

Name and Tutor group:



Year 8 Knowledge Organiser

Term 1

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CORSHAM CHARACTER

INTELLECTUAL VALUES

The pursuit of truth,
knowledge and
understanding.

Be reflective. Be curious. Be
open-minded. Be creative.



PERFORMANCE VALUES

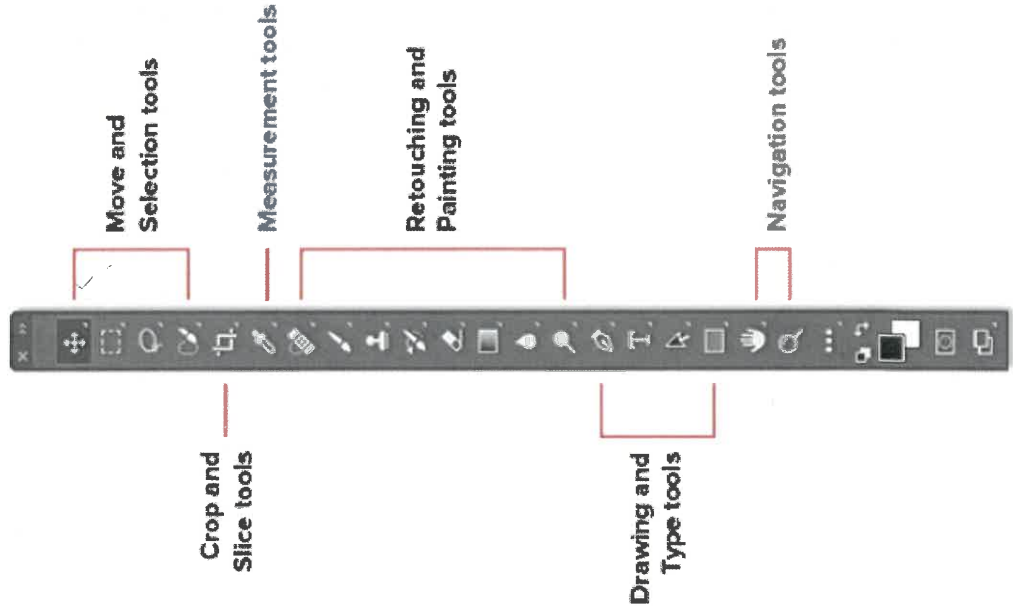
Maximum effort, maximum
focus.

Be resilient. Always Persevere.
Contribute to Teamwork.
Be ambitious.



DREAM BELIEVE ACHIEVE

Photoshop Tools Layout



Year 8 – Photoshop

Move Tool	used to move items around
Marquee Tool	used to make selections. There are four different types which are: Rectangular - This will make a Rectangular selection Elliptical - This will make a Elliptical selection Single-Column - This will make a Column selection Single-Row - This will make a Row selection
Lasso	used to make selections. There are three different types which are: Lasso - This can make free hand selection PolygonalLasso - This will make selection with lines MagneticLasso - This will make selection by shaping onto objects.
Quick Selection	used to make selection of objects by painting on them with an adjustable brush.
Crop	used to trim images.
Eraser	used to erase pixels of an image.
Brush Tool	Paints a brush stroke.
Pencil Tool	Paints are hard-edge stroke.
Gradient	This tool can be used to make a straight-line, radial, angle, reflected, and diamond blends between colors.
Paint Bucket	Fills similar coloured areas with the foreground colour
Pen	This tool can be used to create smooth-edged paths. You can use the Freeform Pen to create paths free-handed.
Type Tool	creates a text box which can be used to type text into.
Shape Tools	used to create shapes. There are six different types of shape tools which are: Rectangle Rounded Rectangle Ellipse Polygon Line Custom Shape
Hand	This tool can be used to move an image within the window.
Zoom	Zoom in and out.
Magic Wand tool	Selects the pixels with similar colors in a single click
Spot Healing Brush tool	Removes spots from your photos
Clone Stamp tool	Paints with an image sample, which you can use to duplicate objects, remove image imperfections, or paint over objects in your photo
Dodge tool	Lightens areas of an image. You can use the tool to bring out details in shadows
Burn tool	Darkens areas of the image. You can use the tool to bring out details in highlights
Eye tool	Removes the red eye effect, pet eye effect, and corrects closed eyes in your photos.

For GCSE drama, you need to understand and be able to apply techniques from different genres of performance. This genre is COMEDY



Background

Form of theatre that originated in Italy in the 16th Century
Based on improvised scenes of LAZZIS
All characters would “Clock the audience” before their performance started

Most characters wore masks
The same STOCK characters were in each performance
There was lots of audience interaction

The pieces were performed outside, often in busy towns
There were very few props or scenery
There was lots of stage fighting

Sound effects were key
Women could not be in any performances
It is believed to be the origin of COMEDY



Characters

ARLECHINNO- Acrobat, servant character, able to stop time. In love with COLUMBINA, Pick Pocket, long – pointy nose mask. Character centre - NOSE



COLUMBINA- Female character, large chest, no mask, flirty, often slapped male characters.
Character centre - CHEST



IL DOTTORE- Drunk, “doctor” character, slurred words together, extremely fat, wore a mask and red cheeks. Character centre - TUMMY



PANTELONE- Master or ARLECHINNO, in love with COLUMBINA, flirty and over friendly, loves money.
Character centre - GROIN



How can you create humour without the use of words?
Why was it important that the characters had specific masks?
How would you mark the moment of Arlecchino freezing time?

Why were there few props / scenery?
What is a STOCK CHARACTER?
What role do sound effects play in this genre?



Year 8 Graphics: Pop-up book

DESIGN AND TECHNOLOGY

Tools, Techniques, Materials and Equipment

Paper



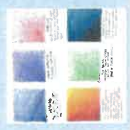
A compliant material made from wood pulp.

Board



Used for packaging, model making, photography and greeting cards.

Colour Rendering



A colour technique used for professional finish in DT.

Scoring



A method to create accurate folds.

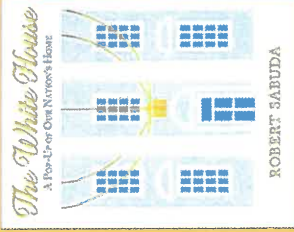
Craft knife



To accurately cut paper.

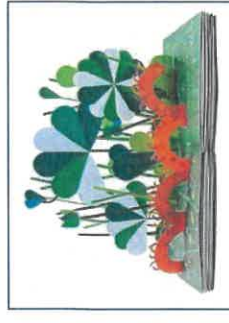
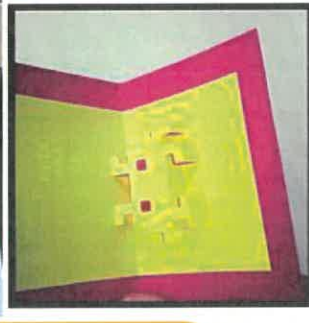
Robert Sabuda

The American illustrator who creates pop-up books.



Keywords

Robert Sabuda
Product
Image
Analyse
Paper Sizes
Typography
Fonts
Printing
Processes
Story Board
Card
Mechanisms
Card Modelling
Shading
Rendering
Rotary
V-fold
Internal
Stand
Mouth and Slide



Health and Safety in DT:

- Listen to your teacher's instructions
- Always wear an apron
- Long hair should be tied back
- Don't use equipment you are not trained on
- Always stand up during practical lessons
- When using machines, always wear safety glasses
- Only use the stop button in an emergency
- Work quietly and be sensible and careful at all times



What is good design?

Clear ideas
Annotations
Measurements
Content
Presentation
Balance

Maths in DT:

Multiplication
Divide
Add / Subtract
Measurement conversion
Ratios
Percentages
Surface area

KS3 Year 8 Design and Technology CAD CAM: Board Games



CAD: Computer Aided Design

CAM: Computer Aided Manufacture



Adobe Illustrator

Adobe Illustrator is the industry-leading graphic design tool that is a professional vector-based design and drawing program. Used as part of a larger design workflow, Illustrator allows for the creation of everything from single design elements to entire compositions.

TinkerCAD

Is a 3D modelling platform that has been launched by Autodesk – a industry leading program. It allows you to create 3D models on the computer.

Key words

Vector	CAD/CAM	Automation
3D printing	Illustrator	Additive
Graphics	TinkerCAD	ACCESSFM

3D printing

3D printing is an additive technology used to manufacture parts. It is 'additive' in that it doesn't require a block of material or a mold to manufacture physical objects, it simply stacks and fuses layers of material. It's typically fast, with low fixed setup costs, and can create more complex geometries than 'traditional' technologies, with an ever-expanding list of materials. It is used extensively in the engineering industry, particularly for prototyping and creating lightweight geometries.

Tools and Equipment

CAD CAM

3D printer



3D printing or additive manufacturing is the construction of a three-dimensional object from a CAD model or a digital 3D model.

Template



A template is a tool used to mark out shapes repeatedly

Maths in DT:

Multiplication
Divide
Add / Subtract
Measurement conversion
Ratios
Percentages
Surface area

What is good design?

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KS3 YEAR 8 D&T RESISTANT MATERIALS

Orthographic Drawing

Cutting	
Tenon saw	A hand saw with a stiff back used to cut straight lines in wood – back saw action
Coping saw	A hand saw used to cut complex shapes in wood and plastic
Scroll saw	A machine saw used to cut complex shapes in wood and plastic
Bench hook	Held against the front edge of a bench or table to support work
Pillar drill	A machine used to make holes in materials
Chisel	Used for carving or cutting a hard material such as wood, stone, or metal by hand
Laser cutter	CAM: Laser cutting is the use of a high-powered laser to cut, etch and engrave your material

Mechanical Devices

Motion

LINEAR MOTION

ROTARY MOTION

RECIPROCATING MOTION

OSCILLATING MOTION

Linkages

Reverse Action Linkage

Parallel Motion Linkage

Ball Crank Linkage

Forces

compression tension bending torsion shear

Types of cams

Different shaped cams are used for different tasks:

- Eccentric cam
- Pair cam
- Shell cam
- Heart-shaped cam

Lever

Class 1: Effort and Load on opposite sides of the fulcrum.

Class 2: Load between fulcrum and effort.

Class 3: Effort between fulcrum and load.

Pulley

Diagram showing a pulley system lifting a 10 kg object with a 10 kg force.

Tools and Equipment	
Measuring and marking	
Steel rule	An accurate tool for measuring and marking out
Try square	A tool used to check right angles on wood or plastic
Template	A template is a tool used to mark out shapes repeatedly
Jig	A tool used to control the location and/or motion of another tool
Shaping and finishing	
Metal file	Used to shape or smooth wood, metal or plastic
Glass paper	An abrasive paper used to smooth the surface or edges of wood
Disc sander	A machine used to smooth the edges of materials

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Keywords

Research Pulley
Design Linkage
Evaluation Lever
Wood joint Motion
Mechanical Force

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Maths in DT:

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Traditional wood joints:

Butt Joint
Lap / Rebate Joint
Finger Joint
Dovetail Joint
Mitre Joint

KS3 YEAR 8

Tools and Equipment

Measuring and marking

Measuring Tape



Fabric tape measure used to measure

Tailor's chalk



A temporary mark on fabric

Template / Pattern



A template / pattern is a tool used to mark out shapes repeatedly

Constructing

Sewing needle



Helps to sew fabric together

Embroidery needle



A needle with a larger eye to accommodate embroidery thread

Sewing machine



Machine sews fabric together

Pins



A temporary method to hold fabric in place

Tacking stitch



A temporary stitch to hold fabric together

Textiles Dyes:

Natural Dyes

- Plants
- Food / spices
- Grass / tree bark / leaves
- Onions / beetroot
- Cochineal



Chemical Dyes
Dyes which are man-made using chemicals: consistent and vibrant.

Fibre Categories:

Natural Fibres

Plant based natural fibres:

- Cotton
- Linen
- Flax
- Coir (coconut)



Animal based natural fibres:

- Wool
- Angora
- Silk



Man-made Fibre

- Polyester
- Acrylic
- Nylon

Fabric Construction:

Woven

Knitted

Bonded



Keywords

- Islamic
- Religion
- Design
- Product analysis
- Research
- Evaluation
- Stitch
- Scissors
- Sewing machine
- Customer
- Environment
- Function
- Material
- Seam allowance
- Hem
- Tie-Dye
- Printing
- Tessellate
- UCD
- Mordant

Cutting

Fabric shears



Scissors used for cutting fabric

Thread scissors



Scissors used for cutting thread

Stitch ripper



Used for removing sewn stitches from fabric

Pinking shears



Creates a zig zag cut edge for decoration to prevent fraying

Adding Colour

Tie-dye



A type of resist dye

Batik



A type of resist dye which uses wax

Block Printing



Engraved wooden blocks to produce repeat patterns

Fabric paint / pens



Paint / pens which can be applied to fabrics

Element s that make up Islamic Design:

- Calligraphy
- Floral
- Geometry

Maths in DT:

- Multiplication
- Divide
- Add / Subtract
- Measurement conversion
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- Percentages
- Surface area

What is good design?

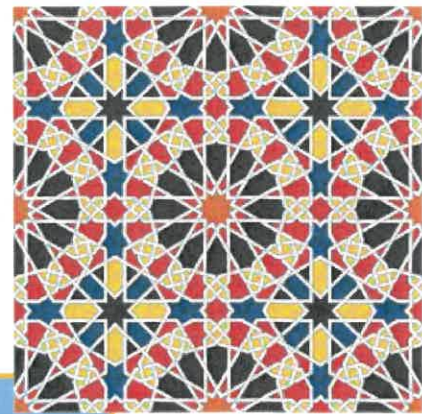
- Clear ideas
- Annotations
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DT TEXTILES



- A** is for **Aesthetics**
- C** is for **Cost**
- C** is for **Customer**
- E** is for **Environment**
- S** is for **Size**
- S** is for **Safety**
- F** is for **Function**
- M** is for **Material**

FIGURATIVE LANGUAGE DEFINITIONS

- Alliteration:** use of the same consonant at the beginning of adjacent or closely connected words.
- Extended metaphor:** series of linked metaphors.
- Hyperbole:** exaggeration to emphasise a point.
- Metaphor:** comparing one thing to another, directly, in a way that isn't literally true.
- Onomatopoeia:** a word whose sound suggests its meaning.
- Pathetic Fallacy:** giving human emotions and conduct to things found in nature.
- Personification:** giving human qualities to non-human things.
- Sibilance:** use of the 's' sounds in quick succession.
- Simile:** a comparison of two things that uses the words 'like' or 'as'.

USEFUL DEFINITIONS

- Connotation:** the meaning created by association.
- Emotive Language:** language used to create a particular emotion in the reader.
- Figurative Language:** Using language techniques to describe something in a non-literal way.
- Inference:** using observations to reach a conclusion.
- Semantic field:** a group of words related in meaning.

ELEMENTS OF WRITTEN ANALYSIS

WHAT?

MAKE A STATEMENT
POINT



HOW?

LOOK AT THE TEXT AND TECHNIQUES
EVIDENCE



MEANS? SUGGESTS?
ANALYSIS



WHY?

MAKE DEVELOPMENTS
LINKS



FORM AND STRUCTURE DEFINITIONS

- Form:** the overarching structure or pattern of the poem - how it looks on the page.
- Ballad:** dramatic story poem with four-line stanzas.
- Closed form:** poems written in specific patterns.
- Free Verse:** No regular rhyme or rhythm.
- Open form:** a structure that doesn't have to follow traditional or specific patterns.
- Sonnet:**
- Shakespearean – 14 lines, typical love poem
 - Petrarchan – eight lines (octave)rhyming ABBAABBA, and six lines (sestet) CDCDCD.
-
- Structure:** refers to how the poem is presented. For example: stanzas/lines/syllables/rhyme etc.
- Caesura:** a pause in the middle of the line, often marked by punctuation or grammar.
- Enjambment:** the continuation of a sentence or clause across a line break and/or stanza.
- Iambic Pentameter:** 5 sets of stressed/unstressed beats on a line.
- Refrain:** repeated lines (like a chorus in singing).
- Rhyme Scheme:** The pattern of lines that rhyme in a poem.
- Rhythm:** the beat and pace of a poem, created by the pattern of stressed and unstressed syllables in a line or verse.
- Rhyming couplet:** two consecutive lines that end with the same sound.
- Stanza:** the division of a poem consisting of two or more lines arranged together as a unit.

What and where are Tropical Storms.

They are known by many names, including **hurricanes** (North America), **cyclones** (India) and **typhoons** (Japan and East Asia).

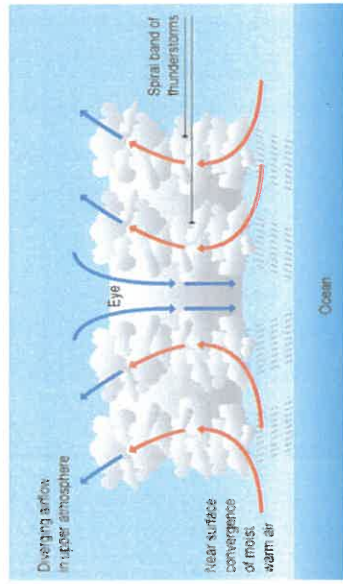
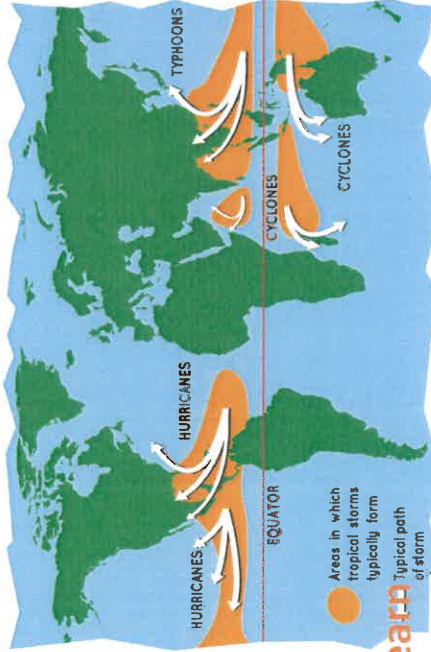
They all occur in a band that lies roughly between the tropics of Cancer and Capricorn and despite varying wind speeds are ferocious storms. Some storms can form just outside of the tropics, but generally the distribution of these storms is controlled by the places where sea temperatures rise above 27°C.

Yr8 Geog: Can we ever fully learn to live with climatic hazards? Storm Surges



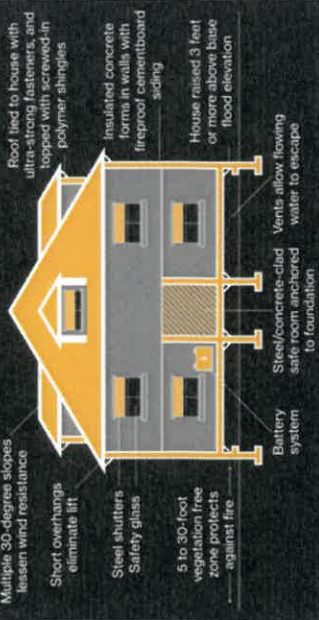
Key words:

Enhanced greenhouse effect
Solar radiation
Re-radiation
Sea level rise
Sea surface temperatures
Latitude
Coriolis Effect
Storm surge
Strong winds
Intense rainfall
Mitigate
Storm-proof buildings
Social
Economic
Environmental
Heatwave
Drought
Flooding



A Home Built for Extreme Weather

Strategies to increase the chances of surviving climate disasters
Multiple 30-degree slopes lessen wind resistance



Bloomberg

Formation of Tropical Storms

- 1 The sun's rays heats large areas of ocean in the summer. When the ocean temperature exceeds 27.5 degrees a tropical storm can form.
- 2 The rising warm moist air leads to a low pressure weather system. This eventually turns into a thunderstorm. As long as there is only a gentle breeze the clouds will remain compact.
- 3 Due to the Earth's rotation the thunderstorm will eventually start to spin. (anticlockwise in the northern hemisphere) This is called the Coriolis effect.
- 4 When the spinning clouds produce winds of stronger than 74mph, a tropical storm is officially born. In the centre of the storm is a high pressure cloudless area called "the eye".
- 6 When the tropical storm hit land, it loses its energy source (the warm ocean) and it begins to lose strength. Eventually it will 'blow itself out'.

Hazards of tropical storms

Strong winds	It is the wind speed that dictates what category a tropical storm is allocated. A category 5 can rip off roofs, send shrapnel flying which can injure or block evacuation routes.
Torrential rain	Rain can cause flooding inland as river burst their banks plus also landslides as the water makes the slopes unstable.
Storm surge	The most significant hazard. Storm Surges are caused by a rise in sea level under the tropical storm. This causes the sea to flood inland, especially in low lying flat countries. The sea water can destroy poorly built houses, roads and block emergency services.

How can we reduce the impact of tropical storms

Predicting and warning	Computers can predict the paths of tropical storms and give warnings to countries that might be affected. This can happen for all countries, however it is the effectiveness of the evacuation that determines how successful the management will be.
Protecting buildings	The level of protection will depend on the level of development for each area. New buildings can be designed to be storm proof and on stilts to protect from flooding. Other buildings can have emergency generators installed, shutters on the windows to stop glass from shattering and trees removed from gardens to reduce debris.
Plan	Evacuation routes are planned and people know where the evacuation shelters are. An emergency survival kit is ready to go

Enquiry: What was the significance of the slave trade?

Outline: Between the 16th and 19th centuries, European merchants transported an estimated 12.5 million African people across the Atlantic to work in slavery in the Americas.

Date	Event	Description
1562	Start of the slave trade	Sir John Hawkins was given permission by Elizabeth I to begin transporting captured Africans to America. There they were sold
1781	Zong massacre	The killing of 133 African enslaved people by the crew of the British slave ship Zong. They were thrown overboard so that the ship owner could claim compensation from his insurance.
1804	Haitian revolution	Haiti was named by enslaved people who rebelled against their masters led by Toussaint Louverture.
1807	UK abolished the slave trade	After a long campaign by many different people, the British parliament voted to end Britain's active participation in the slave trade.
1833	Slavery abolished in the British Empire	Britain stopped slavery in the lands under their control around the world. Compensation was agreed for slave owners for their loss of income.
1865	End of slavery in the USA	President Lincoln freed all enslaved people in the USA after the end of the American Civil War where the North had won.



Furthering learning
Want to find out more about the slave trade?



Prior learning?

Y7: colonisation unit on the start of the British Empire. Mansa Musa

History – Year 8 Knowledge Organiser Topic 1

Key individuals



Olaudah Equiano bought his freedom and then campaigned to end slavery for others.



Harriet Tubman. Escaped from slavery and then risked her life to free 300 other enslaved people on the Underground Railroad



Toussaint Louverture. Led a successful rebellion of enslaved people in Haiti.



Abraham Lincoln US president who freed enslaved people at the end of the American Civil War.



Key vocabulary:

- Abolition:** the ending of the slave trade when it was abolished.
- Abolitionist:** someone who campaigned to end slavery.
- Auction:** a market to sell goods to the highest bidder.
- Branding:** to mark a person or animal with a hot iron to show ownership.
- Cargo:** goods that are being transported to be traded.
- Dehumanise:** the process where people are treated as though they are less than human, for example taking away their names and splitting up families.
- Middle Passage:** the crossing over the Atlantic that enslaved people took from Africa to America.
- Plantation:** a farm where enslaved people worked to grow crops like sugar or coffee.
- Shackles:** iron chains used to control enslaved people and make it more difficult to run away
- Triangular trade:** A three part trading journey.
 1. European ships took cloth, guns, iron pots, swords to Africa and exchanged them for people.
 2. Ships loaded with people crossed the Atlantic to America where they were sold.
 3. Ships loaded with sugar, cotton, tobacco returned to Europe.
- Underground railroad:** a secret organisation that helped enslaved people to escape from the South to the North in the USA.

Enquiry: What was the significance of the slave trade?

Historical skill focus: using evidence

- What is the nature, origin and purpose of a source?
- What makes a source useful?

What to focus on

What is the **NATURE** of the source? Does this make it useful?

What is the **ORIGIN** of the source? Does this make it useful?

What is the **PURPOSE** of the source? Does this make it useful?

Starting sentences

Source A is useful because...

This is shown by...

The source is also useful due to its purpose which was to...



Nature = type of source like a painting or letter
 Origin = date made and who made it
 Purpose = why it was made = motivate/justify/persuade

History – Year 8

Knowledge Organiser
 Topic 1

An American drawing of a Hiring Day in 1830 where enslaved people were bought at auction.



Section A: using evidence

Write at least two paragraphs to answer this question:

How useful is Source A to tell a historian about the slave trade.

Developing

I can make inferences using a source.

I can ask questions about sources such as who made the source or when it was made

Secure

I can explain how a source can be useful/not useful in a PEE paragraph.

I am starting to think about the nature, origin and purpose of the source and what its impact could be.

Exceeding

I can explain how useful a source is and then make a judgement based on this information. I can write this in a PEEL paragraph.

I can accurately comment on the purpose of a source.

Point = One way the source is useful is...

Evidence = This is shown by the nature of the source...

Explain = This is useful because...

YEAR 8 - PROPORTIONAL REASONING...

Ratio and Scale

@whisto_maths

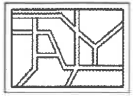
What do I need to be able to do?

- By the end of this unit you should be able to:
- Simplify any given ratio
 - Share an amount in a given ratio
 - Solve ratio problems given a part

Solutions should be modelled, explained and solved

Keywords

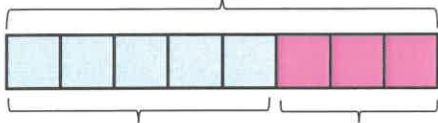
- Ratio:** a statement of how two numbers compare
Equal Parts: all parts in the same proportion, or a whole shared equally
Proportion: a statement that links two ratios
Order: to place a number in a determined sequence
Part: a section of a whole
Equivalent: of equal value
Factors: integers that multiply together to get the original value
Scale: the comparison of something drawn to its actual size



Representing a ratio

"For every 5 boys there are 3 girls"

This is the "whole" - boys and girls together



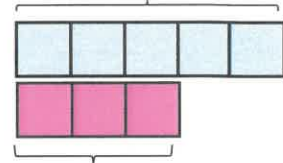
This represents the 5 boys

This represents the 3 girls

5:3

This represents the 5 boys

Double Number Line



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
1:2

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

e.g. 2:1 would represent 2 dogs for every 1 cat. ✗

Simplifying a ratio

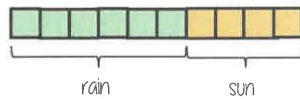
Cancel down the ratio to its lowest form

"For every 6 days of rain there are 4 days of sun"

6:4

+ by 2 ↓

3:2



Find the biggest common factor that goes into all parts of the ratio

For 6 and 4 the biggest factor (number that multiplies into them is 2)

"For every 3 days of rain there are 2 days of sun" - when this happens twice the ratio becomes 6:4.

Ratio In (or n:1)

This is asking you to cancel down until the part indicated represents 1

Show the ratio 4:20 in the ratio of 1:n

The question states that this part has to be 1 unit. Therefore Divide by 4

4:20
1:5

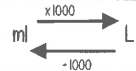
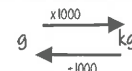
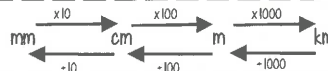
This side has to be divided by 4 too - to keep in proportion

*If the n part does not have to be an integer for this type of question

Units are important:

When using a ratio - all parts should be in the same units

Useful Conversions



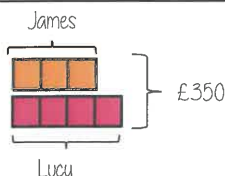
Sharing a whole into a given ratio

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)

$$£350 \div 7 = £50$$

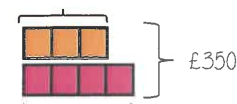
□ = one part = £50

Put back into the question

James: Lucy

(x50) 3:4 (x50)
→ £150:£200

$$\text{James} = 3 \times £50 = £150$$



$$\text{Lucy} = 4 \times £50 = £200$$

Finding a value given In (or n:1)

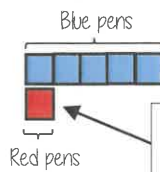
Inside a box are blue and red pens in the ratio 5:1
If there are 10 red pens how many blue pens are there?

Model the Question

Blue: Red

5:1

□ = one part = 10 pens



Put back into the question

Blue: Red

(x10) 5:1 (x10)
→ 50:10

$$\text{Blue pens} = 5 \times 10 = 50 \text{ pens}$$



$$\text{Red pens} = 1 \times 10 = 10 \text{ pens}$$

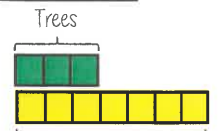
There are 50 Blue Pens



Ratio as a fraction

Trees: Flowers

3:7



There are 3 parts for trees

Flowers

Fraction of trees

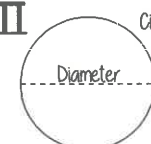
Number of parts in a group

Total number of parts

3
10

Tree parts 3 + Flower parts 7 = 10

π



Circumference

Diameter

The ratio of a circle's circumference to its diameter

YEAR 8 - PROPORTIONAL REASONING...

Multiplicative Change

@whisto_maths

What do I need to be able to do?

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


- Solve problems and explain direct proportion
- Use conversion graphs to make statements, comparisons and form conclusions.
- Understand and use scale factors for length

Keywords

- Proportion:** a statement that links two ratios
- Variable:** a part that the value can be changed
- Axes:** horizontal and vertical lines that a graph is plotted around
- Approximation:** an estimate for a value
- Scale Factor:** the multiple that increases/ decreases a shape in size
- Currency:** the system of money used in a particular country
- Conversion:** the process of changing one variable to another
- Scale:** the comparison of something drawn to its actual size.

Direct Proportion

As one variable changes the other changes at the same rate.



4 cans of pop = £2.40

2 cans of pop = £1.20

12 cans of pop = £7.20

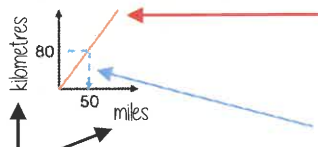
This multiplier is the same in the same way that this would be for ratio

Sometimes this is easiest if you work out how much one unit is worth first. e.g. 1 can of pop = £0.60

This is a multiplicative change

Conversion Graphs

Compare two variables



This is always a straight line because as one variable increases so does the other at the same rate

To make conversions between units you need to find the point to compare — then find the associated point by using your graph. Using a ruler helps for accuracy. Showing your conversion lines help as a "check" for solutions

Labelling of both axes is vital

Conversion between currencies

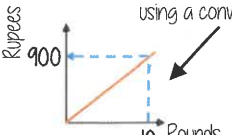


£1 = 90 Rupees

Currency is directly proportional

For every £1 I have 90 Rupees

Currency can be converted using a conversion graph

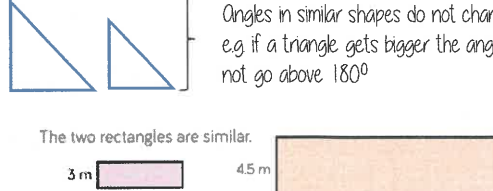


Convert 630 Rupees into Pounds

£7 = 630 Rupees

630 ÷ 90 = 7

Ratio between similar shapes



Angles in similar shapes do not change. e.g. if a triangle gets bigger the angles can not go above 180°

The two rectangles are similar.

Corresponding sides

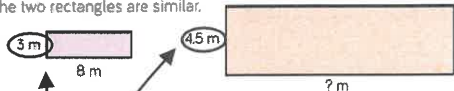
3m : 4.5m = 8m : 12m

1m : 1.5m = 8m : 12m

Note: Simplify to the same ratio

Understand Scale Factor

The two rectangles are similar.



3 x 15 = 4.5

This is a multiplicative change

Use corresponding sides to calculate a scale factor

Scale factor can also be calculated by:

Bigger corresponding side / Smaller corresponding side

Small corresponding side x SF = Big corresponding side

Draw and interpret scale diagrams

A picture of a car is drawn with a scale of 1:30

For every 1cm on my image is 30cm in real life

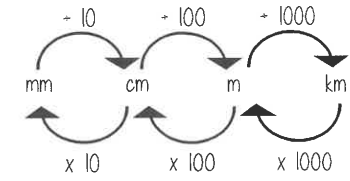
The car image is 10cm

Image: 10cm, Real life: 300cm

The car in real life is 210cm

Image: 7cm, Real life: 210cm

Interpret maps with scale factors



1 cm : 250 m


Ratios need to be in the same units

1 cm : 250m

1 cm : 25000cm

250 x 100 = 25000

For every 1cm on my map is 25000cm in real life.



YEAR 8 - PROPORTIONAL REASONING...

Multiplying and Dividing Fractions

@whisto_maths

What do I need to be able to do?

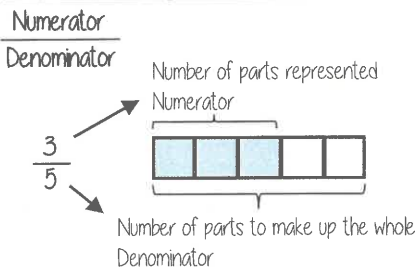
- By the end of this unit you should be able to:
- Carry out any multiplication or division using fractions and integers.
 - Solutions can be modelled, described and reasoned

Keywords

- Numerator:** the number above the line on a fraction. The top number. Represents how many parts are taken
- Denominator:** the number below the line on a fraction. The number represent the total number of parts.
- Whole:** a positive number including zero without any decimal or fractional parts.
- Commutative:** an operation is commutative if changing the order does not change the result.
- Unit Fraction:** a fraction where the numerator is one and denominator a positive integer.
- Non-unit Fraction:** a fraction where the numerator is larger than one.
- Dividend:** the amount you want to divide up.
- Divisor:** the number that divides another number.
- Quotient:** the answer after we divide one number by another. e.g. dividend ÷ divisor = quotient
- Reciprocal:** a pair of numbers that multiply together to give 1

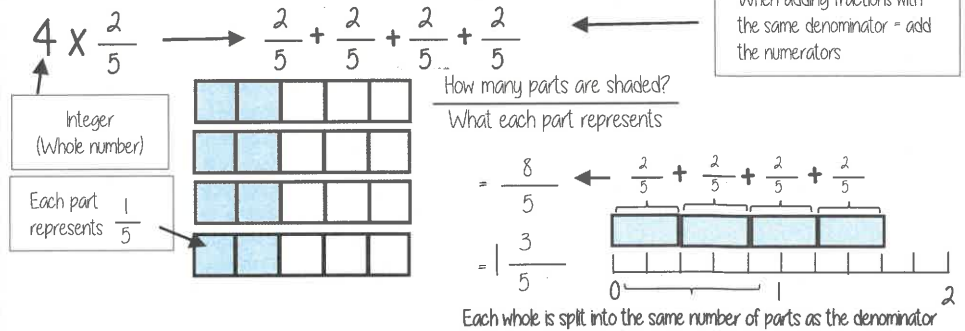


Representing a fraction

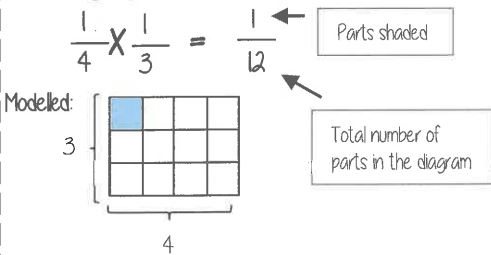


ALL PARTS of a fraction are of equal size

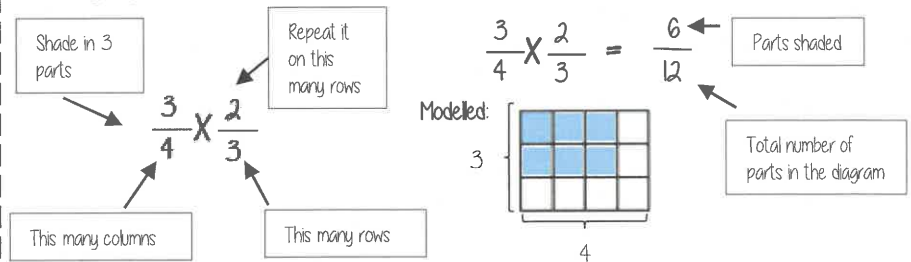
Repeated addition = multiplication by an integer



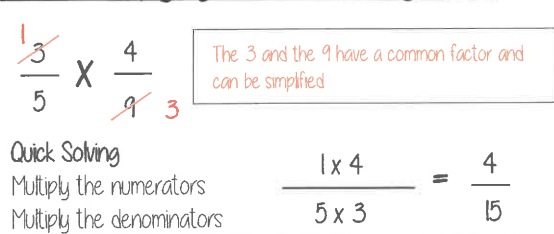
Multiplying unit fractions



Multiplying non-unit fractions

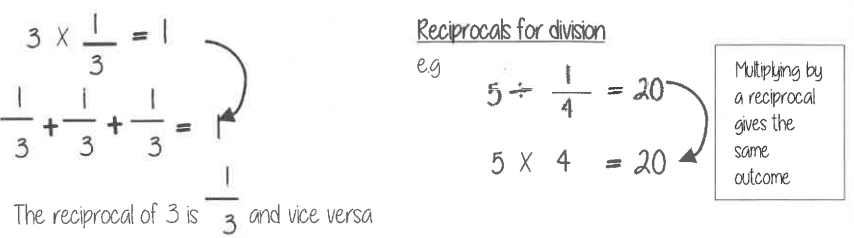


Quick Multiplying and Cancelling down

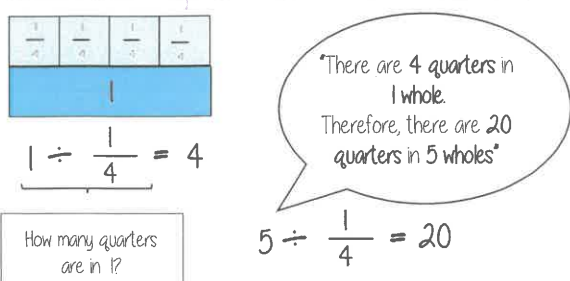


The reciprocal

When you multiply a number by its reciprocal the answer is always 1

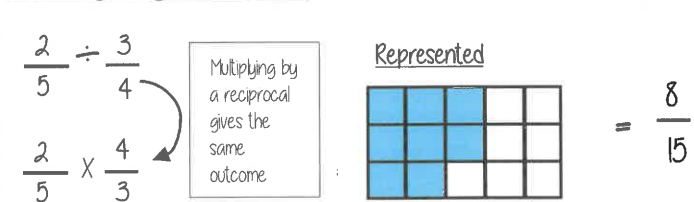


Dividing an integer by an unit fraction



Dividing any fractions

Remember to use reciprocals



The roots of performance

Overview

Reggae is a genre of music that originated in Jamaica in the late 1960s. It is characterized by a strong rhythm, often emphasizing the offbeat, and incorporates elements of ska, rocksteady, and mento.

KEY FEATURES OF REGGAE MUSIC

Off-Beat	Guitar & Piano emphasise chords on beats 2 & 4 or on the second weaker quaver e.g. 1 + 2*. This is called chop .
Organ Shuffle/Bubble	Left hand plays offbeat quavers whilst the right hand plays the offbeat chop .
Staccato Riff	When notes are played short and detached. Repeated music pattern. Often the bass-line will be based around a riff.
Chord Pattern	Often quite simple, repeated chord patterns used throughout a song.
Rim Shot	Where the drum stick hits the rim and the skin of the snare drum simultaneously.
Political Lyrics	Songs often critical of politics and raise awareness of social issues such as racism and poverty
Horn Stabs	Short interjecting melodies played by the 'horn section'

Cultural Influence:

- How has reggae influenced social and political movements?
- How does reggae promote messages of peace, love, and unity?

Listening and Analysis:

- Analyze a reggae song's rhythm, instruments, and lyrics.
- How does a typical reggae song structure compare to other genres?

Extra listening

1. Bob Marley:

1. "Three Little Birds"
2. "One Love"

2. Toots and the Maytals:

1. "Pressure Drop"
2. "Take Me Home, Country Roads"

3. Ziggy Marley:

1. "Family Time" (Album)
2. "I Love You Too"

4. Jimmy Cliff:

1. "You Can Get It If You Really Want"
2. "Wonderful World, Beautiful People"

5. Peter Tosh:

1. "Johnny B Goode"
2. "Reggae Mylitis"

History of Reggae

- Early Influences:** Reggae evolved from earlier Jamaican genres like ska and rocksteady. Ska, which emerged in the late 1950s, was fast-paced with a strong rhythm, while rocksteady, which followed in the mid-1960s, slowed things down and introduced more soulful vocals.
- 1960s:** Reggae began to take shape in the late 1960s. One of the earliest hits was "Do the Reggay" by Toots and the Maytals in 1968, which gave the genre its name.
- 1970s:** Reggae gained international fame during the 1970s, largely due to artists like Bob Marley, Peter Tosh, and Jimmy Cliff. The genre became associated with the Rastafari movement, which greatly influenced its themes and imagery.
- 1980s and Beyond:** Reggae continued to evolve, giving rise to subgenres such as dancehall and dub. The genre remains influential and popular worldwide, with contemporary artists continuing to draw inspiration from its roots.



BUDDHISM



KNOWLEDGE ORGANISER

Overview

Buddhism is one of the world's major religions. It is the world's 4th largest religion, with about 520 million followers.

Buddhists are the people who follow Buddhism. They follow the teachings of a man named **Siddhartha Gautama**, who became known as the **Buddha**.

The religion began when **Gautama**, a prince who had lived a life of luxury, realised that there was **suffering in the world**, and committed himself to understanding why.

This happened in **India** around 2,500 years ago.

The holy book in Buddhism is called **Tipitaka**. **Buddhist Temples** are buildings designed for Buddhist worship.

Image of the **Buddha**, known in life as **Siddhartha Gautama**, whose teachings founded **Buddhism**.



Buddhist Beliefs



Siddhartha Gautama's Story

-Siddhartha was a rich prince of an area north of India. His mother and father treated him well, and protected him from the suffering in the world.

-As a young man, Siddhartha left the palace for the first time, and was upset by the things that he saw: old age, sickness and death. He decided to leave his comfortable life to see if he could find an answer to the suffering.

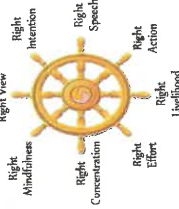
-After many years of trying, he sat under a tree (the Bodhi tree) by a full moon and started meditating. In doing this he became Enlightened – he saw the meaning in all things. He was then known as the Buddha.

The Four Noble Truths

-The Buddhist teachings are known as Dharma. They include the Four Noble Truths and the Eightfold-Path. Buddhism's Noble Truths are:

1. Life always involves suffering (dukkha).
2. Suffering happens because people are greedy and never satisfied with what they have.
3. Greed and selfishness can be overcome.
4. The way to overcome them is to follow the Eightfold Path.

The Eightfold Path



- Siddhartha created a way of life which ensured that his basic needs were covered, but didn't require any extra comforts. Buddhists try to live following the Eightfold Path:

1. Right viewpoint
2. Right values/ thought
3. Right speech
4. Right actions
5. Right livelihood
6. Right effort
7. Right concentration
8. Right mindfulness

Answers to Important Questions and Key Vocabulary

Where and how do Buddhists worship? Why?		-Buddhists worship either in temples or at home, often sitting or kneeling facing a shrine of Buddha. -They may listen to monks reciting religious texts, take part in chanting, or meditate. -Buddhists hope to achieve Enlightenment. They believe that there is a cycle of birth, life, death and rebirth. If a person gains Enlightenment (like the Buddha) they can break out of this cycle, to a place of eternal peace that is known as 'Nirvana.'	Key Vocabulary Buddha Buddhist Siddhartha Gautama Tipitaka Temple Wesak 4 Noble Truths Eightfold Path Lotus Flower Theravada Mahayana Tibetan
What is the Tipitaka?		-The Tipitaka is believed to be Buddha's teachings. It is written in an ancient Indian language known as Pali. It is a very large book, that takes up about forty volumes when translated into English! The Tipitaka is made up of three sections of wisdom. -About 7% of the world's population are Buddhists. -China has the most Buddhists – about 250 million Buddhists live there.	
Where do most Buddhists live in the world?		-However, Cambodia has the highest proportion of Buddhists – about 97% of its population are Buddhists. There are also lots of Buddhists in Thailand, Sri Lanka, and Japan. -Many Buddhists in the far east devote their lives to Buddhism, living in isolation in temples.	
How many different types of Buddhists are there?		-Buddha's teachings spread far across the Asian continent. As it spread, different peoples formed their own approaches of Buddhism. -The three main types are called Theravada, Mahayana and Tibetan Buddhists. -Although they differ slightly, they all still keep the basic features of Buddhism.	

Top 10 Facts!

1. Buddhists don't believe in a God who made the world and everything in it.	2. Siddhartha's family were Hindu.	3. The lotus flower is an important symbol in Buddhism. It is a symbol of enlightenment.	4. The name 'Buddha' means 'the enlightened one' or 'the one who knows.'	5. Some Buddhists have shrines at home where they are able to worship.	6. The teachings of Siddhartha Gautama were not written down until about 400 years after his death.	7. Siddhartha Gautama died around age 80.	8. 'Puja' is the name for worship in Buddhism. People often light candles as they worship.	9. In images of Buddha, faces are always made to look calm and serene, to show that he has a peaceful mind.	10. Wesak is an important festival in Buddhism.
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Buddhism Timeline

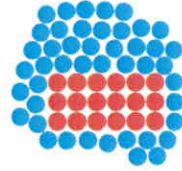
490BCE: Siddhartha Gautama is born.	455 BCE: Gautama is enlightened – becomes the Buddha.	454 BCE: People begin to follow the teachings of the Buddha.	410 BCE: Gautama dies.	386 BCE: Buddhism separates into two different lines.	269 BCE: Emperor Ashoka begins to spread Buddhism across India.	200 BCE – 1200CE: Buddhism spreads along trade routes, reaching many other countries, including Sri Lanka, China, and Indonesia.
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Friction and drag

- **Friction** is a force which will slow down a moving object due to two surfaces rubbing on one another
- The greater the friction, the faster an object will slow down, or the greater the force it will need to overcome the force of friction. For example, it is easier to push a block on ice than on concrete, as the ice is smoother and causes less friction
- When an object is moving through a fluid, either liquid or gas, the force which slows it down is known as **drag**
- The fluid particles will collide with the moving object and slow it down, meaning that more force is needed to overcome this
- Both drag and friction are **contact forces** as the two surfaces in friction, and the object and fluid particles in drag, come into contact with one another
- Both drag and friction are forces so they are measured in **Newtons (N)**



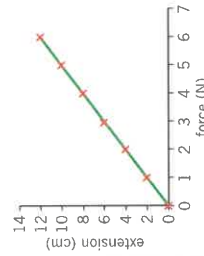
A solid moves through a gas.



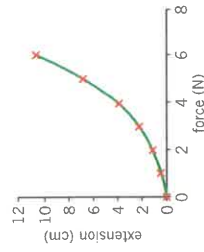
A solid moves through a liquid.

Hooke's law

- Some objects, like springs, can be stretched, the amount that they stretch is known as their **extension**
- A force needs to be applied to the spring for it to be stretched, we can achieve this by adding masses which exert the force weight
- A spring will continue to stretch until it passes its **elastic limit**
- If an object obeys **Hooke's law** it will have a **linear relationship**: if the force applied to the spring is doubled, the extension will double too
- If an object does not obey Hooke's law, it will not have a linear relationship



This graph shows how the extension of a spring changes as you pull it



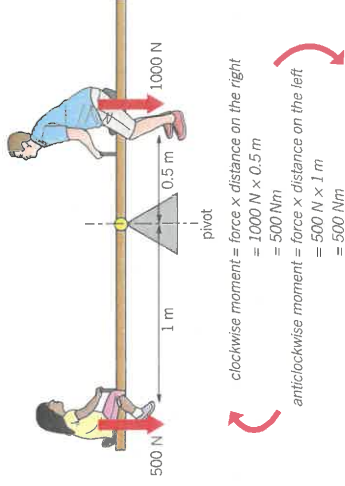
This graph shows the relationship between force and extension

Turning forces

- A **moment** is the turning effect of a force, it is measured in Newton meters
- We can calculate a moment with the equation:

$$\text{moment (Nm)} = \text{force (N)} \times \text{distance from the pivot (m)}$$

- The size of the moment will increase as the distance from the **pivot** or the size of the force increases
- When an object, such as a seesaw, is balanced, the clockwise and anticlockwise moments will be equal and opposite, which is known as **equilibrium**
- When forces are equal and opposite to each other, there is no **resultant force**



$$\text{clockwise moment} = \text{force} \times \text{distance on the right}$$

$$= 1000 \text{ N} \times 0.5 \text{ m}$$

$$= 500 \text{ Nm}$$

$$\text{anticlockwise moment} = \text{force} \times \text{distance on the left}$$

$$= 500 \text{ N} \times 1 \text{ m}$$

$$= 500 \text{ Nm}$$

Gas pressure

- **Gas pressure** is caused by the particles of a gas colliding with the wall of the container which they are in
- The more often that the particles collide with the wall of the container, the higher the pressure of the gas will be
- Gas pressure can be increased by:
 - Heating the gas so the particles move more quickly and collide with the container with a higher energy
 - Compressing the gas so there are the same amount of particles within a smaller volume meaning that there are more collisions
 - Increasing the amount of particles within the same volume so there are more collisions

- **Atmospheric pressure** is the pressure which the air exerts on you all of the time, nearer the ground there are more particles weighing down on you so the pressure is greater
- The higher you go, the smaller the atmospheric pressure, this is because there will be less particles weighing down on you

Pressure in solids

- The pressure which is exerted on a solid is known as **stress**
- The greater the area over which the force is exerted over, the lower the pressure, this is why snowshoes have a large area to prevent you sinking into the snow
- **Pressure** can be calculated using the following equation:

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

Pressure in liquids

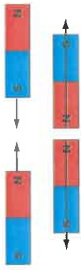
- Liquids are **incompressible**
- The particles in a liquid are already touching, meaning that there is little space between them to compress
- Liquids will transfer the pressure applied to them, this is seen in hydraulic machines
- As the ocean gets deeper, the pressure will increase, this is because the pressure depends on the weight of the water above
- The greater the number of water molecules above, the higher the pressure will be

Key terms

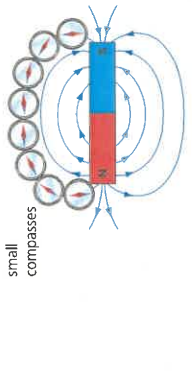
Make sure you can write definitions for these key terms.

air resistance atmospheric pressure contact force drag elastic limit equilibrium extension friction gas pressure Hooke's law incompressible
linear relationship

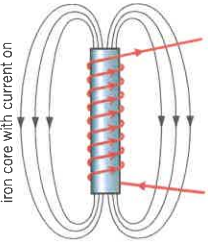
Magnets

- A **magnet** has two poles, a north and a south pole
 - North poles **attract** south poles
 - South poles **attract** north poles
 - South poles **repel** south poles
 - North poles **repel** north poles
- 
- Magnetic materials** will experience a magnetic force when placed near a magnet, this is a type of non-contact force as the materials do not have to touch for the force to be apparent
 - The three magnetic metals are iron, nickel and cobalt

Magnetic fields

- A **magnetic field** is an area where a magnetic material will experience a force
 - A **permanent magnet** will have it's own magnetic field
 - Magnetic field lines** represent the field, these always travel out of the north pole of the magnet, and into the south pole
 - The closer together the magnetic field lines are, the stronger the magnetic field will be
 - We can find out the shape of a magnetic field in two ways:
 - Using plotting compasses
 - Using iron filings
- 
- The Earth has its own magnetic field, which acts like a giant bar magnet inside the centre of the Earth
 - This magnetic field allows compasses to work when navigating around the Earth

Electromagnets

- Electromagnets** are made by wrapping a coil of wire around a magnetic **core**
 - Electromagnets only work when electricity is flowing through the coil, which means that they can be turned on and off
 - Electromagnets are also stronger than **permanent magnets**
 - The electromagnet will produce the same magnetic field shape as a bar magnet
- 
- You can increase the strength of an electromagnet by:
 - Increasing the number of turns on the coil around the core of the electromagnet
 - Increasing the current which is flowing through the coil of wire
 - Using a more magnetic material for the core, e.g. iron rather than aluminium

Using electromagnets

Electric Bells

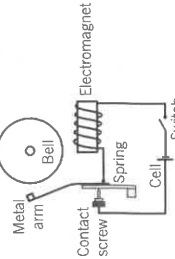
The electromagnet attracts the iron armature

When it moves, it breaks the circuit, no longer allowing current to flow

The coil and core are no longer magnetic meaning the spring is no longer attracted and returns to its original position

The bell is rung once

The circuit is complete again, restarting the process

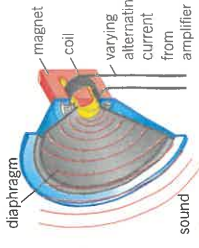


Circuit breakers

- Circuit breakers detect large changes in current in a house, and will break a circuit
- When a large current flows, the electromagnet becomes strong enough to attract an iron catch which will break a circuit
- They can then be reset and used again
- This makes them suitable as an electrical safety device in a home

Loudspeakers

- Loudspeakers use an electromagnet in order to generate sound
- A current passes through the coil and creates an electromagnet, this repels another permanent magnet which moves the cone in and out creating sound



Key terms

Make sure you can write definitions for these key terms.

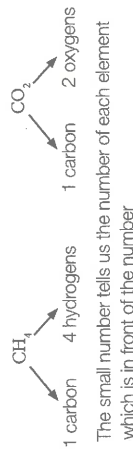
attract core circuit breaker electromagnet electric bell loudspeaker magnet magnetic pole magnetic field lines magnetic material permanent magnet repel

Elements and atoms

- An **element** is a substance that only contains one type of atom, it is found on the **Periodic Table**
- Each element has its own unique chemical symbol which is the same in every language, these are also found on the Periodic Table
- An **atom** is the smallest part of which an element can be broken down into
- As there are around 100 types of elements that can occur naturally, there are around 100 different atoms

Compounds

- **Compounds** are formed when two or more different elements chemically bond together
- The compound will have different **physical properties** to the elements which make up the compound, for example water is a liquid, but it is made from oxygen and hydrogen which are both gases
- Compounds are hard to separate and need a chemical reaction to do this
- When naming a compound, we always mention the metal first and the non metal second
- The name of the metal will not change but the name of the non metal will, for example oxygen can change to oxide
- Chemical formulae tell us how many atoms of each element are in the compound in relation to each other



Polymers

- **Polymers** are long chains of groups of atoms which are repeated many times
- Natural polymers are not man-made and include wool, cotton, starch and rubber
- Synthetic polymers are man-made and include polythene, polystyrene and nylon

Key terms

Make sure you can write definitions for these key terms.

atom alkali metals

compound

displacement reaction

element

group

Group 1

Group 0

halogen

noble gas

period

Periodic Table

physical properties

polymer

trend

Groups and periods

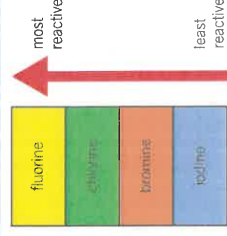
- **Groups** are the columns in the Periodic Table, they go downwards
- **Periods** are the rows in the Periodic Table, they go sideways
- Elements in the same group normally follow the same trends in properties such as melting point, boiling point and reactivity
- By placing these elements into these groups, scientists can make predictions about their properties

	H																	
1	Li	Be											B	C	N	O	F	Ne
2	Na	Mg											Al	Si	P	S	Cl	Ar
3	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
4	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
5	Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
6	Fr	Ra																

Group 0

- **Group 0** elements are known as the **noble gases**
- They are all non metals with low melting and boiling points, meaning all are gases at room temperature
- The boiling point decreases going down the group
- All of the group 0 elements are unreactive
- When electricity is passed through the gas, they emit a brightly coloured light, this can be seen in neon signs

Halogens



Group 1

- **Group 1** elements are also known as the **alkali metals**
- They share similar properties with other metals such as:
 - Being shiny when freshly cut
 - Being good conductors of electricity and heat
 - Group 1 metals are much softer than other metals and also have much lower melting and boiling points
 - Group 1 elements react with water to form alkali solutions
lithium + water → lithium hydroxide + hydrogen
metal + water → metal hydroxide + hydrogen
- The further down the group that the metal is, the more vigorous the reaction will be. This is called a **trend**
- Another trend seen in Group 1 is with the boiling and melting points; the further down the group, the lower the boiling and melting points are

Group 7

- **Group 7** elements are also known as the **halogens**
- They share similar properties with other non metals such as:
 - Having low melting and boiling points
 - Not conducting electricity
 - Moving down the groups the elements have an increased melting and boiling point
 - The halogens also react in a similar way to one another, for example with iron:
iron + chlorine → iron chloride
iron + bromine → iron bromide
- Halogens can undergo **displacement reactions**, this is where a more reactive halogen will take the place of a less reactive halogen
The most reactive halogens are at the top of the group, and the least reactive halogens are at the bottom of the group
- If the most reactive halogen is on its own, it will take the place of the less reactive halogen in a compound

