musique, c'est** the music, it's **l'histoire, c'est** the story, it's	**artistique** **extraordinaire** **fascinant** **inspirant** **pertinent** **plein d'émotions** **décevant** **ennuyeux** **tragique** **violent**

Connective	Noun + verb	Verb	Adjective
Aussi Also **En plus** In addition	**l'acteur s'appelle …** the actor is called … **l'actrice s'appelle …** the actress is called … **le personnage s'appelle …** the character is called …	**il est** he is **iel est** they are	**bavard** chatty **gentil** kind **intelligent** intelligent **jeune** young **vieux** old **de taille moyenne** mid-height **grand** big **petit** small **effrayant** scary **méchant** nasty **stupide** stupid **timide** shy
		elle est she is	**bavarde** chatty **gentille** kind **intelligente** intelligent **jeune** young **vieille** old **de taille moyenne** mid-height **grande** big **petite** small **effrayante** scary **méchante** nasty **stupide** stupid **timide** shy

Verb	Noun + Adjective	Adjective
il a he has **iel a** they have **elle a** she has	**les cheveux longs et** long hair **les cheveux courts et** short hair	**blonds** blonde **bruns** brown **noirs** black **roux** red
	les yeux bleus blue eyes **les yeux marrons** brown eyes **les yeux gris** grey eyes **les yeux verts** green eyes	
	une barbe a beard **une moustache** a moustache **des lunettes** glasses **des tatouages** tatoos	

Year 8 – Geography – Topic 8 – Our Urban World

What is urbanisation?

- Urbanisation is the process of a higher proportion of people living in urban areas than in rural areas.

What causes urbanisation?

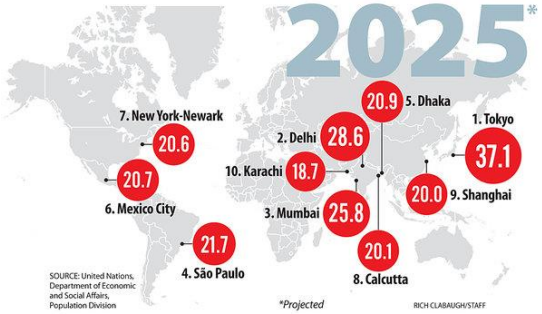
- Rural-urban migration is the main reason why urbanisation is increasing, particularly in developing and emerging countries.
- Push factors of rural-urban migration include: war, famine, drought, low-paid jobs.
- Pull factors of rural-urban migration include: better healthcare, better education, better-paid jobs.

What are some of the impacts of rapid urbanisation?

- More people available for jobs (larger workforce).
- Increased competition for jobs – some people end up in the informal sector (e.g. drug trade).
- Not enough housing so people live in informal settlements.
- Increased air pollution as more transport is being used.

Megacities

- A megacity is a huge city – where the population is 10 million or above.
- The map below shows where the 10 largest megacities are expected to be by 2025.



Life in the 'Slums'

- 'Slums' and 'Favelas' are just names given to informal settlements around the world.
- They are often built on the edge of cities, on the land that nobody wants.
- The houses are built out of scrap materials (e.g. metal and cardboard).
- There are few services like electricity and water, and there is very little healthcare.
- A lack of sanitation, and cramped conditions, means that diseases spread quickly.
- However, there is often a sense of community between residents and they look out for each other.

Push Factors	Pull Factors
• Poor living conditions • Conflict/War • Natural disasters • High levels of crime • Flooding • Lack of jobs • Lack of education • High levels of pollution • Lack of services (e.g. hospitals)	• Good healthcare • Good weather/climate • Lots of shops, cafes, services • Low levels of crime • Lots of jobs • Better education • Better quality of life/standard of living

Keyword	Definition
Contrast	Differences.
Development	Improving a person's or country's quality of life.
Drought	An extended period of time with less rainfall than normal.
Famine	Extreme scarcity (shortage) of food.
Food insecurity	Not having reliable access to a sufficient amount of affordable and nutritious food.
Inequality	When something is not equal.
Informal settlement	Settlements that cannot provide the basic living conditions necessary for its inhabitants to live in a safe and healthy environment.
Megacity	A city with a population of over 10 million.
Migration	The movement of people from one place to another.
Quality of life	The standard of health, comfort and happiness experienced.
Rural	Countryside.
Rural-Urban migration	People moving from the countryside to towns and cities.
Sustainability	Meeting the needs of today's population while protecting our planet and making sure we don't ruin it for future generations.
Unequal	Not balanced, not the same.
Urban	Built up areas, e.g. cities, towns.
Urbanisation	The process of a higher proportion of people living in urban areas than in rural areas.

Year 8 – Geography – Topic 8 – Our Urban World

Sustainability

- Sustainability is meeting the needs of today's population while protecting our planet and making sure we don't ruin it for future generations. Something sustainable is long-lasting.
- As the world population increases, the number of people living in cities also increases.
- If cities do not become more sustainable, resources (e.g. energy, food, water) could begin to run out, impacting the quality of life of millions of people.

What is a sustainable city?

- Economic sustainability involves making sure a city makes money and that its inhabitants make enough money for their needs.
- Environmental sustainability is protecting and improving the environment.
- Social sustainability is making sure people are happy and supported with good services, such as healthcare and education.
- A sustainable city needs to be economically, environmentally and socially stable.






Sustainable Transport

- Sustainable transport options are a key part of cities becoming more sustainable.
- Current transport releases greenhouse gases into the atmosphere (e.g. carbon dioxide, nitrous oxide) which can lead to increased global warming and climate change.

What options are there?

- Bikes – in many cities, particularly in the UK, cycle lanes are being developed to promote the use of bicycles. Additionally, bikes are available to hire (e.g. the Santander 'Boris' bike in London) in order to reduce traffic congestion and pollution.
- Electric Transport – introducing more electric cars and buses will help cities be more sustainable as they are better for the environment – reducing the amount of carbon dioxide and nitrous oxide released.
- Occupancy – encouraging people to share cars for journeys to work or school will help to reduce the number of cars on the road. This will reduce traffic congestion and the amount of greenhouse gases released.
- Public transport – encouraging people to use buses and trains, instead of cars, can help cities to become more sustainable. In many cities, there are bus lanes which can help speed up journey times.





Sustainable Building and Urban 'Green Spaces'

- Cities are having to become more sustainable in order to cope with the growing pressures of an increasing population.
- Sustainable agriculture is developed close to city hubs to limit transport.
- Regions are connected by local trains, bus lines and high-speed trains.
- City centres are compact and are connected to employment zones to reduce urban sprawl.
- In new 'sustainable cities' 50% of the ecosystems are protected.
- Buildings have sky gardens which promote natural air flow in buildings and providing shade.
- These sky gardens also increase the biodiversity of cities.
- Solar panels are incorporated into all surfaces of the building's exterior during construction capture the sun's energy.
- When creating streets, environmental monitoring and native landscaping are incorporated.





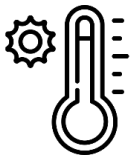
Year 8 – Geography – Topic 9 – Our Living World

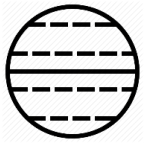
The Sustainable Development Goals

- The Sustainable Development Goals have been created by the United Nations. They aim to achieve a better and more sustainable future for all.
- The key themes of these goals are: no poverty, affordable clean energy, sustainable cities, taking action on climate change, and protecting life below water and on land.

Coral Reefs

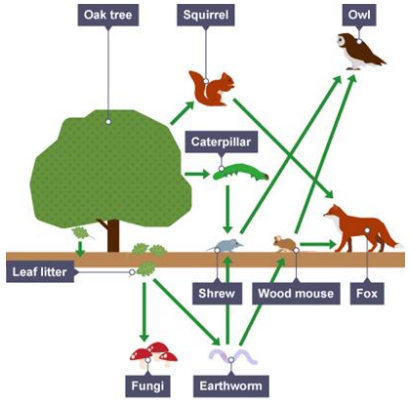
- Coral reefs are made from limestone (calcium carbonate from the seawater).
- Coral reefs need specific conditions to form. They can be found between 30°N and 30°S of the Equator, and cannot grow at depths of over 50m. The ideal temperature for coral reefs is 26°C – 27°C.
- These conditions mean that climate change is destroying the coral reef.
- Coral bleaching is where the warming of the ocean causes the coral reef to lose its supply of nutrients, leading to the coral dying and becoming white.
- The Deep Ocean is the largest habitat in the World, it has no light, no plants live there and is largely unexplored.





Food Chains and Food Webs

- Food chains and food webs show the transfer of energy between different living organisms.
- A food chain shows only one set of connections between organisms whereas a food web shows how these all interconnect.
- Plants and trees are the producers – they create their own food through photosynthesis.
- Consumers are unable to make their own food so they eat other organisms.
- Primary consumers are herbivores that eat only plants for their food (e.g. rabbits, deer, insects). Secondary consumers are carnivores that only eat primary consumers (e.g. spiders, foxes). Tertiary consumers eat the secondary consumers (e.g. owls).



Keyword	Definition
Adaptation	The process where an organism changes to become better able to live in its habitat.
Antarctica	Largest cold desert on Earth.
Buttress Root	A plant adaptation of the tropical rainforest that helps keep tall trees stable.
Canopy	The second tallest layer of the tropical rainforest.
Consumers	An organism that feeds on plants or other animals for energy.
Climate	The average weather conditions of a place over an extended period of time.
Coral Reef	An underwater ecosystem created by the exoskeletons of polyps.
Emergent Layer	The tallest layer of the tropical rainforest.
Endangered	A species that is at risk of extinction (dying out).
Food chains	A series of organisms each dependent on the next as a source of food.
Food Webs	An interconnected set of food chains showing how organisms rely on each other for food and energy.
Organism	Plants, animals.
Producers	An organism that creates its own food for energy (through photosynthesis).
Sahara	Largest hot desert on Earth.
Shrub Layer	The bottom layer of the tropical rainforest.
Sustainable	Long-lasting, meeting the needs of today without ruining the possibility for future generations.
Under Canopy	Layer of the tropical rainforest found between the canopy and the shrub layer

Year 8 – Geography – Topic 9 – Our Living World

The Tropical Rainforest

- The rainforest climate is humid (hot and wet) which has created the four layers of the rainforest: Shrub layer, under canopy, canopy, and emergent layer.

Emergent Layer

- Tallest trees (between 40m and 50m tall)
- Not a good habitat for animals to live in
- Gets most of the rain, wind and sunlight

Canopy

- Trees are around 25-35m tall
- Most of the trees are found in this layer and the tops create a thick canopy
- Majority of animals species live in this layer

Under Canopy

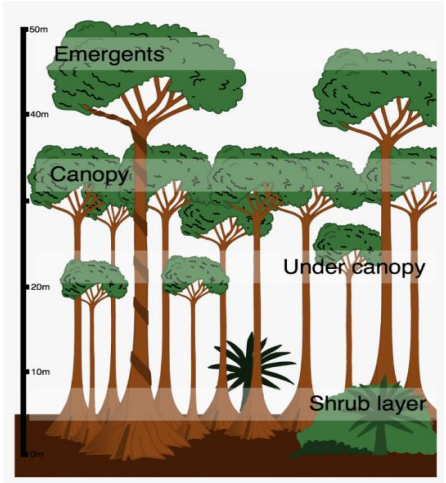
- Trees are around 20m tall
- Large leaves to catch any sunlight that makes it through to this layer

Shrub Layer

- Dark as canopy blocks out most sunlight
- Small trees between 0 and 10m
- Soil is poor quality so roots spread outwards to find nutrients

What are some adaptations of the tropical rainforest?

- Adaptations are how plants and animals have changed over time in order to survive in its environment.
- Trees in the emergent layer have adapted by having buttress roots. These roots are large, wide and help to stabilise the tallest of trees. They spread wide to gather nutrients in the poor quality soil.
- Sloths live in the rainforest. They have adapted by developing long claws to help them climb (giving them protection as the sloth can hide in the canopy layer), and by growing algae within the fur to act as camouflage from predators.



Deforestation

- Trees are cut down for social and economic reasons.
- Social: population is increasing which means we need more space for housing and farming (growing food).
- Economic: more money can be made from farming animals, trees need to be removed so we humans can extract minerals.

Deforestation Affects Animals

- Habitats are destroyed which might cause extinction of plant and animal species.

Biomes: The World's Ecosystems

- Biomes are large ecosystems spread across the world.
- Each biome has a different climate and varying biodiversity
- Factors that affect biomes: latitude and altitude

Examples of Biomes

- Tropical Rainforest: hot & wet all year, very high biodiversity
- Deserts: very hot all year, very dry all year, plants have deep routes to find water.
- Tundra: freezing temperatures for most of the year, low precipitation. Very few plants grow.

Deserts

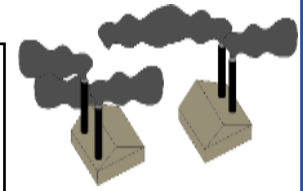
- To be classed as a desert, areas have to have less than 250mm of rainfall each year.
- Deserts are formed at around 30°N and 30°S of the Equator (where Hadley and Ferrel cells meet) and at 90°N and 90°S of the Equator (where two polar cells meet). This means that deserts can be hot or cold.
- The Sahara desert is an example of a hot desert – it is found in northern Africa (around 30°N of the Equator). As the Sahara is close to the Equator this means that the temperatures during the day are hot (around 40°C).
- Antarctica is an example of a cold desert – it is found in the southern hemisphere at around 90°S. Antarctica is situated at the south pole and the sun is low in the sky which means that the temperatures are very cold (around -57°C).
- In both hot and cold deserts, there is very little vegetation and few animal species can survive there. This is because of the extreme climate (either hot or cold temperatures and very little rainfall).

Year 8 – History – Industrial Revolution

1750 The population increased. More people moved to the cities. | Advance in technology from wind and water to steam and electricity. | Animals were replaced as transport. The invention of trams, trains and steam boats. | Jobs changed to factories rather than farming. | Pollution increasingly became a problem to people's health and environment. | People started going on holiday and shopping for leisure. **1900**

What was the industrial revolution?

Huge changes occurred in the way the people worked and lived in the 1700's and 1800's. This was the time when the manufacturing of goods moved out of people's homes into new steam powered factories.



Richard Arkwright

He opened Britain's first steal-powered cotton factory

Alexandra Graham Bell

He invented the telephone 1876

George Stephenson

He invented the first steam locomotive

Michael Faraday

In 1831, he discovered how to generate electricity

Isambard Kingdom Brunel

In 1833 he designed and built the Great Western Railway

Crime in the Industrial Revolution

Crimes

- Theft of items worth 25p or more
- Murder
- Treason
- Coining
- Kidnapping

Britain's first official police force was set up in 1829 by Sir Robert Peel as an answer to the growing crime rate in Britain. They became known as **'Beat constables'** due to the way they worked a 'beat' or walked a set route.

What were the living conditions like?

- Due to the overcrowding in cities housing conditions were cramped and damp with poor ventilation.
- As it was hard to get water, people found it difficult to wash and clean. This spread diseases.
- The Industrial Revolution brought smog, a chemical compound of smoke and fog, which was constantly present in the skies.
- There was no waste collection so the streets became a dumping ground.
- Most houses did not have piped water. People had to get water stand pipes, wells streams or rivers.

Cadburys

By 1878, the Cadbury brothers had been running a very successful chocolate business with their factory in the centre of Birmingham.

They had 200 workers and needed more space! The brothers decided to find a place for their factory outside of the city and in the countryside. They built Bourneville village – this included affordable housing in pleasant surroundings for their workers.

Cadbury introduced a Saturday half-day of work and half day off. They were the first owners to close the factory on Bank Holidays. Cadbury encouraged sport and created sports facilities for their workers

The Mill

Children were forced to work in factories. They would be forced to children were hunched work long hours for little or no pay. They ended up with health problems from doing hard labour from a young age.

Year 8 – History – Industrial Revolution

Workhouses

A workhouse was a place where people were sent to if they could no longer look after themselves and their families. People who were seen to be criminals would have to wear different clothes to identify them! There would sometimes be a cell or punishment room and people would be locked in there for breaking the rules!

Public health

Public health was a problem for people for a number of reasons: poor hygiene, lack of sewers, poor knowledge of disease, cholera, lazy landlords and lack of government action!

A lack of knowledge about the dirty conditions they lived in meant diseases were able to spread quickly. Many people did not understand hygiene linked to health.

How did Factories change?

1833 Factory Act

No children under 9 to work in the factories. Nine hour days for children aged 9-13 Factory inspectors appoi nted

1844 Factory Act

No women to work more than 12 hours per day. Machines to be made safer.

1895 Factory Act

Children under 13 to work a maximum of 30 hours per week. (they still had to work but there was now a limit)

Industrial	A group of businesses that make or sell similar products or perform similar service
Revolution	A very sharp change made to something
Manufacture	To make (something) on a large scale using machinery
Inventor	A person who created a particular process or device
atmosphere	The tone or mood of a place
Execution	To kill someone accused of a crime
Treason	Disloyalty to the monarch
Factory	A building where goods are manufactured
Agriculture	Farming of crops or animals
Poverty	The state of being extremely poor
Public Health	The health of the population
Entrepreneur	Someone who creates a business
Workhouse	Place of work for poor people
Cadbury	The chocolate making business
Reform	To make change
Hygiene	Maintaining health and preventing disease
Disease	An illness caused by germs
Inspectors	A person employed to ensure that regulations are followed
Pollution	Harmful toxins in the environment

Year 8 – History – Slavery and Empire

Where was the empire?

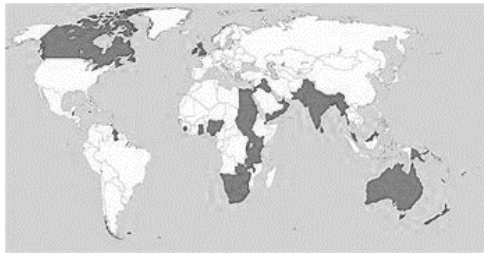
- At its peak, the British Empire controlled nearly 25% of land on earth.
- Colonies were in North/South America, parts of Africa, India, South East Asia, and Oceania.
- Britain conquered many countries within Africa specifically and ruled over 30% of people living in the entire African continent. (Some were: Egypt, Sudan, Nigeria, Ghana, Uganda, South Africa, and many more).
- Many people from Africa were enslaved by Britain and other European empires.

Why did Britain want an Empire?

- Britain wanted more wealth, power and resources.
- It looked to other countries to gain these items from by using its military or sometimes through trade.
- Britain could gain the most benefits by taking control of other countries and diverting each colony's wealth back into the empire.
- Britain also wanted to bring their idea of 'civilization' to what they saw as 'uncivilised' countries.

What was Africa like before the Empire?

- Before the slave trade and empire, Africa was rich in natural resources, head lots of wealth through trade, and was made up of many different vibrant communities and cultures across many different countries.
- The slave trade and colonisation devastated many of these countries with impacts that are still visible globally today.



Important figures

Olaudah Equiano Wilberforce

Toussaint Louverture

Harriet Tubman

Queen Victoria

William

What was the Slave Trade?

- From the 1400s European traders forcefully took African people from their homes.
- At its peak, slaves were transported by ship from Africa to the Americas to be sold to plantation owners to produce resources like tea, coffee, sugar and tobacco.
- The journey to America (the Middle Passage) was horrific and could take several months. Many people died on this journey.

Conditions on a plantation

- A slave would be expected to work for most of their life. They only had short life expectancies. As young as 26.
- Some would work in the plantation owners house as a cook or maid. But most worked out on the fields.
- As young as nine they would farm on the fields.
- All slaves had to do hard work with a poor diet and harsh punishments.

Slave auction

- Slaves would be sold at an auction.
- People would go to the auctions and bid on the people they wanted to buy.
- Slaves were treated as property and not as people.

What was the resistance to the slave trade?

- Due to the conditions slaves experienced on-board slave ships and working on plantations, some slaves fought to resist and abolish slavery.
- This resistance could be through fighting for freedom with violence, refusal to work, escaping/ running away, learning to read/ write or falling in love. Abolitionists tried to convince people that slavery was wrong by speaking about it in court and parliament.

The abolition of slavery

- The actions of the slaves eventually led to slavery being abolished in the British empire in 1833.

Key Words

Slave	A person who is the legal property of someone else and forced to work for no pay. They are refused basic freedoms/ human rights.
Triangular Trade	The buying, selling and using of slaves between Europe, Africa and the Americas.
Colony	A country that has been taken over and is ruled by another country.
Empire	A group of countries all ruled over by one more powerful country.
Imperialism	The aim of increasing a country's power/ influence through military power and trade.
Plantation	A farm where slaves lived and worked for their masters. Plantations often grew tobacco, sugar, tea and cotton for the empire.
Resistance	To rebel against a higher power. E.g. fight against the higher power, refuse to work, or disrupt production/ trade.
Legacy	What is left behind after a thing or person no longer exists.
Abolition	Ending or stopping something. E.g. Abolish slavery = end slavery
Abolitionist	A person trying to end/ stop something.

Year 8 Term 2 – PRE – How challenging is it to be a teenage believer today?

Key Words:

Commitment: Dedicating yourself to something
Sacrifice: Give something up for the sake of others/faith
Charity: Giving help or money to those in need
Hijab: A head covering worn by some Muslim women
Niqab: A veil or face covering worn by some Muslim women
Halal: An action which is allowed in Islam. Often used to describe food and the way meat is slaughtered
Haram: Acts that are forbidden in Islam
Ramadan: An Islamic period of fasting (giving up food & drink in the hours of sunlight)
Zakat: An Islamic duty to give 2.5% of their earnings to charity
Amrit Ceremony: Ceremony within Sikhism to commit fully to the faith
Kesh: Uncut hair. The act of allowing hair to grow naturally out of respect for God's creation (Sikh practice)
Kachera: Cotton underwear worn by baptised Sikhs
Kirpan: A sword or knife carried by baptised Sikhs
Kara: A steel or cast iron bangle worn by baptised Sikhs
Kanga: A small wooden comb that baptised Sikhs usually use twice a day. It is supposed to be kept with the hair at all times
Sewa: Selfless service

Islam

Commitments

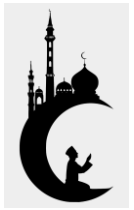
5 Pillars

- The Five Pillars of Islam are the five duties that every Muslim must satisfy in order to live a good and responsible life according to Islam
- **Shahadah**: sincerely reciting the Muslim profession of faith
- **Salat:** performing ritual prayers in the proper way five times each day
- **Zakat:** paying a tax to benefit the poor and the needy
- **Sawm**: fasting during the month of Ramadan
- **Hajj:** pilgrimage (religious journey) to Mecca

Religious Dress

- Both men and women are required to dress modestly (respectfully)
- Muslim women have special clothes which they sometimes **CHOOSE TO WEAR** in order to protect their modesty.

Ramadan



- Most Muslims fast between dawn and sunset during the month of **Ramadan**.
- Fasting allows Muslims to devote themselves to their faith. It is thought to teach self-discipline and reminds them of the suffering of the poor.
- However, children, pregnant women, elderly people and those who are ill or travelling don't have to fast.

Zakat

- It is a Muslims duty to give 2.5% of their earnings to charity (**Zakat**)
- This is compulsory, and must be given after a Muslim's family has been taken care of.
- The rich pay more than those with less money and very poor people pay nothing at all.
- Muslims give to charity because they see wealth as a loan from **Allah** (God).
- These donations help Muslims to purify their souls by not being greedy.
- The Qur'an states ***'practise regular charity.'***

Sikhism

Commitments

Amrit Ceremony:

- This is where Sikhs are officially welcomed into the religion of Sikhism.
- It is a form of baptism and Sikhs become baptised Sikhs.
- Sikhs can go through this ceremony when they are old enough to understand the commitments they are making.
- Sikhs will make a set of promises to Waheguru (God) including to avoid **eating meat and drinking alcohol, and to wear the 5Ks**.
- Once they have gone through the ceremony, they are a member of **the Khalsa**. This is the group of committed Sikhs who vow to stand up against injustice and follow the Rehat Maryada, the Sikh code of conduct.
- Once they have joined the Khalsa, a Sikh is known as an **amritdhari** Sikh.

Religious Dress

5Ks

- Sikhs who are baptised should wear the 5 Ks. These are items which symbolise their dedication to Waheguru (God)
- **Kesh**: Sikhs must not cut their hair, for example Sikh men are forbidden to trim their beards.
- **Kara**: A steel bangle. A symbol of Waheguru having no beginning or no end.
- **Kanga:** Wooden comb. This symbolises a clean mind and body, since it keeps the uncut hair neat and tidy. It symbolises the importance of looking after the body which God has created.
- **Kachera**: Cotton underwear. It's a symbol of chastity. Chasity means that a person should be pure, faithful and refrain from sexual intercourse.
- **Kirpan**: A small, ceremonial sword. The Kirpan is supposed to be a weapon of defence only and many Sikhs carry around a symbol as opposed to an actual sword.

Sewa: Selfless Service

- One key duty for Sikhs is to perform **sewa**, meaning selfless service.
- Sikhs have a duty to do selfless things for others, without expecting anything in return.
- There are different types of sewa:
- **Tan (physical sewa)** for example serving in the langar, the Sikh free kitchen.
- **Man (mental sewa):** using your mind to help others e.g. reading the Guru Granth Sahib or teaching others
- **Dhan (material sewa):** giving something up, for example money. Sikhs are expected to give 10% of their income to charity. This is a form of dhan, known as **dasvandh.**