Year 8 – HT2

Newsome Academy
Everyone Exceptional Everyday

Knowledge Organisers

Name:

Team:

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Mathematics

Our students will:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language

- can **solve problems** by applying their mathematics to a variety of routine and non- routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

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Year 8: Autumn Term – Working in the Cartesian Plane

To work in the cartesian plane
To be able to represent data

What do I need to be able to do?

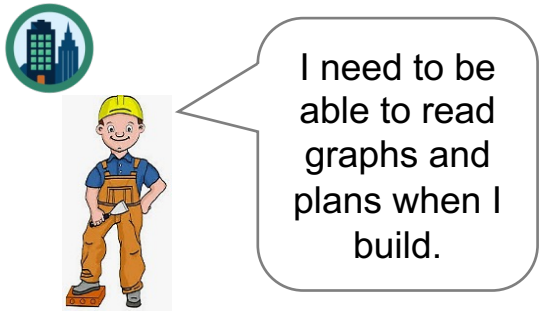
By the end of this unit you should be able to:

- Label and identify lines parallel to the axes
- Recognise and use basic straight lines
- Identify positive and negative gradients
- Link linear graphs to sequences
- Plot $y = mx + c$ graphs

Keywords

Quadrant: four quarters of the coordinate plane.
Coordinate: a set of values that show an exact position.
Horizontal: a straight line from left to right (parallel to the x axis)
Vertical: a straight line from top to bottom (parallel to the y axis)
Origin: (0,0) on a graph. The point the two axes cross
Parallel: Lines that never meet
Gradient: The steepness of a line
Intercept: Where lines cross

Career Focus - Where could this take you?



Challenge Activities

Which of the following lines is parallel to the x-axis? Circle your answer.

$y = 7$ $y = 7x + 2$ $y = 7x$ $x = 7$

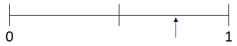
Write the equation of a line that is parallel to the y-axis.

Retrieval Practice

1) A bag contains red and blue counters in the ratio 1 : 4
Three counters are red. How many are blue?

2) Write all the factors of 20

3) Here is a probability scale.
Estimate the probability the arrow points to.



4) What do the angles in a quadrilateral add up to?

Vocabulary check: Factor

Topic Links

This topic links to:

- Drawing conversion graphs, scatter graphs and correlation.

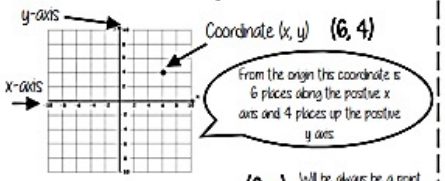
Additional Resources

Corbettmaths

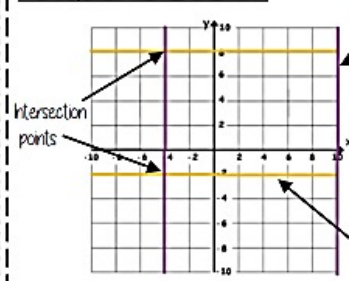
To further practise and develop your knowledge see:

- Videos: 84 - 88

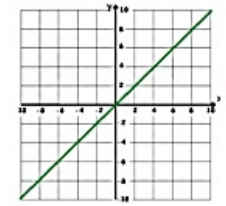
Coordinates in four quadrants



Lines parallel to the axes

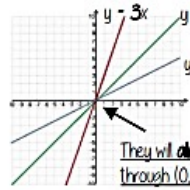


Recognise and use the line y=x



Recognise and use the lines y=kx

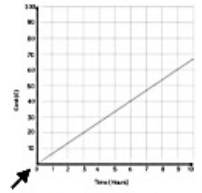
The value of k changes the steepness of the line



The bigger the value of k the steeper the line will be.

The closer to 0 the value of k the closer the line will be to the x axis.

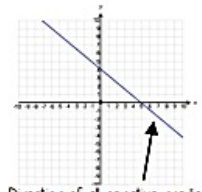
Direct Proportion using y=kx



The line must be straight to be directly proportional – variables increase at the same rate k

Direct proportion graphs always start at (0,0) as they are describing relationships between two variables

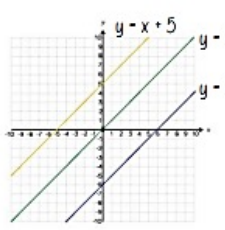
Lines with negative gradients



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

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

Lines in the form y = x + a



All the lines are parallel because the gradients are the same

$y = x + a$

This is the line y=x when the y and x coordinate are the same

This shows the translation of that line
e.g $y = x + 5$ is the line y=x moved 5 places up the graph

5 has been added to each of the x coordinates

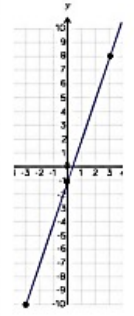
Plotting y = mx + c graphs

$y = 3x - 1$ → 3 x the x coordinate then – 1

x	-3	0	3
y	-10	-1	8

Draw a table to display this information

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



You only need two points to form a straight line

Plotting more points helps you decide if your calculations are correct (if they do make a straight line)

Remember to join the points to make a line

Year 8: Autumn Term – Representing Data

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To work in the cartesian plane
To be able to represent data

What do I need to be able to do?

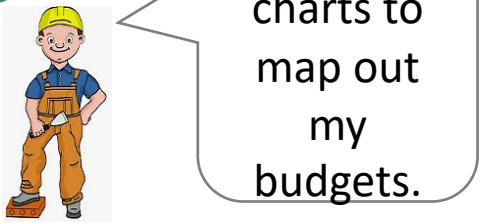
By the end of this unit you should be able to:

- Draw and interpret scatter graphs
- Describe correlation and relationships
- Identify different types of non-linear relationships
- Design and complete an ungrouped frequency table
- Read and interpret grouped tables (discrete and continuous data)
- Represent data in two way tables

Keywords

Variable: a quantity that may change within the context of the problem
Relationship: the link between two variables (items). E.g. Between sunny days and ice cream sales
Correlation: the mathematical definition for the type of relationship.
Origin: where two axes meet on a graph
Line of best fit: a straight line on a graph that represents the data on a scatter graph
Outlier: a point that lies outside the trend of graph
Quantitative: numerical data
Qualitative: descriptive information, colours, genders, names, emotions etc.
Continuous: quantitative data that has an infinite number of possible values within its range.
Discrete: quantitative or qualitative data that only takes certain values.
Frequency: the number of times a particular data value occurs.

Career Focus - Where could this take you?



I use charts to map out my budgets.

Challenge Activities

On a bookcase

- $\frac{5}{8}$ of the books are fiction books.
- The rest are non-fiction.
- There are 72 non-fiction books.

How many books are fiction?

Retrieval Practice

1) A bag contains red and blue counters in the ratio 1 : 3
Fifteen counters are blue. How many are red?

2) Which of the numbers are prime?
1, 6, 7, 15, 35

3) Write a sample space for the outcomes of a fair six-sided dice.

4) Write 30% as a decimal.

Vocabulary check: Product

Topic Links

This topic links to:

- Averages from frequency tables and comparing data.

Additional Resources

Corbettmaths

To further practise and develop your knowledge see:

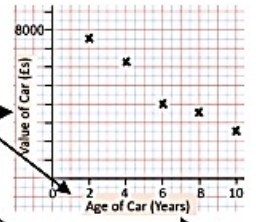
- Videos: 51, 52, 165, 380

Draw and interpret a scatter graph

Age of Car (Years)	2	4	6	8	10
Value of Car (£s)	7500	6250	4000	3500	2500

- This data may not be given in size order
- The data forms information pairs for the scatter graph
- Not all data has a relationship

All axes should be labelled

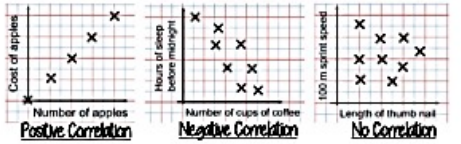


"This scatter graph shows as the age of a car increases the value decreases"

The link between the data can be explained verbally

The axes should fit all the values on and be equally spread out

Linear Correlation



Positive Correlation
As one variable increases so does the other variable

Negative Correlation
As one variable increases the other variable decreases

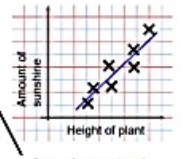
No Correlation
There is no relationship between the two variables

The line of best fit

The Line of best fit is used to make estimates about the information in your scatter graph

Things to know:

- The line of best fit **DOES NOT** need to go through the origin (The point the axes cross)
- There should be approximately the same number of points above and below the line (It may not go through any points)
- The line extends across the whole graph



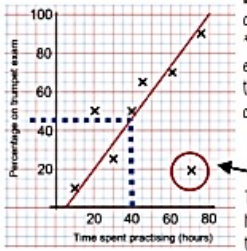
It is only an estimate because the line is designed to be an average representation of the data

It is always a **straight line.**

Using a line of best fit

Interpolation is using the line of best fit to estimate values inside our data point.

e.g. 40 hours revising predicts a percentage of 45



Extrapolation is where we use our line of best fit to predict information outside of our data
This is not always useful – in this example you cannot score more that 100%. So revising for longer can not be estimated

This point is an "**outlier**"
It is an outlier because it doesn't fit this model and stands apart from the data

Ungrouped Data

The number of times an event happened

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

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

Number of siblings	Frequency	
0	2	0
1	3	3
2	4	2 + 2 + 2 + 2 OR 2 x 4 = 8
3	2	3 + 3 OR 3 x 2 = 6
4	1	4

Best represented by discrete data (Not always a number)

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

OVERALL there are 0 + 3 + 8 + 6 + 4 Siblings = 21 siblings

Grouped Data

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

Discrete Data
The groups do not overlap

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

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

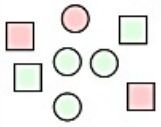
Continuous Data
To make sure all values are included inequalities represent the subgroups

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

e.g this group includes every weight bigger that 60Hg up to and including 70Hg

Representing data in two-way tables

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



There are 2 green squares

There are 5 green shapes

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

There are 8 items in total

Using your two-way table

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

Interleaving Use your fraction, decimal percentage equivalence knowledge

Year 8: Autumn Term – Tables & Probability

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To work in the cartesian plane
To be able to represent data

What do I need to be able to do?

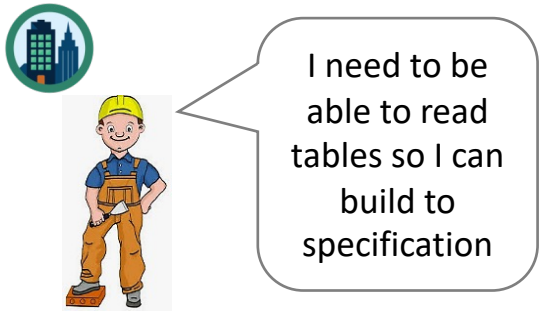
By the end of this unit you should be able to:

- Construct a sample space diagram.
- Systematically list outcomes.
- Find the probability from two-way tables.
- Find the probability from Venn diagrams.

Keywords

Outcomes: the result of an event that depends on probability.
Probability: the chance that something will happen.
Set: a collection of objects.
Chance: the likelihood of a particular outcome.
Event: the outcome of a probability – a set of possible outcomes.
Biased: a built in error that makes all values wrong by a certain amount.
Union: Notation 'U' meaning the set made by comparing the elements of two sets.

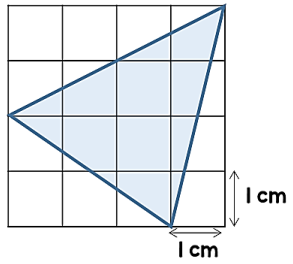
Career Focus - Where could this take you?



I need to be able to read tables so I can build to specification

Challenge Activities

What is the area of the triangle?



Retrieval Practice

1) A class has boys and girls in the ratio 2 : 3
There are 10 boys. How many girls are there?

2) Complete the sentence.
"For every __ blue there are __ yellow."

3) Which of the numbers are square numbers?
2, 4, 6, 9, 10

4) Solve $x + 35 = 62$

Vocabulary check: Prime

Topic Links

This topic links to:

- Listing outcomes, fractions.

Additional Resources

Corbettmaths

To further practise and develop your knowledge see:

- Videos: 245, 246, 319, 380

Construct sample space diagrams

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

The possible outcomes from rolling a dice

The possible outcomes from tossing a coin

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

This is the set notation to list the outcomes **S** =

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

In between the { } are a, the possible outcomes

Probability from sample space

The possible outcomes from rolling a dice

The possible outcomes from tossing a coin

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

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

This is the set notation that represents the question **P**

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

In between the ( ) is the event asked for

There are three even numbers with tails

There are twelve possible outcomes

Numerator: the event

Denominator: the total number of outcomes

Probability from two-way tables

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

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

The event

The total in the set

The total number of items

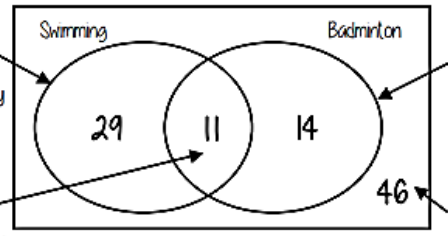
Product Rule

The number of items in event a **X** The number of items in event b

Probability from Venn diagrams

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

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



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

The intersection represents both Swimming **AND** badminton

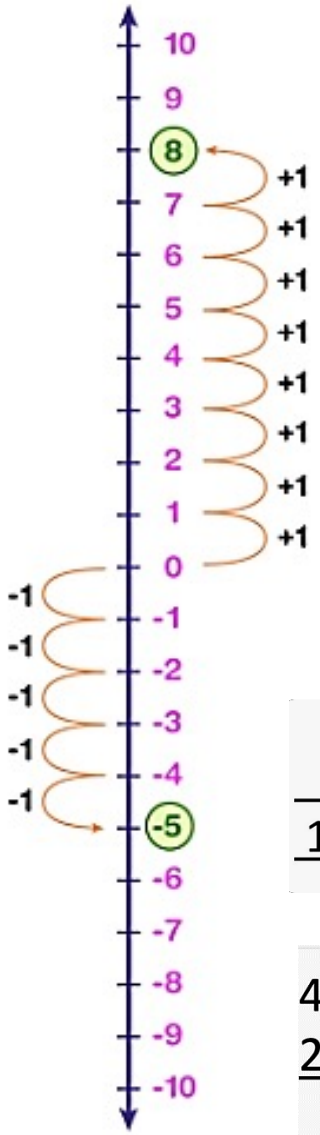
The number outside represents those that did **neither** badminton or swimming

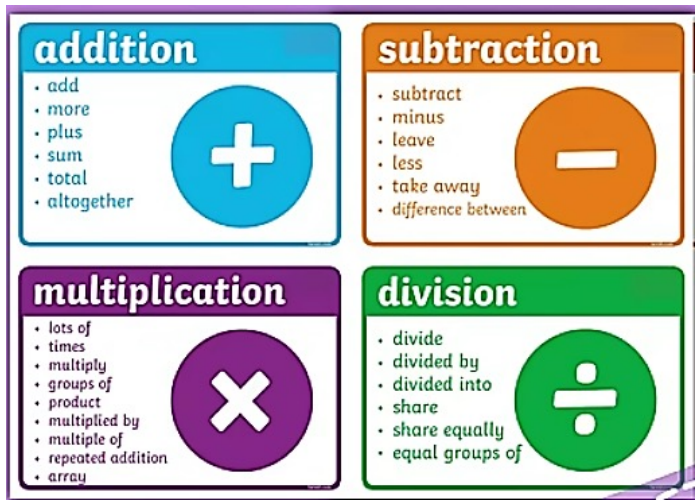
100 – 29 – 11 – 14

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

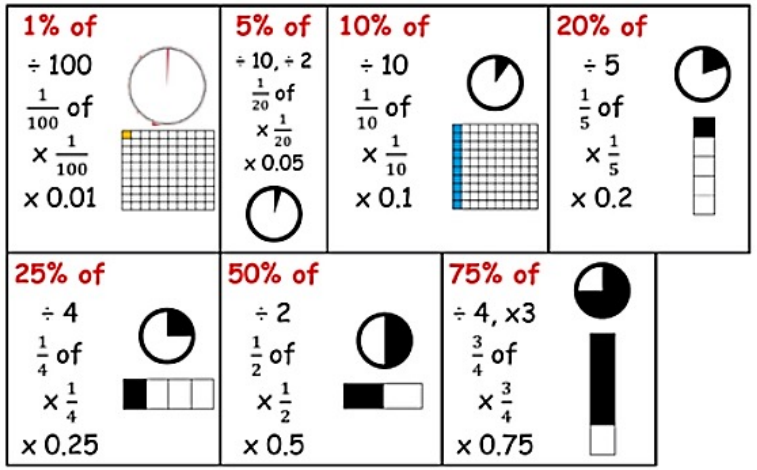
Maths: Quick Reference: Number Skills

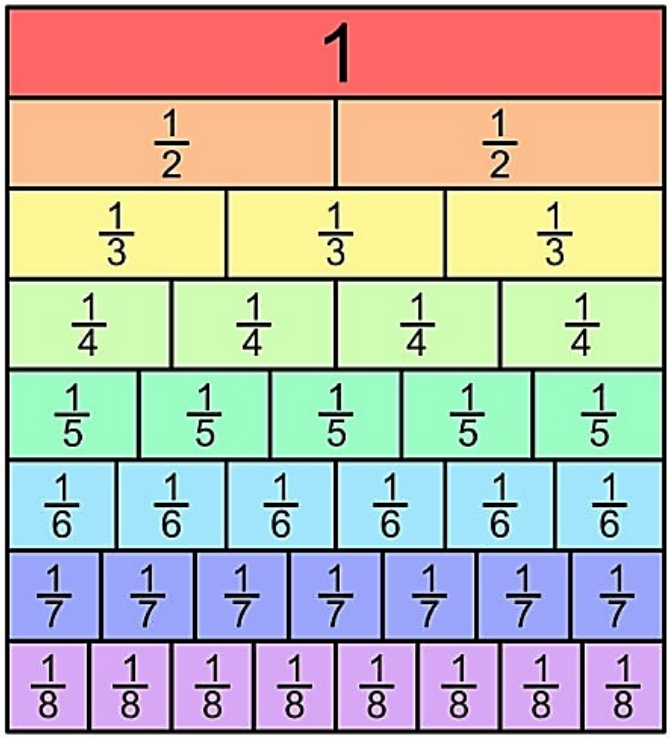
100	10	1	·	$\frac{1}{10}$	$\frac{1}{100}$
Hundreds	Tens	Units	·	Tenths	Hundredths
3	5	2	·	7	1

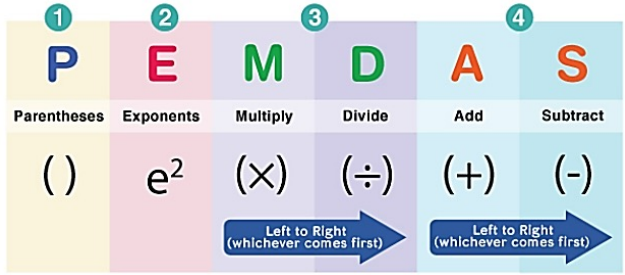




X	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144







$$\begin{array}{r} 476 + \\ 874 \\ \hline 1350 \\ 1\ 1 \end{array}$$

$$\begin{array}{r} 586 \\ \times\ \ 7 \\ \hline 42 \\ 560 \\ 3500 \\ \hline \end{array}$$

$$8\overline{)3640} = 045$$

$$\begin{array}{r} {}^{7} \\ 4,783 - \\ 2,349 \\ \hline 4 \end{array}$$

156000. = 1.56×10^5

Move decimal point 5 places left, exponent goes up by 5

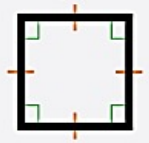
0.0000053 = 5.3×10^{-6}

Move decimal point 6 places right, exponent goes down by 6

Maths: Quick Reference: Geometry & Measures

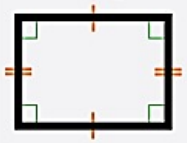
Quadrilaterals

Square



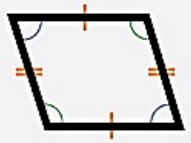
Four sides of equal length, four internal right angles.

Rectangle



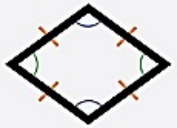
Four internal right angles, opposite sides of equal length.

Parallelogram



Opposite sides are parallel and equal in length, opposite angles are equal.

Rhombus

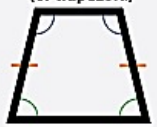


All four sides are the same length, like a square that has been squashed sideways.

Trapezium (or trapezoid)

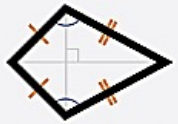
Two sides are parallel. Side lengths and angles are not equal.

Isosceles Trapezium (or trapezoid)



Two sides are parallel and base angles are equal, non-parallel sides are equal length.

Kite

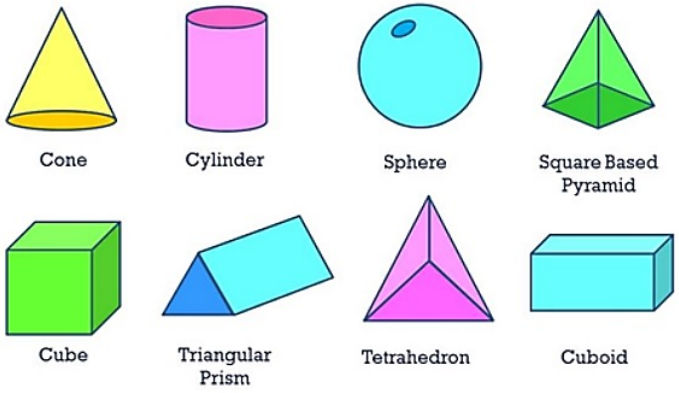


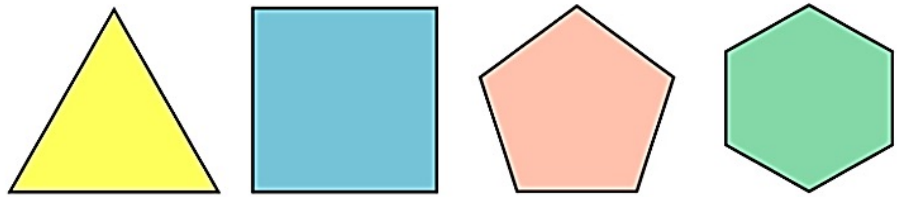
Two pairs of adjacent sides are of equal length; the shape has an axis of symmetry.

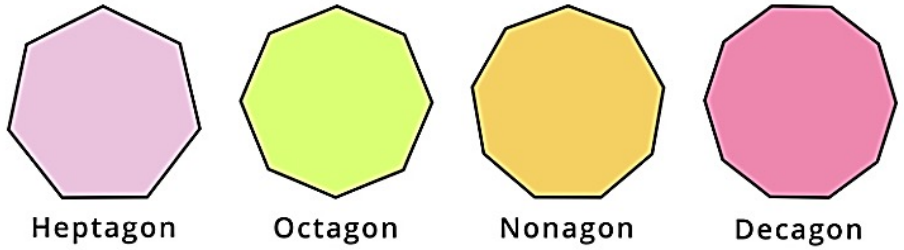
Irregular Quadrilateral

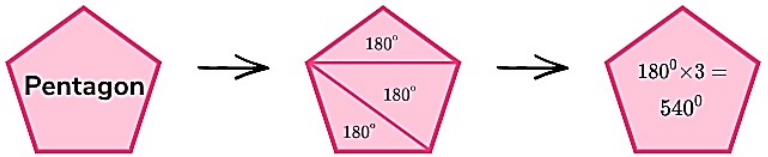
No sides are equal in length and no internal angles are the same.

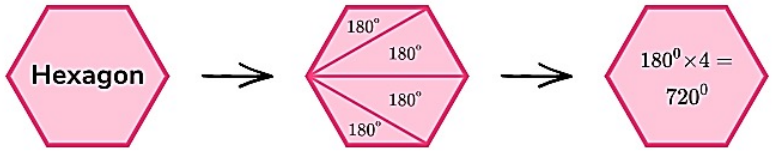
3D shapes

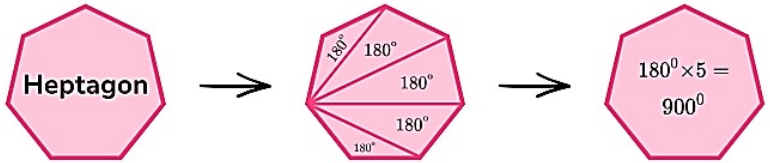


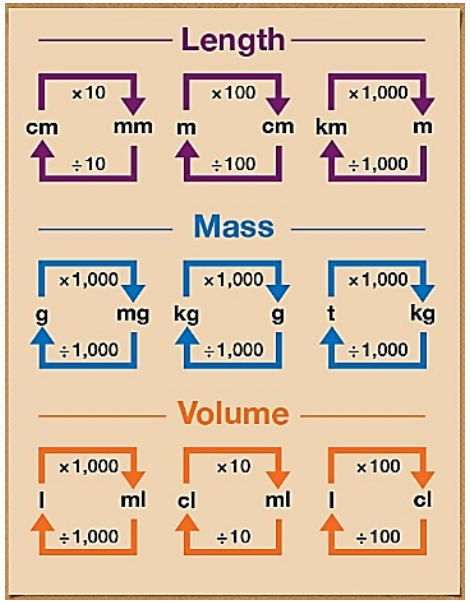






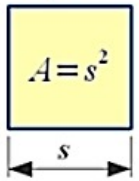




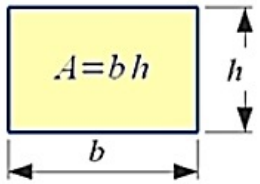


Maths: Quick Reference: Geometry (Areas & Volumes)

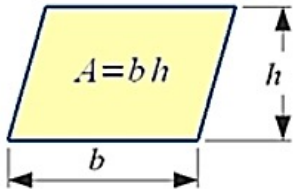
Square



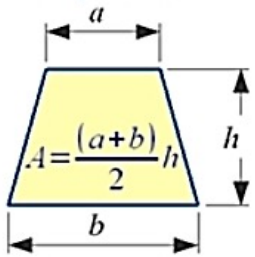
Rectangle



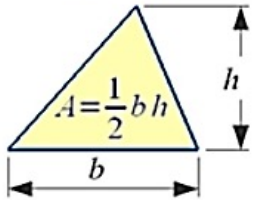
Parallelogram



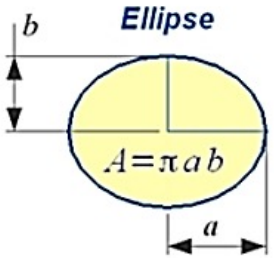
Trapezoid



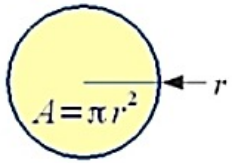
Triangle



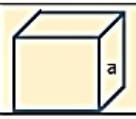
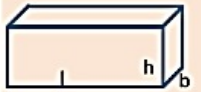
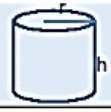
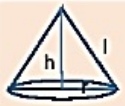
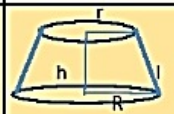
Ellipse



Circle

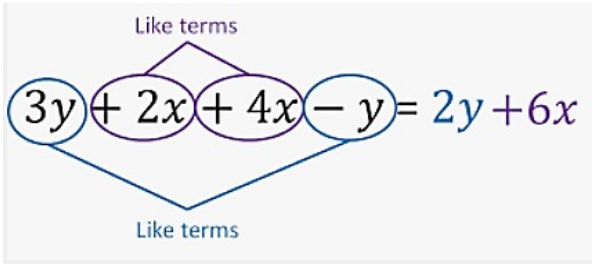


Area and volume of 3d figures

S.No	Name	Figure		Curved Surface Area	Total Surface Area	Volume
1)	Cube		a = side	$4a^2$	$6a^2$	a^3
2)	Cuboid		l= length b = breadth h= height	2h(l + b)	2(lb+ bh+ lh)	l x b x h
3)	Sphere		r = radius	$4\pi r^2$	$4\pi r^2$	$\frac{4}{3}\pi r^3$
4)	Solid Hemisphere		r = radius	$2\pi r^2$	$3\pi r^2$	$\frac{2}{3}\pi r^3$
5)	Right circular cylinder		r = radius h = height	$2\pi rh$	$2\pi r(h+r)$	$\pi r^2 h$
6)	Right circular cone		r = radius h = height l= slant height	πrl	$\pi r(l+r)$	$\frac{1}{3}\pi r^2 h$
7)	Frustum of a cone		r = top radius R = base radius h = height l= slant height	$\pi l(R + r)$	$\pi l(R+r) + \pi r^2 + \pi R^2$	$\frac{1}{3}\pi h(R^2+r^2+Rr)$

Maths: Quick Reference: Algebra Skills

Simplifying Expressions

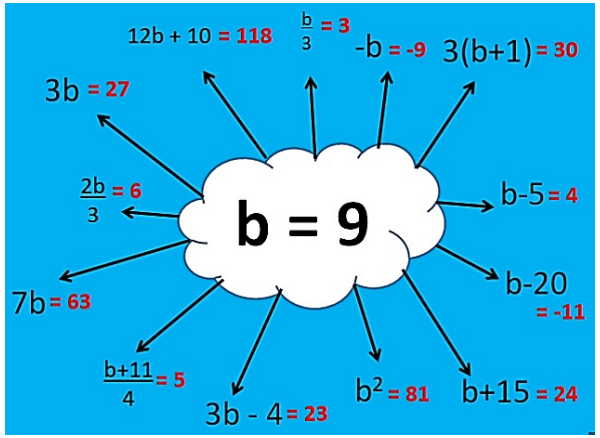


$C \times C \times C \times C = C^4$

$C + C + C + C = 4C$

An Expression	An Equation
$4a + 7b$	$4a + 12 = 60$
A Formula	**An Identity**
$A = \pi r^2$	$(a+b)^2 = a^2 + 2ab + b^2$

Substitution



Expanding Brackets

multiply

$7(x+2)$

$7x+14$

multiply

$5a(b-4)$

$5ab-20a$

FOIL Method

F O I L

$(2x+3)(5x-8)$

First: $(2x)(5x) = 10x^2$

Outer: $(2x)(-8) = -16x$

Inner: $(3)(5x) = 15x$

Last: $(3)(-8) = -24$

$(2x+3)(5x-8)$
$= 10x^2 - 16x + 15x - 24$
$= 10x^2 - x - 24$

Grid Method

$(2x+3)(5x-8)$

	$2x$	$+3$
$5x$	$10x^2$	$+15x$
-8	$-16x$	-24

$10x^2 + 15x - 16x - 24$
$= 10x^2 - x - 24$

Factorising Brackets

$7x+14$

Common factor?

$7(x+2)$

$5ab-20a$

Common factor?

$5a(b-4)$

Expand & Simplify...

$5(x+3) + 6(x-4)$

$5x + 15 + 6x - 24$

$11x - 9$

Solving Equations

$6x - 5 = 7$

$+5 \quad +5$

$6x = 12$

$\div 6 \quad \div 6$

$x = 2$

Maths: Quick Reference: Statistics

Mode
most common

Mean
$\frac{\text{sum of values}}{\text{number of values}}$

Median
middle value

Range
largest value – smallest value

Mean

7, 3, 4, 1, 7, 6

Sum of numbers divided by the total numbers

Mean = (7+3+4+1+7+6)/6
= 28/6 = 4.66

Median

7, 3, 4, 1, 7, 6

Arrange in order and pick the middle value

1, 3, 4, 6, 7, 7

Median = (4+6)/2 = 5

Mode

7, 3, 4, 1, 7, 6

Most common number

7, 3, 4, 1, 7, 6

Mode = 7

Range

7, 3, 4, 1, 7, 6

Difference between highest and lowest

Range = 7 – 1 = 6

Mean from the Frequency Table

Discrete Data Frequency Table

$$\text{Mean} = \frac{\text{Sum of (value} \times \text{frequency)}}{\text{Total frequency}}$$

Grouped Data Frequency Table

$$\text{Mean of grouped data} = \frac{\text{Sum of (interval midpoint} \times \text{frequency)}}{\text{Total frequency}}$$

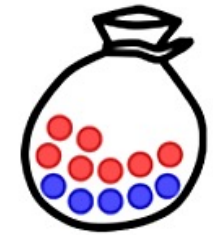
Length (x cm)	Frequency	Midpoint	Midpoint × frequency
$0 < x \leq 10$	4	× 5	= 20
$10 < x \leq 20$	10	× 15	= 150
$20 < x \leq 30$	7	× 25	= 175
$30 < x \leq 40$	4	× 35	= 140
	25		**485**

estimated mean = 485 ÷ 25 = **19·4 cm**

Maths: Quick Reference: Probability

Simple Probability

$$\text{Probabilty} = \frac{\text{Favorable outcomes}}{\text{Total outcomes}}$$



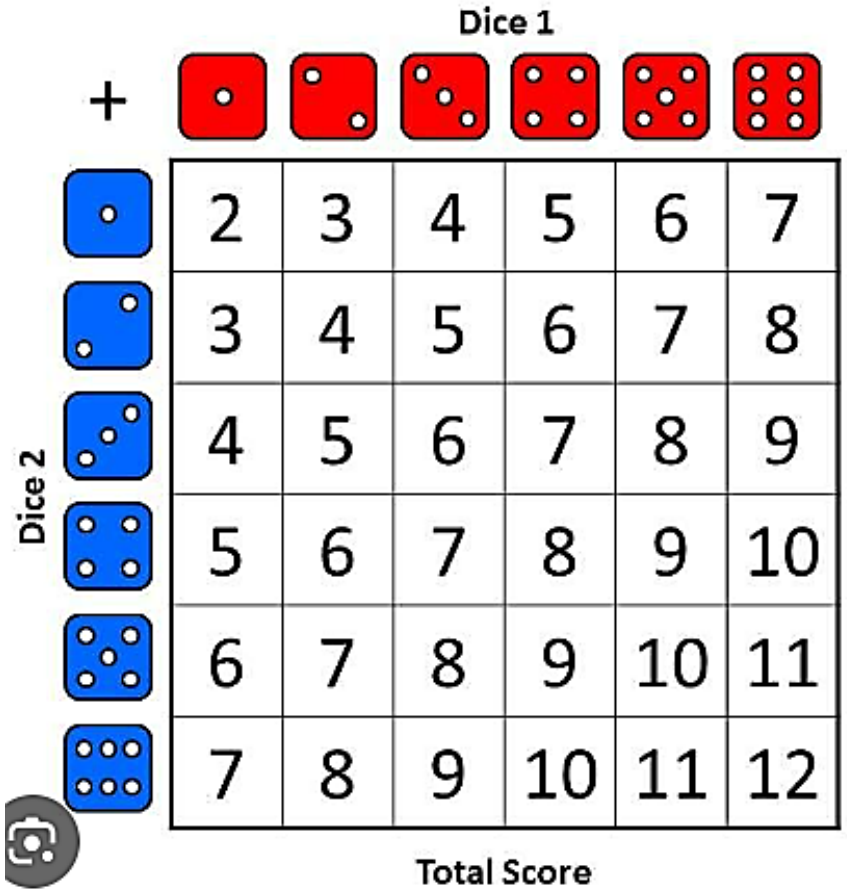
Example:

$P(red) = \frac{7}{12}$ ← Number of red marbles / Total number of marbles (sample space)

$P(blue) = \frac{5}{12}$ ← Number of blue marbles / Total number of marbles (sample space)

In words:	Impossible	Very unlikely	Unlikely	Even chances	Likely	Very likely	Certain
As decimal fractions:	0	0,2	0,4	0,5	0,6	0,8	1
As fractions:	0	$\frac{1}{5}$	$\frac{2}{5}$	$\frac{1}{2}$	$\frac{3}{5}$	$\frac{4}{5}$	1
As percentages:	0%	20%	40%	50%	60%	80%	100%

Sample Space Diagrams



Newsome Academy
Everyone Exceptional Everyday

English

Our students will:

- read easily, fluently and with good understanding
- develop the habit of reading widely and often, for both pleasure and information
- acquire a wide vocabulary, an understanding of grammar and knowledge of linguistic conventions for reading, writing and spoken language
- appreciate our rich and varied literary heritage
- write clearly, accurately and coherently, adapting their language and style in and for a
- range of contexts, purposes and audiences
- use discussion in order to learn; they should be able to elaborate and explain clearly their understanding and ideas
- are competent in the arts of speaking and listening, making formal presentations, demonstrating to others and participating in debate.

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Sherlock Holmes

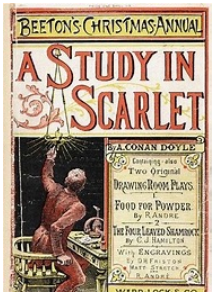
The aims of the sequence of learning are to ensure that all students learn following assessment skills:
-Develop analytical skills – Understand how modern Britain was shaped by the Victorians – Organise and structure texts
-Write creatively in a range of forms, styles and genres.

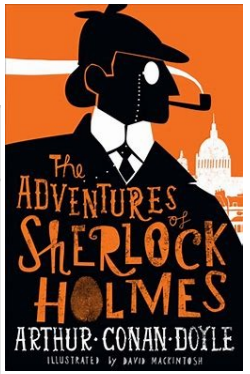
Knowledge

Non- Fiction Texts

Texts that deal with facts, opinions and the real world are usually described as non-fiction. Different text types, or forms of non-fiction have particular conventions. These are the typical or expected features of a form and include structure, language and tone. For example, a newspaper article usually has a headline, uses formal language and takes a serious tone. A political speech usually addresses the audience directly, includes persuasive language and often has a rousing tone.


SAMPLE FORMAL LETTER





Sherlock Holmes

Sherlock Holmes is a fictional detective created by British author Arthur Conan Doyle. Referring to himself as a "consulting detective" in the stories, Holmes is known for his proficiency with observation, deduction, forensic science and logical reasoning that borders on the fantastic, which he employs when investigating cases for a wide variety of clients, including Scotland Yard.

First appearing in print in 1887's A Study in Scarlet, the character's popularity became widespread. Though not the first fictional detective, Sherlock Holmes is arguably the best known. By the 1990s, there were already over 25,000 stage adaptations, films, television productions and publications featuring the detective and Guinness World Records lists him as the most portrayed human literary character in film and television history.

Whilst Holmes's detective work qualifies him to be considered a hero, he faces his adversary, the villain Moriarty, in many of his adventures.

Topic Links	Additional Resources
This topic links to: History- Victorian lives	To further practise and develop your knowledge see: https://www.bbc.co.uk/teach/class-clips-video/english-literature-ks3--ks4-sherlock-holmes/zn6tgwx https://www.bbc.co.uk/bitesize/guides/zwt3rdm/revision/1

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Sherlock Holmes

The aims of the sequence of learning are to ensure that all students learn following assessment skills:
-Develop analytical skills – Understand how modern Britain was shaped by the Victorians – Organise and structure texts
-Write creatively in a range of forms, styles and genres.

Skills

Skills Practice

- Write an article for a broadsheet newspaper in response to this statement:

'In Victorian times, everyone enjoyed a higher standard of living, good housing and job opportunities.'

- Write a letter to an agony aunt about a secret that could have important consequences.

Remember to use a range of methods (similes, metaphors,

Key Skill: Writing for purpose- Non-fiction writing

When we are creating non-fiction texts, they are always for a specific purpose and have a particular audience in mind. Before we start writing these kind of texts, we need to 'mind the GAP':

G – Genre- What type of text are you writing? A speech? An essay? An article? A letter? A leaflet?

A – Audience – Who will be reading (or listening to) your text? Does it need to be formal or informal?

P – Purpose – The purpose of your text: To inform; to entertain; to instruct or persuade.

Career Focus - Journalist

A journalist is a person who researches and reports on news and current events. They use various sources such as interviews, research and observations to gather and analyse information that they then use to write articles or features for print, TV, radio and online platforms.

Career link:
https://nationalcareers.service.gov.uk/job-profiles/newspaper-journalist

Challenge Activities

Task 1 – Can you create an ace detective character? You could either make a character profile or write a short story in which they solve a mystery.

Task 2: - Make a leaflet about Victorian London. What Was society like? What did people do there? Do some research online to find out impressive facts. Positive points will be awarded for good work.

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Sherlock Holmes

Vocabulary

You will be tested on five words per week.

Keyword	Definition
Deduction	The process of reaching a decision or answer by thinking about the known facts.
Inference	A conclusion reached on the basis of evidence and reasoning.
Malignant	A term for things or conditions that threaten life or well-being.
Vizard	To wear a mask or disguise.
Brougham	A horse-drawn carriage with a roof, four wheels and an open driver's seat in the front popular in the 19th century.
Compromise	To agree to or settle an argument by both parties reaching an agreeable term.
Accustomed	To accept something as normal or usual.
Exalted	To hold someone or something in very high regard or to think highly of someone.
Inextricable	Something that is impossible to untangle or separate.
Barbaric	To behave in a savagely cruel manner.
Aquiline	To describe someone's nose as looking curved, hooked or to look like an eagle's beak.
Conceivable	Something as possible to think of or imagine happening.

Keyword	Definition
Obstinacy	The quality of being stubborn.
Endeavoured	To try hard or to try to achieve something.
Antagonist	A villain, a character or person who is hostile to someone- an enemy of the protagonist (main character).
Oscilating	To move or swing back and forth in a regular rhythm.
Inadmissable	Something that is rejected or not accepted as valid.
Opulence	To have great wealth or luxuriousness.
Incommoded	To give inconvenience or distress to: disturb.
Abyss	A deep or seemingly bottomless chasm or pit.
Incalculable	Something that is too great to be calculated.
Torrent	A strong and fast-moving stream of water or other liquid.
Scruple	A feeling of doubt or a hesitation as to the right course of action.
Disposition	A person's natural qualities of mind and character.
Persecution	To harass or punish in a manner designed to injure, grieve, or afflict.

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Science

Our students will:

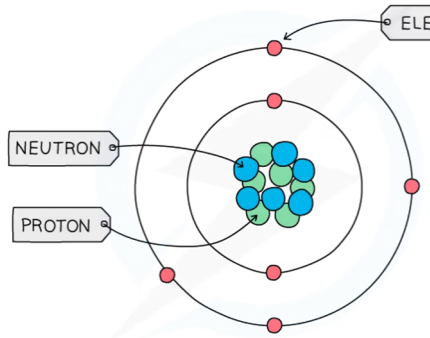
- develop **scientific knowledge and conceptual understanding** through the specific disciplines of biology, chemistry and physics
- develop understanding of the **nature, processes and methods of science** through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the **uses and implications** of science, today and for the future.

Year 8 - Pure Substances

The learning outcomes for this topic are:
- Describe elements, compounds and mixtures
- Explain how elements are arranged on the periodic table and their properties

Keyword	Definition
Atom	The smallest unit of matter.
Element	A substance made up of only one type of atom.
Compound	Contains two or more different elements that are chemically bonded together.
Mixture	Contains two or more different substances that are not chemically joined together.
Proton	Positively charged particle in the atom.
Neutron	Neutral particle in the atom.
Electron	Negatively charged particle in the atom.
Subatomic particle	Particles that make up the atom.
Nucleus	The centre of the atom, containing protons and neutrons.
Periodic table	A table of elements which are organised into groups and periods.
Group	A column on periodic table (all elements in the same group have similar properties).
Period	A row on the periodic table.
Properties	Characteristics or features of something.

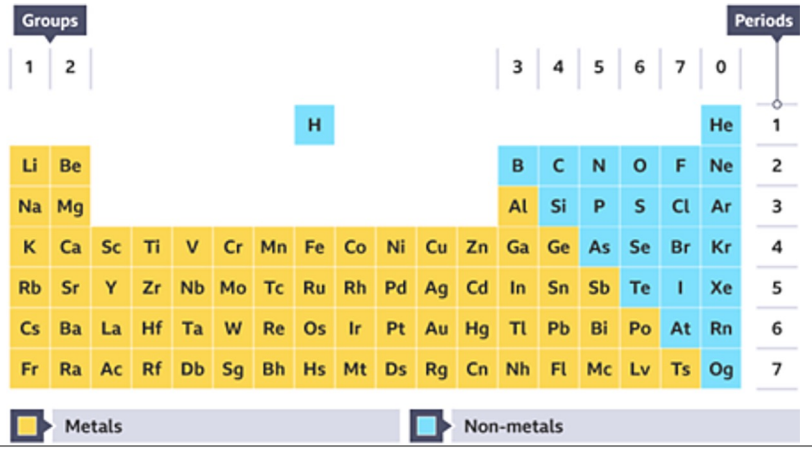
Atomic Structure



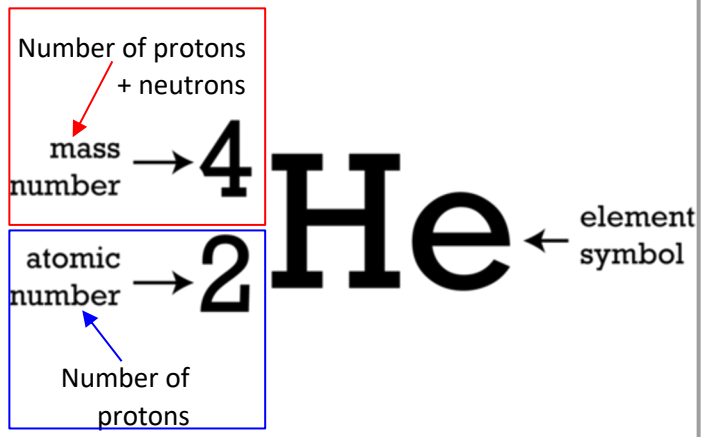
Overall, atoms have no charge (they are neutral). This is because they have the same number of protons (+1 charge) and electrons (-1 charge).

	Particle	Relative Mass	Charge
Located in the nucleus	proton	1	+1
Located in the nucleus	neutron	1	0
Located in the electron shells	electron	Very small	-1

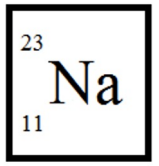
Periodic Table



Number of Subatomic Particles

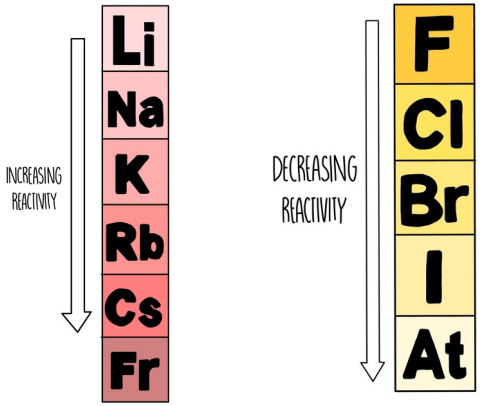


Worked example (sodium):



Protons = 11
Neutrons = 23 - 11 = 12
Electrons = 11

Alkali Metals and Halogens



Year 8 - Pure Substances

The learning outcomes for this topic are:
- Describe elements, compounds and mixtures
- Explain how elements are arranged on the periodic table and their properties

Retrieval Practice

Questions	Answers
What is an atom?	The smallest unit of matter.
What is an element?	A substance made up of only one type of atom.
What is a compound?	Contains two or more different elements that are chemically bonded together.
What is a mixture?	Contains two or more different substances that are not chemically joined together.
What is the structure of an atom?	Protons and neutrons located in the nucleus, with electrons in electron shells.
What is a subatomic particle?	A particle that makes up the atom.
What is the charge, mass and location of a proton?	Charge = +1, Mass = 1, Location = nucleus.
What is the charge, mass and location of a neutron?	Charge = 0, Mass = 1, Location = nucleus.
What is the charge, mass and location of an electron?	Charge = -1, Mass = very small, Location = shell..
How is the periodic table arranged?	In groups and periods (elements in the same group all have similar properties).
What is the overall charge of an atom?	An atom has no charge because it has an equal number of protons (+1) and electrons (-1).
Where are the alkali metals found and what are their properties?	They are found in group 1. They are highly reactive soft metals with low density and melting points.
Where are the halogens found and what are their properties?	They are found in group 7. Non-metals that form salts when they react with metals.

Career Focus - Where could this take you?

I am a chemical engineer. My job is to changing the chemical, biochemical and physical state of a substance to turn it into something else, such as making plastic from oil. I need to understand how to alter raw materials into required products, while taking into consideration health and safety and cost issues. My main workplace is in a lab, office or processing plant develop raw materials into a range of useful products. A career in the field will see you creating petrochemicals, medicine and plastics.

Challenge Activities

1. Make flashcards for the definitions and retrieval practice questions.
2. Make a mind map for this topic. Remember to include keywords and the links between information.
3. Research how the periodic table was created? What scientists were involved?
4. Make a 3D model of an atom (showing the subatomic particles)
5. Find out more about chemical engineers and what they do. What qualifications would you need for this career? What is the average salary?
6. Research the history of the atomic model? What were the previous models? How do we know the atom looks the way we think it does?

Topic Links

This topic links to other science topics such as
- States of matter
- Chemical reactions
- Energy

We will also be practising how to
- Identify mixtures and compounds using data

Additional Resources

Educake - https://www.educake.co.uk/

BBC Bitesize - https://www.bbc.co.uk/bitesize/topics/zcckk2p

YouTube Cognito - https://www.youtube.com/watch?v=fN8kH9Vvqo0 https://www.youtube.com/watch?v=jBDr0mHyc5M

Year 8 - Magnetism

The learning outcomes for this topic are:
- Describe how magnetic fields work
- Explain how the strength of electromagnets can be altered

Keyword	Definition
Non Contact Force	A force which acts on an object without coming physically in contact with it.
Bar Magnet	A rectangular piece of an object that shows permanent magnetic properties
North Pole	The side of the magnet where the magnetic field lines leave. Attracted to the south pole.
South Pole	The side of the magnet where the magnetic field lines enter. Attracted to the north pole.
Attract	When poles are pushed away from each other.
Repel	When poles are pulled towards each other.
Magnetic Field Lines	The area surrounding a magnet where the force is acting on another magnet or magnetic material.
Plotting Compass	A plotting compass is like a small bar magnet, with a north and south pole.
Electromagnet	A type of magnet in which the magnetic field is produced by an electric current.
Coil	A conductive wire that is wrapped around a magnetic material in a spiral shape.
Solenoid	A wire wrapped around a solid block of metal that produces a magnetic field when electricity passes through it.
The motor effect	The result of two interacting magnetic fields. North-South attract, North-North and South-South repel.

Magnetism

Magnetism is a non-contact force. Magnetic materials can be magnetised or they are attracted to a magnet. There are three types of metal that are magnetic; iron (including steel), nickel and colbalt.

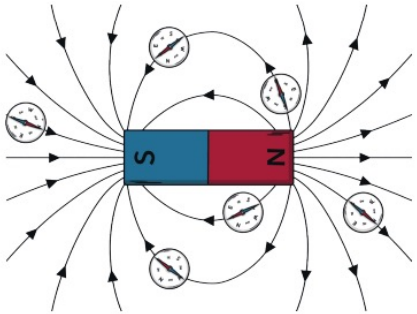
A bar magnet has a north pole and a south pole. It is a permanent magnet.

If the poles are opposite (North-South) then the poles attract. This means that the invisible magnetic force pulls the poles towards each other.

If the poles are the same (North-North or South-South) then they will repel. This means the poles push each other away.

Magnetic Field Lines

The magnet field around a magnet can be shown as lines around the magnet. The magnetic field can be plotted using either iron filings or a compass.



Electromagnets

When electricity flows through the wire, a magnetic field is created around the wire.

A coil of wire with many turns is called a solenoid. The shape of the magnetic field around a current-carrying solenoid is like the magnetic field pattern of a bar magnet.
If the magnetic field becomes strong enough to be useful, it is called an electromagnet.
A typical electromagnet consists of a wire coiled around an iron core.

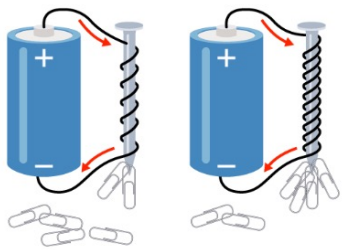
Electromagnets are useful because they can be switched on and off and their strength can be increased or decreased. This makes them useful for sorting scrap metal and recycling centres.

Investigating Electromagnets

We can investigate the factors that affect the strength of an electromagnetic by making a solenoid and recording the number pf paperclips it can pick up.

There are

The larger the current flowi
the electromagnet.



Year 8 - Magnetism

The learning outcomes for this topic are:
- Describe how magnetic fields work
- Explain how the strength of electromagnets can be altered

Retrieval Practice

Questions	Answers
What is a magnet?	A material or object that produces a magnetic field.
Why do we need to use equipment to investigate magnetic fields?	Because magnetic fields are invisible.
What is the name of the mini compass used to investigate magnetic field patterns?	A plotting compass.
The shape of a magnetic field is the same whether you use a plotting compass or iron filings?	True.
What are the ends of a magnet called?	Poles.
In which direction does a magnetic field point?	From North to South.
When opposite poles of a magnet are brought together they…….	Attract.
True or false? Earth behaves like a giant magnet.	True.
When current flows through a wire, it generates a magnetic field?	True.
How can you increase the strength of an electromagnet?	Add a soft iron core, increase the number of coils or increase the current.
What are the advantages of electromagnets?	You can change the strength, turn it on and of and reverse it.
What is the name of the coil of wire with many turns?	Solenoid

Career Focus - Where could this take you?

I am a MRI radiographer that works in hospitals to create images of patients bodies using scans. I operate the MRI machine that uses strong magnetic fields and radio waves to produce detailed images of inside the body.
In order to do my job well I need a good understanding of medical procedures, biology and computers.
In order to become a radiographer you need a degree or post graduate certificate approved by the health and care professions council. You also need to be a good communicator and be able to think and reason well.

Challenge Activities

1. Make flashcards for the definitions and retrieval practice questions.
2. Make a mind map for this topic. Remember to include keywords and the links between information.
3. Research how the electromagnets were invented. What are they used for?
4. Make a poster about magnets and the motor effect.
5. Find out more about MRI radiographers and what they do. What qualifications would you need for this career? What is the average salary?
6. Research how magnets are used in speakers. Produce a fact file about the development of the speaker and the importance of magnetic fields in the process of producing sounds.

Topic Links

This topic links to other science topics such as
- Atomic structure
- Energy
- Forces

We will also be practising how to
- Investigate magnetic fields and drawing diagrams

Additional Resources

Educake - https://www.educake.co.uk/

BBC Bitesize - https://www.bbc.co.uk/bitesize/topics/zrvbkqt

YouTube Cognito - https://www.youtube.com/watch?v=3elpPfyHV0E https://www.youtube.com/watch?v=79_SF5AZtzo

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Year 8 Variation

The aims of the sequence of learning are to ensure that all students:

- Identify and record different types of variation
- Explain how species are classified

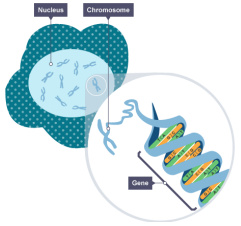
Keyword	Definition
Variation	The differences that occur between living things.
Continuous variation	Where differences between living things can have any numerical value.
Discontinuous variation	Where differences between living things can only be grouped into categories.
Species	A **species** is a group of organisms that interbreed to produce fertile offspring.
Adaptation	A change in structure or function that improves the chance of survival for an animal or plant within a given environment
Inheritance	When genetic information is passed on from parents to offspring via DNA.
DNA	The genetic code that has all the instructions that a living thing needs to grow, function and reproduce.
Gene	A section of DNA that code for a characteristic e.g. eye colour
Classification	The arrangement of organisms into orderly groups based on similarities.
Classification key	A system which divides things into groups or types
Bar chart	A graph where values are represented by the height or length of lines/rectangles. Best for discontinuous data.
Line graph	A graph where values are represented by data points and include a line of best fit. Best for continuous data.

Key Concepts

DNA and Inheritance

DNA is the genetic code which makes up genes, which are responsible for giving an organism a specific characteristic.
It is a chemical made up of two long strands, arranged in a spiral. This is the double-helix structure.

DNA carries genetic information - the genetic code. It has all the instructions that a living organism needs to grow, reproduce and function. DNA is passed on from parents to their offspring during fertilisation.



Variation

There is variation between individuals of the same species. Some variation is inherited, some is caused by the environment and some is a combination. Variation between individuals is important for the survival of a species, helping it to avoid extinction in an always changing environment.

Discontinuous Variation
Surveys of discontinuous variation give us values that come in groups rather than a range. Human blood groups are an example of discontinuous variation. There are only four blood groups possible - A, B, AB or O. You cannot have a blood group in between these four groups, so this is discontinuous variation. They are best represented by charts (bar charts, pie charts etc).

Continuous Variation
Surveys of continuous variation give us results that come in a range. Human height is an example of continuous variation. It ranges from that of the shortest person in the world to that of the tallest person. Any height is possible between these values, so this is continuous variation. They are best represented by line graphs.

Species

A species is a group of similar organisms that can breed with one another to produce fertile offspring. For example, humans are one species and dogs are another species.

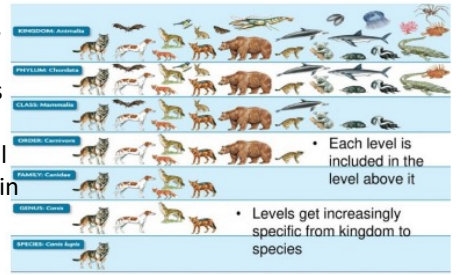
Individuals of the same species can reproduce to make more individuals of the same species. Two individuals belonging to different species cannot normally reproduce together. If they do, their offspring is often infertile and unable to reproduce.

Sometimes individuals from two different species can reproduce. For example, animals called ligers are produced when a male lion and a female tiger reproduce. Tigons are produced when a female lion and male tiger have cubs.

Classification

Living things can be grouped according to different criteria (where they live, what type of organism they are, what features they have). A classification key is a tool that is used to group living things to help us identify them using recognisable characteristics.

The Linnaean system, named after Carl Linnaeus, has different levels where the number of living things in each group gets smaller and smaller, until there will just be one type of animal in the species group.



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Retrieval Practice

Questions	Answers
What is a species?	A group of organisms that interbreed to produce fertile offspring.
How are characteristics inherited?	Half the DNA is given from the mother and half from the father. Each parent passes on a copy of each gene.
What causes variation?	Variation can be caused by either genetic or the environment, or both.
What is the difference between continuous and discontinuous variation?	Continuous variation is data that when collected can be a range of values. Discontinuous variation is data when collected can be put into groups/categories.
Is eye colour an example of continuous or discontinuous variation?	Discontinuous
Is height an example of continuous or discontinuous variation?	Continuous
A line of best fit is drawn on bar charts of discontinuous variation.	False
Which type of graph is used for discontinuous variation?	Bar chart
How are species classified?	Kingdom, Phylum, Class, Order, Family, Genus, Species
What is a classification key?	A tool to help group organisms based on their characteristics.
Which scientist first suggested the uniform classification system?	Carl Linneaus
What main characteristics define the group phylum?	Whether they have a backbone.
What is the binomial name for a human?	Homo sapien

Career Focus - Where could this take you?

I am a crop plant breeder. The aim of my job is to improve the quantity and quality of the food produced by crops. I use selective breeding to help give plants desirable characteristics that farmers need when growing crops. I work mainly outside (in the field) although some work in carried out in a lab.
As this takes time to happen, so I need to be very patient when waiting to see the results of my work.
My responsibilities include carrying out research methods and techniques, cross pollinating plants, making observations and analysing results, keeping detailed records and presenting findings to farmers and other scientists.

Challenge Activities

1. Make flashcards for the definitions and retrieval practice questions.
2. Make a mind map for this topic. Remember to include keywords and links between information.
3. Produce a fact file or a poster about the different ways variation in a species can occur.
4. Construct a story board to explain how selective breeding or genetic modification works.
5. Find out about a famous scientist that changed our understanding about life diversity and how species evolve over time.
6. Research about other careers linked to life diversity – forensic scientist, DNA analysts, Genetic counsellors.

Topic Links

This topic links to:

- Cells
- Energy
- Photosynthesis and Respiration

We will also be practising how to

- Draw punnet squares
- Calculate probability

Additional Resources

To further practise and develop your knowledge see:

Educake - https://www.educake.co.uk/
BBC Bitesize - https://www.bbc.co.uk/bitesize/topics/zxhhvcw/articles/zdj3vwx
YouTube Cognito - https://www.youtube.com/watch?v=VjlE5QzI1S0

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Humanities

Our students will:

- know and understand the history of these islands as a coherent, chronological narrative, from the earliest times to the present day: how people's lives have shaped this nation and how Britain has influenced and been influenced by the wider world
- understand historical concepts such as continuity and change, cause and consequence, similarity, difference and significance, and use them to make connections, draw contrasts, analyse trends, frame historically-valid questions and create their own structured accounts, including written narratives and analyses
- understand the methods of historical enquiry, including how evidence is used rigorously to make historical claims, and discern how and why contrasting arguments and interpretations of the past have been constructed
- develop contextual knowledge of the location of globally significant places – both terrestrial and marine – including their defining physical and human characteristics and how these provide a geographical context for understanding the actions of processes
- understand the processes that give rise to key physical and human geographical features of the world, how these are interdependent and how they bring about spatial variation and change over time

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Year 8 Population Management

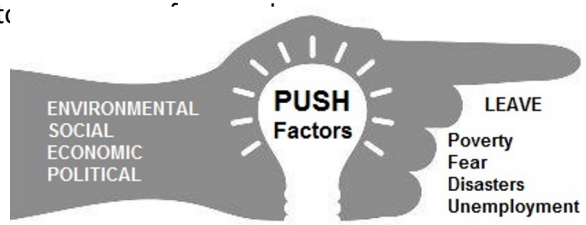
The aims of the sequence of learning are to ensure that all students:
- Construct and describe population pyramids
- Explain the causes and impacts of migration
- China's one child policy a success or failure?

Keyword	Definition
Population	Word used to describe a group of people. Populations can exist at many scales,
Population Density:	How crowded or empty a place is (measured in people per square km)
Population Distribution:	The pattern of where people live.
Densely Populated	: A crowded area
Sparsely Populated	An empty area
Birth Rate	Is a measure of the number of healthy babies born each year per 1000 people in the population
Death Rate	The number of deaths per year per 1000 people in the population.
Migrant	The permanent movement of people from one place to another.
Push Factor	Negative things that force people to move from one place to another. A push factor may be an earthquake.
Pull Factor	Positive things that attract people to from one place to another place. An example of a pull factor is a place having better job opportunities
Immigrants	People who move into a country from another country
Emigrants	People who move out of a country to live in another country

Key Concepts

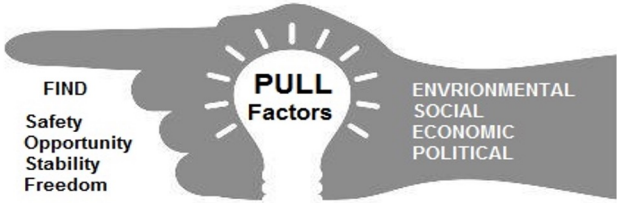
Push factors

These are the reasons for why someone would want t
- Lack of services
- War
- Famine (starvation/food shortages)
- Few Jobs
- Natural Disasters



Pull factors

These are the reasons for why someone would want to move to a place:
- Higher quality of life (better homes, etc.)
- Access to education
- "Bright Lights" of the city
- Better healthcare
- Better job opportunities



Case Study: Migration to the U.S.A *(Mexico or Puerto Rico)*

Many people have migrated to America to seek a better life, such as people from Mexico and Puerto Rico. Reasons for this include:
- Less access to education.
- Higher crime rates and less protection.
- Hot and arid climates
- Easier access to a doctor when needed.
- Higher quality homes and living standards.

However, migrants often face challenges when coming to America. This includes racism, and less desirable jobs.

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Year 8 Population Management

The aims of the sequence of learning are to ensure that all students:
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- China's one child policy a success or failure?

Key Concepts

Migration – *When people move from one place to another.*

Refugees and Asylum Seekers

Refugees: *people who have been forced to move away from their home country and have been granted asylum in another country.*
Economic migrants: *a person who has left his or her own country and seeks to find employment in another country.*
Asylum seekers: *means a person who has applied for asylum in another country*

Rural-urban migration

- Rural to urban migration is the movement of people from the countryside to the city.
- People move from the countryside due to various push factors. People believe that by moving to the city they will have access to more opportunities. However, in many cases moving to the city does not mean a better quality of life.
- Many poor people end up living in areas on the edge of a city, in small, very cheaply built houses. These areas are known as shanty towns or slums.

Case Study: China's One Child Policy

In order to manage its own growing population, China introduced the One Child Policy in 1979. The new policy meant that any couple having a second child would get a heavy fine, around £3,000.

Impacts of the Policy

- The fertility rate has dropped from 5.7 in 1960 to 1.7 in 2016.
- Large numbers of female babies have ended up homeless or in orphanages, and in some cases killed.
- Many people claim that some women, who became pregnant after they had already had a child, were forced to have an abortion and many women were forcibly sterilised.
- There have been reports of female infanticide (killing of infants).

Long-term implications of the policy are that China now has a gender imbalance in their population. Its ageing population also has a high **dependency ratio**.

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Year 8 Population Management

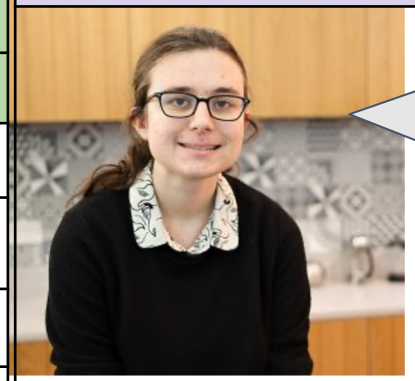
The aims of the sequence of learning are to ensure that all students:

- Construct and describe population pyramids
- Explain the causes and impacts of migration
- China's one child policy a success or failure?

Retrieval Practice

Questions	Answers
What is a 'migrant'?	Someone who moves from one place to another
Name 2 push factors	War and natural hazards
Name 2 pull factors	Improved standards of living and better healthcare
Name the positive effects on a country due to migration	Larger workforce
Name the negative effects on a country due to migration	Pressure on the health service with more people to treat
What was Enrique trying to do? And why?	Migrate to the USA to work as he would receive a bigger wage
Describe the problems caused by China's population policy	A gender imbalance as boys were preferred to girls
Explain why there are concerns about the effects of China's family planning policy	Takes away people's rights to have children
Explain why there is a gender imbalance in China	People wanted a boy as they would look after the parents when they were older
Give a benefit of the one child policy	The fertility rate has dropped from 5.7 in 1960 to 1.7 in 2016
Give two negative impacts of the policy and explain one	Many women had to have an abortiion and some were forced to be sterilised meaning they could not have any more children

Career Focus - Where could this take you? Executive Officer - Health Analysis and Pandemic Insight



As an apprentice at the Office for National Statistics, I have had the opportunity to develop a range of different skills in data science, an area which I had limited experience in before joining the scheme. The combination of learning theory and in job application has been really valuable.

Challenge Activities

- What are the main reasons for internal migration?
- What are the main reasons for international migration?
- What impact will the migration of people to the USA have on Mexico?
- Suggest why the birth rate in many poor countries is falling.
- Describe the features of China's family planning policy since the 1990s

Topic Links

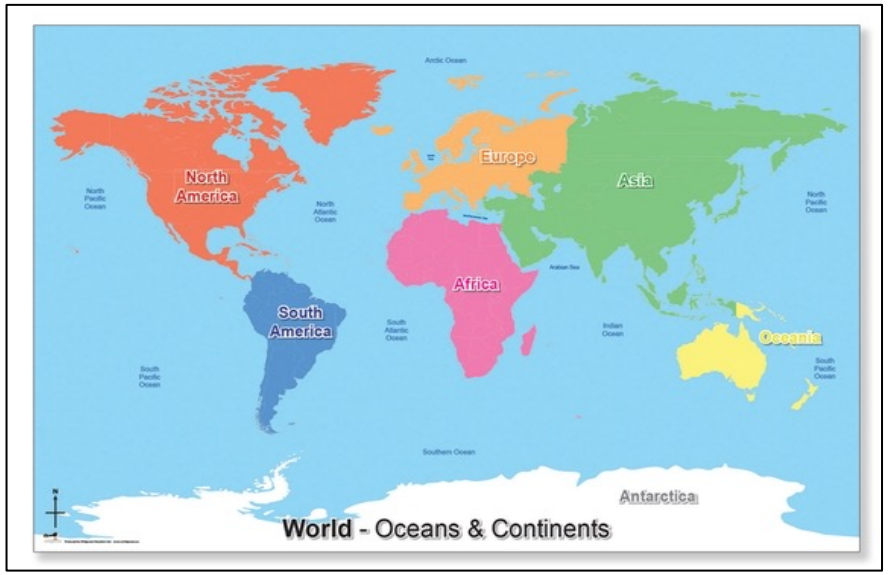
This topic links to other Humanities topics such as: Weather Hazards, Coastal landscapes, River landscapes, Tectonic landscapes, Resource Management, Economic development UK Africa, China, India, Middle East

Additional Resources

World info **Bitesize** **Growth**

Key Concepts:

World – Countries and Oceans



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Year 8 Queen Elizabeth I

The aims of the sequence of learning are to ensure that all students can:

- Argue whether the benefits outweighed the loss by breaking with Rom
- Evaluate whether Queen Mary was "bloody" or "misunderstood"
- Explain the biggest threat to Elizabeths early reign
- Evaluate if Elizabeth successful in dealing with the Catholic threat

Keyword	Definition
Monarch	A King or Queen – had the right to rule by the 'grace of God'.
Privy Council	Leading courtiers and advisors, who advised the monarch.
Court	The inner social circle of the Queen, based in her palaces.
Parliament	Senior political figures whose duty was to advise the Queen.
Courtiers	Members of the nobility who attended Court (see above).
Revolt	An uprising or rebellion against the monarch.
Plot	A planned rebellion or attack – normally one which is not carried out.
Spymaster	Francis Walsingham, Elizabeth's chief spy responsible for her security.
Jesuits	Extreme Catholics carrying out the wishes of the Pope.
Privateers	Pirates whose activities are legal and in service of the Crown.
Armada	A fleet of warships.
Galleon	Large but slow fighting ships used by the Spanish.
Fleet	A group of ships.
Fire Ships	Unmanned ships loaded with explosives and sent into the Spanish fleet.
Tactics	Carefully planned actions and strategies to achieve a specific goal.

Key Concepts

Elizabeth's problems in 1558

Legitimacy: In the view of the Catholics, Elizabeth was illegitimate as Henry VIII's divorce from Catherine of Aragon was never agreed by the Pope.

Financial Weakness: The Crown was £300,000 in debt due to the expensive war with France that Mary I had fought. This was a huge sum in 1558.

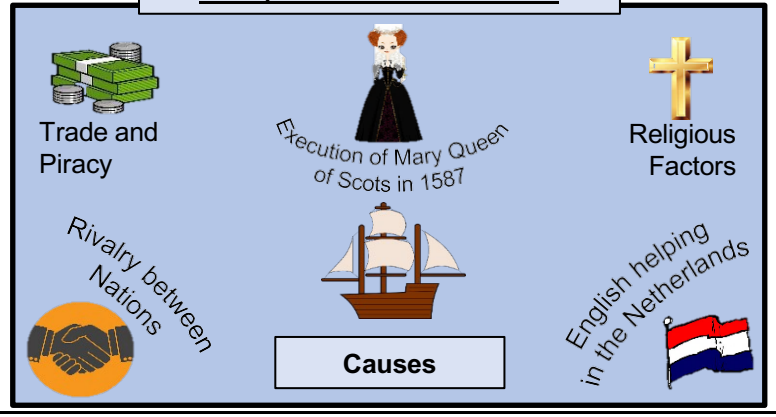
Gender & Marriage: Most people thought women were not capable of ruling alone. Women were seen as the weaker sex. Elizabeth was being pushed to get married.

Foreign threat: England had Catholic enemies in both France (who they had been at war with) and Spain (who Elizabeth had refused a marriage proposal from).

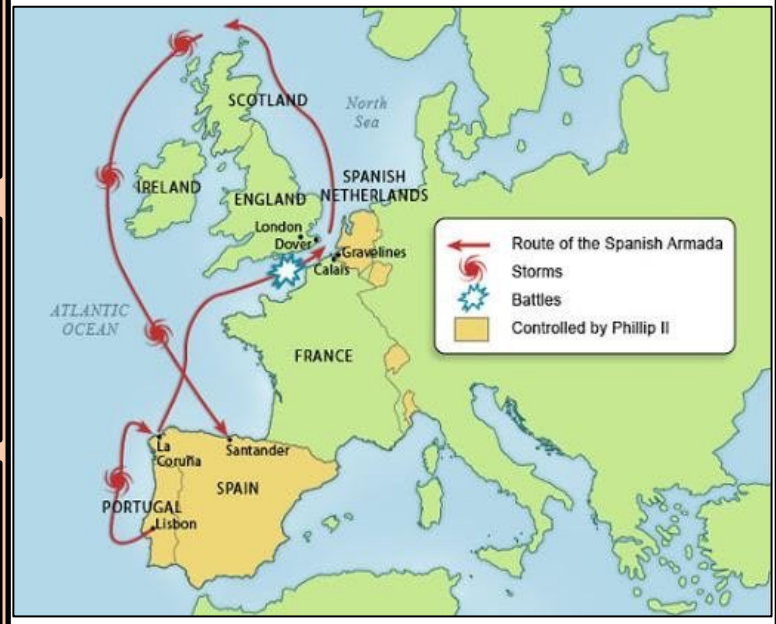
Religion England was in a period of religious instability since Henry VIII's break with Rome. Mary I, Elizabeth's sister, had heavily persecuted Protestants.

Mary Queen of Scots: Claimed that she was the legitimate Catholic heir to the throne and was married to the Catholic king of France.

The Spanish Armada invades…



The Spanish Armada 1588



The Defeat of the Spanish Armada

English:

- Excellent leadership
- Drake's actions in Cadiz causing disruption and delay
- Innovative English tactics such as fire ships
- Home advantage – knowledge of the local area
- More effective weapons

Spanish:

- Poor leadership – lack of experience fighting at sea & lack of flexibility
- Complicated plan
- Lack of communication
- Impractical tactics and weapons

Neither / Luck:

- The wind and stormy seas

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Year 8 Queen Elizabeth I

The aims of the sequence of learning are to ensure that all students can:

- Argue whether the benefits outweighed the loss by breaking with Rom
- Evaluate whether Queen Mary was "bloody" or "misunderstood"
- Explain the biggest threat to Elizabeths early reign
- Evaluate if Elizabeth successful in dealing with the Catholic threat

Retrieval Practice

Questions	Answers
What were the names of Queen Elizabeth I's Mother and Father?	Henry VII and Anne Bolyen
What religion was Elizabeth I?	Protestant
What solution did Elizabeth want for all the religious problems in England?	To unite the country
Why were Elizabeth's advisors pushing her to get married? (Tell me 2 reasons).	To have an heir to the throne and to reduce threats to overthrow her throne
Give evidence that suggest Mary Queen of Scots was guilty of treason against Elizabeth:	1586 Mary was implicated in a plot to assassinate Elizabeth. She was found guilty of treason.
What caused the Spanish Armada to attack England in 1588? (Be specific)	England was a Protestant country, and Spain was a Roman Catholic one. The Spanish made no secret of their hostility to the English Queen, who they believed was illegitimate and had no right to the English throne
Why did the Spanish Armada fail to defeat England? (Give three ways)	Poor leadership, a complicated plan and poor weapons
What happened in England after the defeat of the Armada?	made England a world-class power and introduced effective long-range weapons into naval warfare for the first time
Why did the Tudor Dynasty end when Elizabeth died in 1603?	Elizabeth died on 24 March 1603 without naming a successor and leaving only her legacy behind

Career Focus - Where could this take you?

I am a Journalist: My job is to write news articles and stories for newspapers, magazines and websites. I sometimes prepare news to be broadcasted on TV too. To carry out my work, I need to do a lot of research about an event, interview people and gather evidence to include in my stories and articles. When re-telling a story, I must include true facts and try to remain unbiased to give a balanced overview of events.

Challenge Activities

1. Produce a FULL fact file about Queen Elizabeth I. You should include information about her life and reign, historical facts and images.
2. Mary Queen of Scots on trial: Create a piece of work which looks at the evidence for and against Mary committing treason. You could do this by producing a poster showing both sides or by writing a script for a court room role play.
3. Write a newspaper article re-telling the story of the Spanish Armada. You must include what caused the Armada to attack England, the events of what happened and the outcome. Remember a journalist must include true facts and remain unbiased.

Topic Links

This topic links to other humanities topics such as:

- The Tudors
- Christianity
- Maps of Europe

We will also be practicing how to:

- Write in PEEL paragraphs, which will help your extended writing skills in English too.

Additional Resources

To further practise and develop your knowledge see:

Key Concepts

TIMELINE 0–2000 AD

A timeline is a way to record important events and track when they happened.

43 AD – Romans invade Britain.

71 AD – Romans conquer Northern England.

140 AD – Romans conquer Scotland.

400–410 AD – The Romans withdraw from Britain.

516 AD – British defeat Anglo-Saxons at the Battle of Mount Badon.

867 AD – Vikings capture Northumbria.

926 AD – Anglo-Saxons conquer Eastern England.

ROMAN BRITAIN 43–410 AD

ANGLO-SAXON & VIKING BRITAIN 410–1066 AD

0 | 100 AD | 200 AD | 300 AD | 400 AD | 500 AD | 600 AD | 700 AD | 800 AD | 900 AD | 1000 AD

78 AD – Romans conquer Wales.

122 AD – Emperor Hadrian orders his soldiers to build a wall across Northern Britain. It became known as Hadrian's Wall.

449 AD – Anglo-Saxons invade Britain.

789 AD – The Vikings first invade England in Dorset.

874 AD – The Vikings conquer the Kingdom of Mercia.

1066 AD – William of Normandy defeats King Harold at the Battle of Hastings and becomes King of England.

1348 AD – The Black Death arrives in England and kills almost half of the population.

1534 AD – Henry VIII forms the Church of England and makes himself Head of the Church.

1707 AD – The Act of Union joins England and Scotland into one country.

1800 AD – The Acts of Union join Ireland with England and Scotland.

1939–1945 AD – The Second World War occurs.

MEDIEVAL BRITAIN 1066–1485 AD

TUDOR BRITAIN 1485–1603 AD

STUART BRITAIN 1603–1714 AD

GEORGIAN BRITAIN 1714–1837 AD

VICTORIAN BRITAIN 1837–1901 AD

20TH CENTURY BRITAIN 1901–2000 AD

1000 AD | 1100 AD | 1200 AD | 1300 AD | 1400 AD | 1500 AD | 1600 AD | 1700 AD | 1800 AD | 1900 AD | 2000 AD

1453 AD – The Hundred Years War ends.

1588 AD – The English defeat the Spanish Armada.

1776 AD – The American colonies declare independence from Britain during the War of Independence.

1914–1918 AD – The First World War occurs.

1086 AD – The Domesday Book is compiled to record what people in Britain owned and calculate how much tax they owed.

1337 AD – King Edward III invades France and the Hundred Years War begins.

1845 AD – The Great Irish Potato Famine begins. Millions of people die or migrate to other countries.

Religious Studies

Key Concepts

SIX WORLD RELIGIONS (spellings vary)

Religion name	Follower	SYMBOL	NAME OF GOD/GODS	COUNTRY OF ORIGIN	FOUNDER /MESSENGER	HOLY BOOK/S	PLACE OF WORSHIP	MAIN FESTIVALS	Denominations /schools/type/	Followers in the UK (approx.)	Followers in the world (approx.)
BUDDHISM	Buddhist	 Dharmachakra	none	India (Today in Nepal)	Siddhartha Gotama (The Buddha)	Tripitaka	Temple Shrine room Vihara	Wesak Dharma day	Theravada Mahayana Zen Triratna Pure Land	98,000	376 million
HINDUISM	Hindu	 Om/Aum	Brahman (Shiva Vishnu Brahma)	Indus Valley	none	Vedas Bhagavad Gita Mahabharata	Mandir Temple	Holi Diwali		272,000	1 billion
CHRISTIANITY	Christian	 Cross	God	Palestine Israel	Jesus of Nazareth	Bible	Church Cathedral	Easter Christmas	Catholic Eastern Orthodox Church of England Baptist Quaker	30 million	2.2 billion
JUDAISM	Jew	 Star of David	G_d	Israel	Abraham	Torah Tenakh	Synagogue	Rosh Hashanah Pesach Yom Kippur	Hasidic Orthodox Reform Liberal	214,000	14 million
SIKHISM	Sikh	 The Khanda	God Waheguru	Punjab, India	Guru Nanak The ten Gurus	Guru Granth Sahib	Gurdwara	Vaisakhi Diwali	Sahajdhari Amritdhari	239,000	23 million
ISLAM	Muslim	 Five pointed star & crescent moon	Allah (God)	Saudi Arabia	Muhammad (pbuh)	Quran	Mosque	Eid-ul-Fitr Eid-ul-Adha	Sunni Shi'a Sufi	1,278,000	1.6 billion

Theist = Someone that believes in God
Atheist= Someone that doesn't believe in God
Agnostic = Someone that is not sure about the existence of God

Monotheist = Someone that believes in one God
Polytheist= Someone that believes in many gods

Timeline of religions (all dates approximate)

2000 BC	1500BC	560 BC	0	30 AD	610 AD	1500 AD
Hinduism	**Judaism**	**Buddhism**		**Christianity**	**Islam**	**Sikhism**

Newsome Academy Year 8 Sikhism - Practices

Everyone Exceptional Everyday

The aims of the sequence of learning are to ensure that all students:

- **Explain why the Guru Granth Sahib is known as the last living guru**
- **Describe Sikhs beliefs about the nature of God**
- **Describe how do Sikhs view marriage**
- **Describe the common features of Sikh festivals**

Keyword	Definition
Sewa	Helping someone without asking for everything in return.
Khalsa	The word Khalsa means pure. Joining the Khalsa is a sign of commitment in Sikhism.
Formation	This is a group of Sikhs coming together to form the Khalsa community.
Humanitarian	Humanitarian is when a person is devoted to working for the health and happiness of other people.
Gurparabs	Gurparabs are festivals that are associated with the lives of the Gurus. They are happy occasions which are celebrated most enthusiastically by Sikhs. The most important Gurparabs are; The birthday of Guru Nanak, the birthday of Guru Gobind Singh.
Langar	A communion kitchen (free). This is food given or made available to those that need it. Langar is mostly given in Gurudwara's (Sikh temple).
Environmentalist	A person who is concerned about the environment or advocates (speaks out) in order to protect the environment around us.

Key Concepts

Sewa

Sewa means 'selfless service'. It is acting selflessly, helping others in a variety of different ways, without any reward or personal gain. Sewa is a way of life for Sikhs and is part of their daily routine. Sikhs believe that Sewa is an act of service towards Waheguru (God).

Sikhs perform Sewa in a variety of ways, such as helping the local community, helping at the gurdwara, and cleaning, washing dishes or serving in the langar.

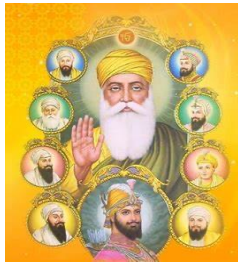
Performing Sewa is important for Sikhs because:

- it demonstrates the belief in equality and the importance of all people
- it serves others, showing humility (showing that people do not believe they are better than anyone else)
- it shows love for Waheguru – Sikhs believe that Waheguru is present in everyone, and so helping people means helping Waheguru
- it helps Sikhs to move away from the five vices, which are anger, pride, lust, greed and attachment to material possessions.

The Khalsa

The tenth Guru, Gobind Singh, recreated the Sikhs as a military group of men and women called the Khalsa in 1699, with the intention that the Sikhs should for ever be able to defend their faith.

Gobind Singh established the Sikh rite of initiation (called Khandi) and the 5K's which give Sikhs their unique appearance.



Newsome Academy Year 8 Sikhism - Practices

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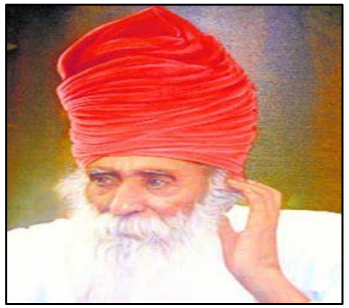
Key Concepts



Bhagat Puran Singh

A Sikh Humanitarian. During the 20th century (and continuing) poverty and homelessness in India was high, there were countless people helpless on the streets. Beggars and the handicapped had littered the streets. "They are helpless and helping them would do no good" was the common belief at the time.

Bhagat Puran Singh proved this belief wrong through a life of service and dedication to these people; he created help for the helpless ... a home for the homeless ... and hope for the ones who had given up on humanity.

Ravi Singh

Much of the hue and cry is over how the organization prioritizes the dispersion of funds to needy families.

Despite all the detraction, the relatively small charity from UK which was founded by Ravi Singh in 1999, has an impressive record of providing humanitarian assistance in over 10 countries ranging from war torn regions such as Kosovo, Afghanistan and Syria, to areas hit by natural disasters such as Pakistan, Turkey, and Haiti.

Significance and influence of the Khalsa

Baisakhi, or **Vaisakhi**,

This is the festival which celebrates Sikh New Year and the founding of the Sikh community in 1699, known as the Khalsa.

In 1699, Sikhs from all over the Punjab gathered to celebrate the local harvest festival. Guru Gobind Rai came out of a tent carrying a sword and requested that anyone who was prepared to give up their life for their religion come forward.

A young Sikh came forward and disappeared into the tent with the Guru. Then the Guru reappeared alone with his sword covered in blood and asked for another volunteer. This happened another four times until a total of five Sikhs had gone into the tent with him.

Eventually all five emerged from the tent alive and wearing turbans, along with and the Five k's. These five men became known as the Panj Piare meaning 'Five Beloved Ones'.

Amrit Sanskar, the rite of initiation into the Khalsa, often occurs on Baisakhi, very early in the morning. Amrit Sanskar involves five men, Panj Piare, initiating candidates with sweetened water (Amrit) and the candidates commit themselves to observing a daily discipline.

Anand Karaj, the Sikh marriage ceremony, emphasizes the spiritual nature of physical union. Sikh wedding hymns describe the wedded state of the soul bride with the divine groom. Marital bliss and family harmony is exemplified by the Sikh gurus, who entered matrimony and fathered children.

Sikh husband-wife love is modelled on the love between human soul and the Supreme Soul as described in the four Lavan (hymns composed by the Fourth Guru in the Suhi raag section of Guru Granth Sahib). The bridegroom and the bride vow fidelity to each other in the presence of the Guru (Granth Sahib) and the holy congregation. They accept their obligations by bowing before Guru Granth Sahib.

The Anand marriage is a sacrament, and no document is necessary.

Newsome Academy Year 8 Sikhism - Practices

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- **Describe the common features of Sikh festivals**

Retrieval Practice

Questions	Answers
What does Sewa mean?	Sewa is a key concept in Sikhism. This means helping others without asking for anything in return.
Who created the Khalsa in 1699?	The tenth Guru, Gobind Singh, recreated the Sikhs as a military group of men and women called the Khalsa in 1699,
How many Gurus were there?	There were 10 human Gurus in Sikhism, with the last Guru being the Guru Granth Sahib.
What did Bagat Puran Singh do?	Bagat Puran Singh was a humanitarian. He helped the homeless and handicapped people.
Why is the Anand Karaj important in Sikhism?	The Anand Karaj is important in Sikhism as it is the Sikh marriage ceremony. This emphasizes the spiritual nature of physical union.
What are Gurparabs?	Gurparabs are festivals which are associated with the lives of the Gurus.
What is langar?	Langar is when food is available to those in need or those who need it.
Explain what Lavan is in Sikhism.	Lavan is the circling of the Guru Granth Sahib, total number is 4. The word 'Lavan' is a spiritual term used for the union of 'Atma' (Bride) with the 'Parmatma' (Groom).

Career Focus - Where could this take you?

Job Role: Medical humanitarian team leader.

I help those that need my professional and medical help in countries where aid is drastically needed. I aid and provide a service where I am at the forefront dealing with patients all day long. Studying religious education at school was an eye opener of how big and respectful and kind this world can be. It has led me to enhance my expertise and knowledge to spread it to those that need it. Some of the skills within Religious Education included; research skills, listening to other people about their problems, discussing case studies on different humanitarians and showing respect when they practice their faith."

Challenge Activities

- Explain who the 10 Gurus are in Sikhism and their significance.
- Research the 5K's and link it to Sikhs today. What impact do the 5k's have on a Sikh today?
- Create a leaflet for someone to explain the Sikh practices in detail.
- Research the history of Guru Nanak and create a timeline of his journey.
- Create an invitation poster to a Sikh Marriage – research and include key stages within a Sikh wedding ceremony, explain the significance of each stage.

Topic Links

This topic links to other RE topics such as

- Hinduism
- Sikhism
- Buddhism

We will also be practising how to

- Argue a point and practise our Voice 21
- Participate in debates
- Write PEE sentences/how to answer exam questions

Additional Resources

To further practise and develop your knowledge see:

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MFL

Our students will:

- understand and respond to spoken and written language from a variety of authentic sources
- speak with increasing confidence, fluency and spontaneity, finding ways of communicating what they want to say, including through discussion and asking questions, and continually improving the accuracy of their pronunciation and intonation
- can write at varying length, for different purposes and audiences, using the variety of grammatical structures that they have learnt
- discover and develop an appreciation of a range of writing in the language studied.

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Year 8 Les fêtes

The aims of the sequence of learning are to ensure that all students learn to:

- Discuss festivals in France and England.
- Express simple references about festivals.
- Recognise the present tense of er, ir and re verbs.
- Conjugate the singular version of regular verbs in the present tense
- Use aller + infinitive to make the simple future.
- Recognise and use high numbers and understand prices.

Keyword	Definition
C'est quelle fête?	Which celebration is it?
C'est **Pâques.**	It's **Easter.**
La fête nationale	Bastille Day (14th July)
La fête des Mères	Mothers' Day
La fête du travail	Labour Day (1st May)
L'Aïd	Eid
Noël	Christmas
La Toussaint	Halloween
Quelle est ta fête préférée?	What is your favourite celebration?
Pourquoi?	Why?
Parce que j'aime le chocolat.	Because I like chocolate
Qu'est-ce que tu fais pour fêter **le Nouvel An**?	What do you do to celebrate **New Year?**
Le soir on **danse** et on **mange** avec **la famille.**	**In the evening**, we **dance** and **eat** with **family**.
Qu'est que tu manges?	What do you eat?
C'est à quelle date?	What date is it on?
Qu'est-ce que tu vas faire?	What are you going to do?
Vous désirez?	What would you like?
Ça fait combien	How much is it?

Key Concepts

Grammar

Present Tense

	–er verbs *danser*	–ir verbs *finir*	–re verbs *attendre*
je / j'	*dans**e***	*fin**is***	*attend**s***
tu	*dans**es***	*fin**is***	*attend**s***
il/elle / on	*dans**e***	*fin**it***	*attend*
nous	*dans**ons***	*fin**issons***	*attend**ons***
vous	*dans**ez***	*fin**issez***	*attend**ez***
ils/elles	*dans**ent***	*fin**issent***	*attend**ent***

Future Tense

To talk about what is going to happen in the future, use part of the verb ***aller*** followed by the **infinitive**.

aller (to go) + **infinitive**

je ***vais*** ***écouter***
tu ***vas*** ***écouter***
il/elle/on ***va*** ***écouter***
nous ***allons*** ***écouter***
vous ***allez*** ***écouter***
ils/elles ***vont*** ***écouter***

je ***vais*** ***choisir*** I **am going to choose**

Phonics and Vocabulary

qu

quatre	musique	équipe
4		

20	vingt	85	quatre-vingt-cinq
30	trente	90	quatre-vingt-dix
40	quarante	95	quatre-vingt-quinze
50	cinquante	100	cent
60	soixante	200	deux-cents
70	soixante-dix	350	trois-cent-cinquante
75	soixante-quinze	1 000	mille
80	quatre-vingts	2 000	deux-mille

Question words

qu'est-ce que? ..... *what?*
comment? ..... *how?*
avec qui? ..... *with whom?*
pourquoi? ..... *why?*
où? ..... *where?*
quand? ..... *when?*

Newsome Academy
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Year 8 Les fêtes

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- Recognise and use high numbers and understand prices.

Retrieval Practice

Questions	Answers
C'est quelle date aujourd'hui?	C'est le trois novembre deux mille vingt.
C'est quelle fête?	C'est l'Aïd.
Quelle est ta fête préférée?	J'adore mon anniversaire parce que j'adore choisir des cadeaux et faire une soirée pyjama.
Qu'est-ce que tu fais pour fêter **le Nouvel An**?	Le matin j'ai des cadeaux et l'après-midi je mange avec ma famille. J'adore ça.
Qu'est que tu manges à Noël?	D'habitude on mange de la dinde avec des légumes. Comme dessert on mange du gâteau.
Où est que tu vas aller pendant les vacances de Noël?	Je vais aller à Paris avec mes amis.
Qu'est-ce que tu vas faire?	On va visiter les monuments. Ce sera chouette!
Qu'est-ce que tu vas manger?	Je vais manger du poulet rôti et une crêpe au chocolat.
Est-ce que tu vas visiter la Tour Eiffel?	Non, je vais rendre visite à mes grands-parents et on va visiter la Notre Dame.
Quels sont tes résolutions pour l'année prochaine?	En ce moment je **mange du chocolat** mais l'année prochaine je vais **manger des fruits.**

Career Focus - Where could this take you?

I am a market trader. I work all over Europe at Christmas to sell traditional gifts. It helps me that I can speak another language, because I can communicate with my customers.

Challenge Activities

1) Research a festival of your choice. How is it celebrated in France? How is it different? How is it similar?
2) Prepare some crêpes for your family like French people do for La Chandeleur. If you can't make them, why not design a menu made of pancakes. A savoury and a sweet course.
3) How is La fête des Rois celebrated in France? Make a presentation to send to your teacher. They may even show it to the class.
4) Complete the activities on www.sentencebuilders.com
5) Find out about the Alsace region in France. What languages are spoken? What country is it next to?

Topic Links

This topic links to:

- Food and drink.
- Birthdays and special occasions.
- Future plans

Additional Resources

To further practise and develop your knowledge see:

- Sentencebuilders.com
- Active learn.
- Watch this short video here

Year 8 – Meine Familie

The aims of the sequence of learning are to ensure that all students can:

- Say how many brothers and sisters they have.
- Describe their pets.
- Say what they like and dislike using cognates
- Describe their personality.
- Pronounce key phonics sounds
- Conjugate key verbs in 1st/2nd/3rd person singular, e.g. haben and sein.
- Understand a traditional celebration in Germany – Weihnachten.

Keyword	Definition
Wie heißt du?	What is your name?
Wie schreibt man das?	How do you spell it?
Wie alt bist du?	How old are you?
Wann hast du Geburtstag?	When is your birthday?
Wo wohnst du?	Where do you live?
Hast du Geschwister?	Do you have any brothers and sisters?
Hast du ein Haustier?	Do you have a pet?
Wie bist du?	What are you like?
Wie siehst du aus?	What do you look like?

Wie?	*How?*
Was?	*What?*
Wo?	*Where?*
Woher?	*Where … from?*
Wer?	*Who?*

Most verbs end in ***-en***, e.g. ***wohnen*** (to live). For the present tense you replace the ***-en*** ending like this:

*ich wohn**e***	I live
*du wohn**st***	you live
*er/sie/es wohn**t***	he/she/it lives

Key Concepts:

Phonics

sch	sh	ű	oo
u	uh	j	y
u	oo	w	v

Hast du ein Haustier? – Ich habe / Ich möchte…..

eine Katze	ein Kaninchen	einen Papagei	eine Maus
einen Hund	einen Fisch	Ein Meerschweinchen	eine Schildkröte
eine Schlange	einen Hamster	eine Spinne	einen Vögel

Hast du Geschwister? – Do you have any brothers or sisters?

Ich habe einen Bruder
Ich habe zwei Brűder

Ich habe eineSchwester
Ich habe zwei Schwestern

✗ Ich bin Einzelkind / Ich habe keine Geschwister ✗

Ich habe…… Augen

blau(e)	grűn (e)	gelb (e) blonde
rot (e)	schwarz(e)	grau (e)
rosa	weiß(e)	braun(e)

…….

sein (to be) is an important verb, which you need to learn.

*ich **bin***	I am
*du **bist***	you are
*er/sie/es **ist***	he/she/it is

haben (to have) is another important verb, which you need to learn.

*ich **habe***	I have
*du **hast***	you have
*er/sie/es **hat***	he/she/it has

Numbers 20-100

zwanzig	*twenty*
dreißig	*thirty*
vierzig	*forty*
fünfzig	*fifty*
sechzig	*sixty*
siebzig	*seventy*
achtzig	*eighty*
neunzig	*ninety*
hundert	*hundred*
einundzwanzig	*twenty-one*
zweiundzwanzig	*twenty-two*

Personality – Wie bist du? Ich bin …….

freundlich	friendly	sportlich	sporty
launisch	moody	laut	loud
kreativ	creative	faul	lazy
intelligent	clever	lustig	funny

Year 8 – Meine Familie

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- Say what they like and dislike using cognates
- Describe their personality.
- Pronounce key phonics sounds
- Conjugate key verbs in 1st/2nd/3rd person singular, e.g. haben and sein.
- Understand a traditional celebration in Germany – Weihnachten.

Retrieval Practice

Questions	Answers
Wie heißt du?	Ich heiße **Clara.**
Wie schreibt man das?	**tseh- el-ah-air-ah**
Wie alt bist du?	Ich bin **zwölf** Jahre alt.
Wann hast du Geburtstag?	Mein Geburtstag ist am **neunten November**.
Wo wohnst du?	Ich wohne in **Huddersfield.**
Hast du Geschwister?	Ich habe **einen Bruder** 👱 Ich habe zwei Schwestern 👧👧 Ich bin Einzelkind ❌
Hast du ein Haustier?	Ja, ich habe **ein Kaninchen. Er ist grau.** 🐰 **Er heißt Peter.** Nein, Ich habe **kein Haustier.** ❌
Wie bist du?	Ich bin **kreativ** und **musikalisch**.
Wie siehst du aus?	Ich habe lange braune Haare. Ich habe blaue Augen.

Career Focus - Where could this take you?

I am a charity worker. I work abroad to help animals, that are mistreated or abandoned in many towns and cities. It helps that I can speak a language, because I can communicate with local people, tourists and other charity workers. I find that speaking another language has really helped me to settle into life in a foreign country and helped me to make lots of new friends.

Challenge Activities

1. Make flashcards for the questions and answers.
2. Use Sentence builders to practise describing yourself and other people.
3. Make a fact file about yourself in German. Include lots of information, including your favourite things.
4. Design your ideal zoo. Say what you have in the crazy zoo and then describe each animal. Eg Ich habe eine Katze. Sie ist blau und rosa. Sie heißt Fifi.

Topic Links

This topic links to other German topics such as

- Introducing yourself and family.

This topic also links to :

- Maths
- Geography
- Literacy,

Additional Resources

Languagenut - Use your username and password.
www.sentencebuilders.com

Active Learn - You will be given your username and password by your teacher..

Newsome Academy
Everyone Exceptional Everyday

CVT

Our students will:

- produce creative work, exploring their ideas and recording their experiences
- become proficient in drawing, painting, sculpture and other art, craft and design techniques
- evaluate and analyse creative works using the language of art, craft and design
- know about great artists, craft makers and designers, and understand the historical and
- cultural development of their art forms.

- develop competence to excel in a broad range of physical activities
  are physically active for sustained periods of time
  engage in competitive sports and activities
- lead healthy, active lives.

Year 8 Art Day of the Dead

The aims of the sequence of learning are to ensure that all students are:

- Demonstrating an understanding of the day of the dead festival.
- Applying techniques to develop drawing skills.
- Experimenting with block printing techniques
- Producing a personal response.

Keyword	Definition
Muertos	Spanish for ‘dead’
Dia	Spanish for ‘day’
Festival	a day or period of celebration, typically for religious reasons
Symbol	a thing that represents or stands for something else, especially a material object representing something abstract.
Printmaking	the activity or occupation of making pictures or designs by printing them from specially prepared plates or blocks.
Tone	the relative lightness or darkness of a colour
Colour	an element consisting of hues, of which there are three properties: hue, chroma or intensity, and value
Composition	Arrangement of elements within a work of art
Personal Response	Creating your own piece of artwork in response to a theme/artists/style

Key Concepts

The Day of the Dead (Spanish: Día de Muertos) is a Mexican holiday celebrated throughout Mexico, and by people of Mexican heritage elsewhere. The multi-day holiday involves family and friends gathering to pray for and remember friends and family members who have died, and helping support their spiritual journey. In Mexican culture, death is viewed as a natural part of the human cycle. Mexicans view it not as a day of sadness but as a day of celebration because their loved ones awaken and celebrate with them

It is colourful, bright and cheery but with a theme of skulls and skeletons. The shapes, colours, forms and patterns of the Day of Dead provide us with lots of inspiration to make our textile art.

SCAN ME

Scan the QR Code to take you to the National Geographic websites Top 10 things to know about the Day of the Dead.

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Year 8 Art Day of the Dead

The aims of the sequence of learning are to ensure that all students:

- **Describe the day of the dead festival**
- **Produce and refine new ideas**

Retrieval Practice

Questions	Answers
When is the day of the dead?	A Mexican holiday traditionally celebrated on November 1st and 2nd.
What are calaca and calavera?	These are representations of a human skeleton and skull
What is tone?	Tone refers to how light or dark something is. Tones could refer to black, white and the grey tones between. It could refer to how light or dark a colour appears.
What is block colour?	A colour in a single tone, with no variation
What is a block print?	This is the process of carving patterns, shapes and designs into a 'block'. The 'block' could be made of wood, lino, metal or polystyrene
What is composition?	This is the arrangement of elements within a work of art

Career Focus - Where could this take you?

I am a **graphic novelist** so I get to spend my day creating new ideas and stories before bringing them to life with my illustrations and storyboards.

Challenge Activities

Scan the QR Code and watch the video about how the film Coco has honoured the day of the dead celebration. Once you have watched the video make a list of the main aspects of the day of the dead celebration and put into your own words how Coco has portrayed the celebration.

SCAN ME

Topic Links

This topic links to:

- MFL – cultural holidays and celebrations
- RE – cultural holidays and celebrations

Additional Resources

To further practise and develop you knowledge see:

the QR Code to take you to a video from The British Museum about the Day of the Dead celebration.

SCAN ME

Unit 8.1: Top Trumps

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The aims of the sequence of learning are to ensure that all students:

- Demonstrate knowledge of planning techniques by describing the difference between a 'theme' and an 'audience'
- Demonstrate knowledge of internet safety by describing how to find appropriate and reliable data from trustworthy online sources
- Demonstrate knowledge of digital design using MS Publisher by using a range of tools and features to create a set of customised Top Trump cards
- Apply knowledge from this unit to accurately describe some keywords

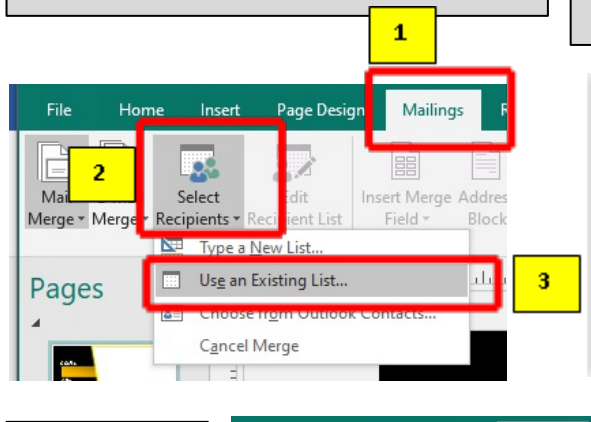
Keyword	Definition
Audience	The primary group of people that something is aimed at appealing to
Theme	The particular subject or idea on which the style of something is based on
Statistics	The collection, organisation, analysis, interpretation, and presentation of data
Reliable Source	Sources have links to verifiable and current evidence, usually written by an expert in the subject
Professional Design	A design that aims to replicate the design of something that has been created by a professional
Template	Pre-made designs and documents that have the editing flexibility to be customised
Mail Merge	A feature which lets you combine a document with a data file to create a new personalised document for each record on the data file
Transparent Image	An image that has no background colour

Key Concepts

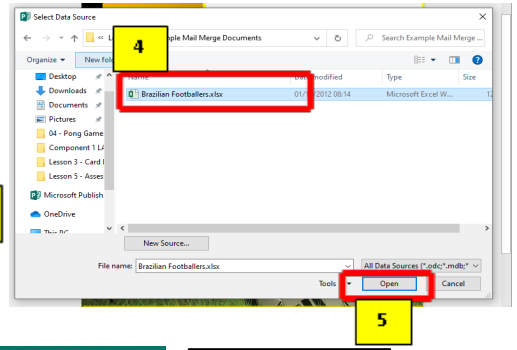
Students will be expected to create a customised set of Top Trumps cards by following design processes inspired by industry experts.

The tasks include collating data from several reliable sources, designing the card layout and using the Mail Merge feature to create each individual card

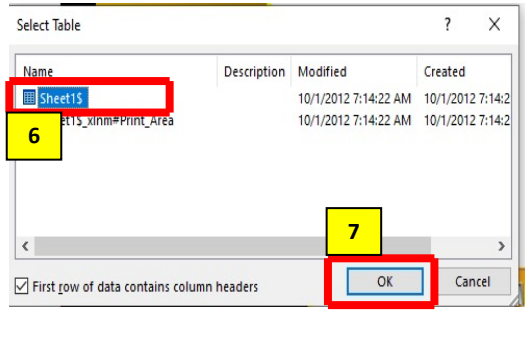
1. Click the 'Mailings' Tab menu > Select Recipients > Use an Existing List



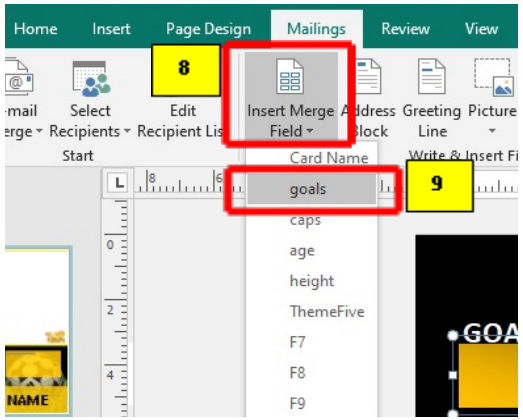
2. Find your Stats Spreadsheet document and then press the 'Open' button



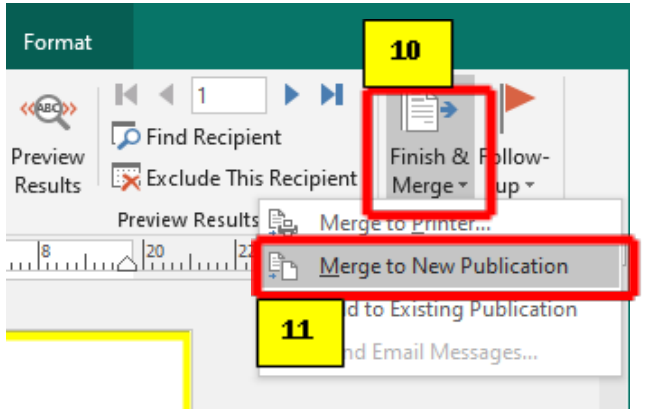
3. Click on the first table option and then press the 'OK' button



4.Click on the 'Insert Merged Field' button and select the stat name which you want to put inside the Stat 1 box (e.g. Goals stat box)



5. Now click on the 'Finish & Merge' button (on the 'Mailings' tab) and then select 'Merge to New Publication' option



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Unit 8.1: Top Trumps

The aims of the sequence of learning are to ensure that all students:

- Demonstrate knowledge of planning techniques by describing the difference between a 'theme' and an 'audience'
- Demonstrate knowledge of internet safety by describing how to find appropriate and reliable data from trustworthy online sources
- Demonstrate knowledge of digital design using MS Publisher by using a range of tools and features to create a set of customised Top Trump cards
- Apply knowledge from this unit to accurately describe some keywords

Retrieval Practice

Questions	Answers
What is the difference between the terms 'Audience' and 'Theme'?	Audience is the primary group of people that something is aimed at appealing to e.g. teenagers, 18 to 39 year olds, fans of Manchester United etc… Theme is the particular subject or idea on which the style of something is based on e.g. Sports, Movies, Netflix etc…
Is Wikipedia a reliable source of information on the internet? Explain why.	No, it can not be classed as a reliable source of information. The creators admit that not every entry is accurate and that it might not be the best source of material for research tasks. However, if used correctly, it can be used as a starting point for any research based tasks.
Why is it important to collate and use number-based stats on the Top Trump cards?	It is important that the statistics that you use is suitable for Top Trumps cards. The stats must be number-based otherwise you would not be able to play the game of Top Trumps. These numbers will be needed to compare a stat from your card with the stat from another card. Words can not be compared to determine a winner.
Why is it important to create professional looking Top Trump card template designs?	The first impression counts for a lot. It is easier than ever to compare products with each other. If your design does not look eye catching and professional then people may choose not to purchase the product. The time and money spent on developing and promoting the product would have been a complete waste of time, resources and money. It will have a negative impact on the reputation of the company going forward.
What is a 'Mail Merge'? Give an example of how a mail merge can be used in a school.	A Mail Merge is a feature which lets you combine a document with a data file. A new personalised document is created for each record on the data file e.g. school can use the students data file to send personalised letters addressed to each parent / carer / guardian.

Career Focus - Where could this take you?

I am a **Graphic designer** and work in a team that is responsible for creating visuals for all kinds of projects, from websites to advertisements. My job involves creating designs that communicate information in a way that inspires and informs consumers.

Challenge Activities

1. Describe the steps that you would take to check that the information found on Wikipedia is reliable.
2. Create two more completely different Top Trump card template designs. You need to analyse each template design and then decide which template you would like to use to as the final design. Explain the reasons for the choice of template design.
3. Create a tutorial document to explain all of steps involved in creating a Mail Merge in MS Publisher. This must be suitable for a novice user to easily follow.

Topic Links

This topic links to:

Computing Curriculum:

- Undertake creative projects that involve combining multiple applications to achieve challenging goals
- Create and re-purpose digital artefacts for a given audience, with attention to trustworthiness and usability

- Art and Design (using artist skills to create eye-catching visuals)

Additional Resources

To further practise and develop your knowledge see:

- Top Trumps game rules and examples www.toptrumps.com/kids
- YouTube MS Excel Tutorial: youtu.be/k1VUZEVuDJ8
- YouTube MS Publisher Tutorial: youtu.be/StzyBxnhHmE

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Year 8 Food Tech

The aims of the sequence of learning are to ensure that all students:

Apply knowledge of Health and Safety in relation to the Food Standards Agency and Legislation

- **Demonstrate knowledge of food provenance**
- **Be able to discuss confidently a range of manufacturing processes**

Keyword	Definition
Food origin	Where the food originated in the world
Food provenance	Whether the food was grown, caught or reared
Transportation	How food is transported from one place to another
Food processing	Changing food in some way e.g washing, chopping, pasteurising, freezing, fermenting, packaging
Food manufacturing	Food manufacturing refers to transforming raw ingredients into edible products such as using wheat, oat, and sugar to make cereals, desserts, and pet food.
Farming	Farming is the activity of growing crops or keeping animals on a farm.
Calcium	Calcium is a mineral your body needs to build and maintain strong bones and to carry out many important functions.
Carbohydrate	Carbohydrates provide energy for the body. The body breaks carbohydrates down into glucose, which is the primary energy source for the brain and muscles.
Protein	Protein is one of the three nutrients found in food that the body needs in large amounts. It is essential for the maintenance and building of body tissues and muscle.
Fibre	Fibre is a type of carbohydrate that the body cannot break down and so it passes through our gut into our large intestine (or colon). It is found naturally in plant foods like wholegrains, beans, nuts, fruit and vegetables and is sometimes added to foods or drinks. Fibre helps to keep our digestive system healthy and helps to prevent constipation.
Fat	The body uses fat as a fuel source, and fat is the major storage form of energy in the body. Fat also has many other important functions in the body, and a moderate amount is needed in the diet for good health. Too much fat or too much of the wrong type of fat can be unhealthy.
Cross-contamination	Cross-contamination is the physical movement or transfer of harmful bacteria from one person, object or place to another.
Nutrient	a substance that provides nourishment essential for the maintenance of life and for growth.
Healthy	In a good physical or mental condition; in good health.

Key Concepts

The **Food Standards Agency (FSA)** is responsible for food safety and food hygiene in England, Wales and Northern Ireland. It works with local authorities to enforce food safety regulations and its staff work in meat plants to check the standards are being met.

Food Standards Act 1999

The Act was introduced in the House of Commons in 1999.

It sets out our main goal to protect public health in relation to food. It gives us the power to act in the consumer's interest at any stage in the food production and supply chain.

Food Safety Act 1990

The main responsibilities for all food businesses covered by the Act are to ensure that:

- businesses do not include anything in food, remove anything from food or treat food in any way which means it would be damaging to the health of people eating it
- the food businesses serve or sell is of the nature, substance or quality which consumers would expect
- the food is labelled, advertised and presented in a way that is not false or misleading

The scheme gives businesses a rating from 5 to 0 which is displayed at their premises and online so you can make more informed choices about where to buy and eat food.

5 – hygiene standards are very good
4 – hygiene standards are good
3 – hygiene standards are generally satisfactory
2 – some improvement is necessary
1 – major improvement is necessary
0 – urgent improvement is required

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Year 8 Food Tech

The aims of the sequence of learning are to ensure that all students:

- Use safe and hygienic practices in a working kitchen environment
- Demonstrate sound preparation skills of both equipment and ingredients
- Safely use a range of cooking techniques, appropriate to the task

Flapjack

Equipment

- Grease proof paper
- Large mixing bowl
- Wooden spoon
- Weighting scales

** Container with a lid **

- Sauce pan
- Lined tray
- Palette knife
- Rounded knife

Ingredients

- 2 tbsp. golden syrup/treacle
- 150 grams Butter
- 100 grams Sugar
- 350 grams Oats

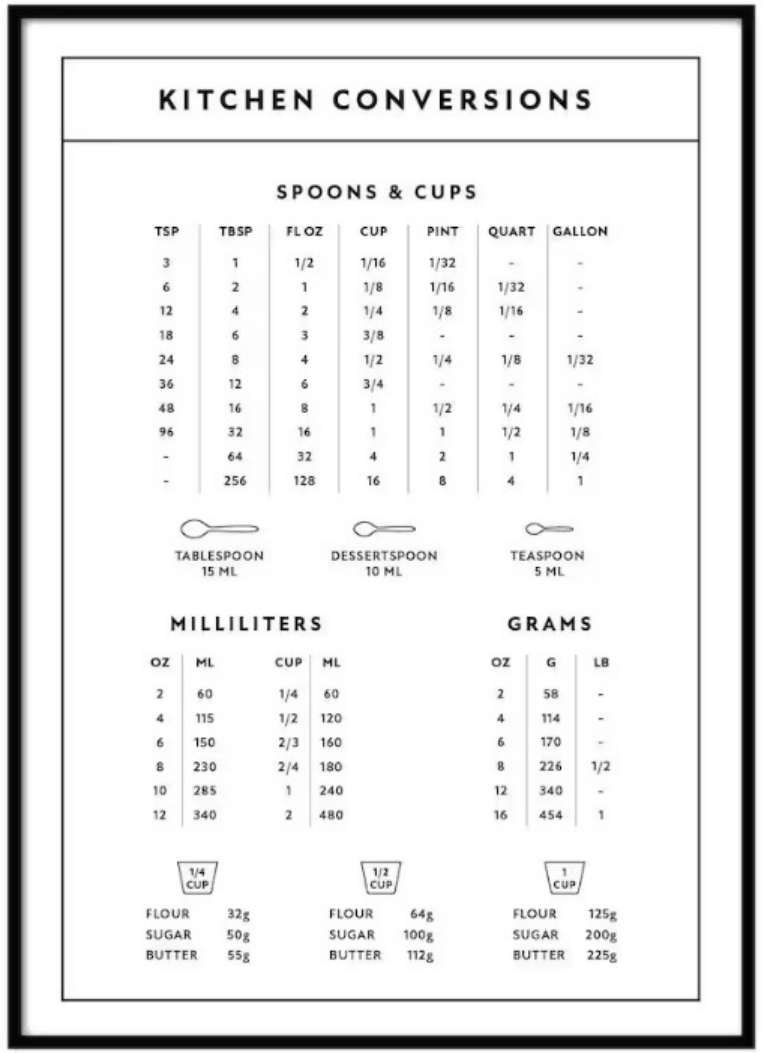
*** container with a lid ***

Method:

1. Melt the treacle, butter and sugar in the pan but do not boil.
2. Take the mixture off the heat and add the oats.
3. Add a selection of the dried fruit and seeds.
4. Stir until all the oats are covered.
5. Press the oat mixture into the tin with a knife.
6. Bake in the oven 190 degrees for 15 minutes.
7. After 15 minutes use quality control to see if the flapjack is cooked. If not bake for a further 5 minutes.
8. Mark the flapjack into squares and loosen the sides while the tin is still hot.
9. Do not remove the flapjack from the tin until it is completely cold or it will crumble.

Work in pairs: when sharing the sauce pan.

Skills:	Meaning
1.	**General Practical Skills:** Weighing ingredients, measuring, preparing ingredients and equipment, correct cooking times, testing for readiness and sensory testing.
4.	**Use of the cooker (and Skills 6: Cooking Methods):** Using the cooker including: the hob, grill and oven.
6.	**Cooking Methods:** Using the cooker including: the hob, grill and oven.
7.	**Preparing, combine and shape:** Techniques to prepare, cook and combine different ingredients.



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Cheese and Onion Pasty (Triangles)

Method:

1. Set oven at Gas 4 / 180ºC.

2. **Prepare the cheese and onion filling:** grate the cheese and slice the onion;

3. Mix the cheese and onion together.

4. **Make up the shortcrust pastry:**

• sift the flour into the bowl and rub the butter or margarine into the flour, using your fingertips, until it resembles breadcrumbs;

• gradually add the cold water and start to mix together. The mix to form a firm, smooth dough.

5. Roll out the pastry into a square, on a floured surface.

6. Cut the square into quarters using the palette knife.

7. Spoon some cheese filling in the middle of the square.

8. Next, brush the edges of the pastry with beaten egg. Fold over each pasty and pinch them together all the way along.

9. Brush each pasty with beaten egg and transfer them onto the baking tray.

10. Bake for 20 minutes, until golden brown.

Top tip:

- Vary the types of spices and herbs used for different flavour sensations!
- Try adding slices of chicken and beef, perhaps with mushrooms and sweetcorn.
- Make up the pastry using wholemeal flour – remember to use a little more water.

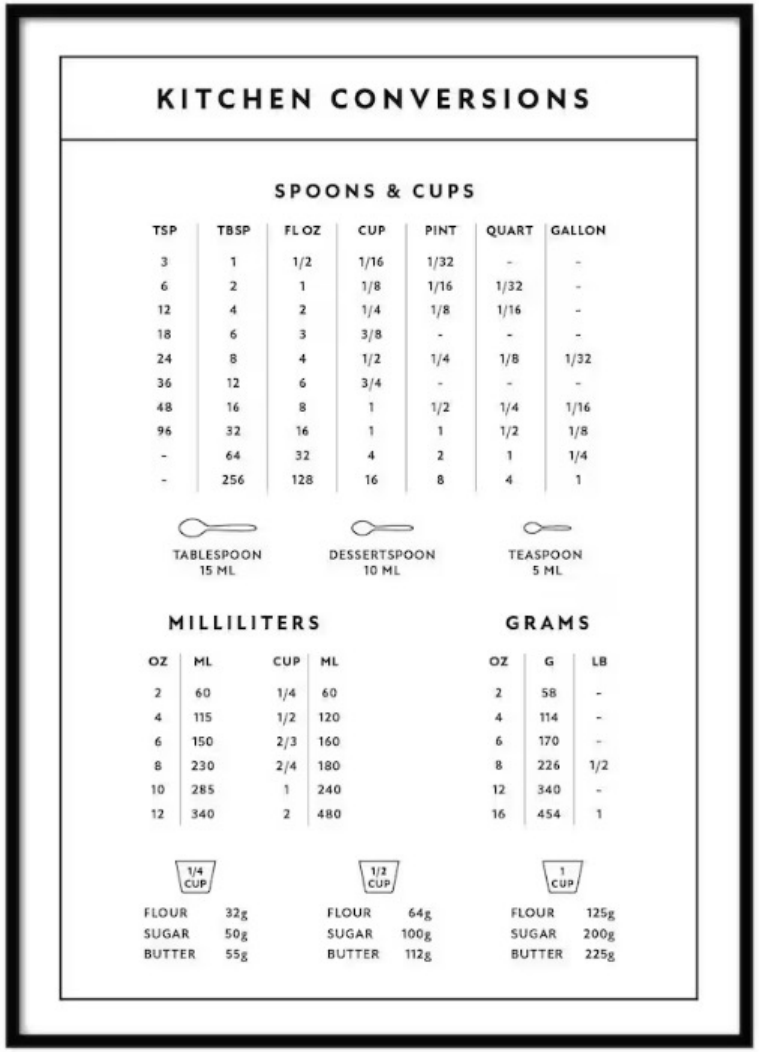
Ingredients:	
• Weighing scales	• Pastry brush
• Chopping board	• Baking tray
• Grater	• Sieve
• Knife	• Platte knife
• Mixing bowl	• Fork
• Rolling pin	• Spoon
• 2 small bowls	

Ingredients:

- 50g Cheddar cheese
- ½ small onion
- 100g plain flour
- 50g butter or margarine
- 2 – 3 x 15ml spoons cold water
- 1 egg

*** **Container with a lid** ***

Skills:	Meaning
1.	**General Practical Skills:** Weighing ingredients, measuring, preparing ingredients and equipment, correct cooking times, testing for readiness and sensory testing.
2.	**Knife skills:** Can use equipment safely. Slicing, dicing and chopping
3.	**Preparing fruit and vegetables:** I can prepare fruit and vegetables in many different ways: Slicing, peeling, grating, dicing and chopping.
4.	**Use of the cooker (and Skills 6: Cooking Methods):** Using the cooker including: the hob, grill and oven.
6.	**Cooking Methods:** Using the cooker including: the hob, grill and oven.
7.	**Preparing, combine and shape:** Techniques to prepare, cook and combine different ingredients.
11.	**Raising Agents:** Use of raising agents including: eggs, chemical, steam and biological.



Year 8 Rhythm and Syncopation

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The aims of the sequence of learning are to ensure that all students:

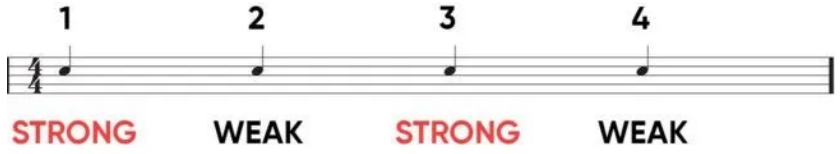
- **Demonstrate an understanding of basic western notation used in syncopated rhythms (quavers, dotted**
- **Perform syncopated rhythms on both percussion instruments and syncopated melodies on pitched instruments.**
- **Understand the importance of syncopation in various rhythms from around the world.**
- **Demonstrate the ability to read and write simple rhythms using basic music notation.**

Keyword	Definition
Rhythm	A strong, regular repeated pattern of movement or sound
Dynamics	The volume of a note or sound
Duration	The length of a note or sound
Pulse	A steady beat like a ticking clock or your heartbeat. It can be measured in time by counting the number of beats per minute (BPM).
Tempo	The speed of the pulse.
Ostinato	A short, repeating pattern.
Strict Tempo	All the notes are played only on the main beats
Syncopation	A rhythm where emphasis is placed on beats in between and around the main beats
Clave	A very popular, syncopated rhythm from south America.
Dem Bow	A very popular, syncopated rhythm from Jamaica

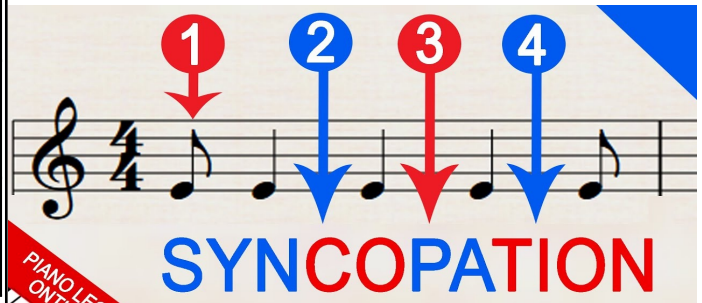
Key Concepts

Symbol	Name	Number per bar (4/4)	Rest
1	Semibreve	1 per bar	
2	Minim	2 per bar	
4	Crotchet	4 per bar	
8	Quaver	8 per bar	
16	Semiquavers	16 per bar	

Strict Tempo Rhythm



Syncopated Rhythm



Time Signatures

4

The top number tells us *how many beats* are in a bar of music.

4

The bottom number tells us the type of beat (see the chart to the left).

Time signatures are not fractions.

Artist Name	Song Name
Survivor	Eye of the Tiger
Bob Marley and the Wailers	Three Little Birds
Luis Fonte ft. Daddy Yankee	Despacito
George	Faith

Year 8 Rhythm and Syncopation

The aims of the sequence of learning are to ensure that all students:

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- **Perform syncopated rhythms on both percussion instruments and syncopated melodies on pitched instruments.**
- **Understand the importance of syncopation in various rhythms from around the world.**
- **Demonstrate the ability to read and write simple rhythms using basic music notation.**

Retrieval Practice

Questions	Answers
What does dynamics mean in music?	The volume of a note or sound
What does duration mean in music?	The length of a note or sound
What does the bottom number of a time signature tell us?	The type of beat in a bar
How many crotchets fit into a bar of 4/4?	Four. The bottom number tells us the type of note.
What are the four most common types of syncopation? (See 'Great article on syncopation' QR code to the right.	1.Suspension 2.Missed beat 3.Even Note 4. Off Beat
How many crotchets would there be in a bar of 3/4?	Three. The top number tells us how many beats are in the bar.
What does tempo mean in music?	The speed of the music

Career Focus - Where could this take you?

I'm a drummer in a reggae band. Reggae music has lots of syncopated, off-beat rhythms. As the drummer, I keep the rhythm steady for the rest of the band. It is very important that I am an expert when it comes to understanding syncopation and playing syncopated drum beats. My band regularly plays live shows in bars and at weddings. We have just finished touring the UK and are currently preparing to tour Europe next year!

Challenge Activities

- Listen out for any syncopated rhythms on T.V., Spotify, internet ads etc. Count along to the music (one, two, three, four) and listen for whether or not the loudest beats are in time with the numbers or not. Make a list of as many examples of syncopated songs as you can.
- Here's a rhythm quiz to really test your knowledge: https://www.macprovideo.com/course/musictheory103-rhythm/quiz

Topic Links

This topic links to:
Drama – rehearsing and performing in groups. Good time keeping and sense of rhythm.
Maths – Counting rhythms and dividing bars and beats
Geography – Cultural relevance of world music

Additional Resources

Great article on syncopation:

How to read notation

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Year 8 Invasion Games

The aims of the sequence of learning are to ensure that all students:
- Can identify at least four core skills required for invasion games
- Demonstrate basic core skills such as a chest pass
- Demonstrate basic core skills in a game situation
- Lead a small group of peers in a warmup

Keyword	Definition
Pass	keep possession of the ball by maneuvering it between different players with the objective of advancing it up the playing field
Catch	to receive the ball from another player and keep possession
Defend	to resist the attack of the opposing team
Attack	the action of attacking or engaging an opposing team with the objective of scoring points or goals
Tackle	trying to take the ball from an opponent
Intercept	Obstruct someone/something from getting to their desired position/destination
Tactics	A strategy planned and implemented to achieve a set goal

Key Concepts

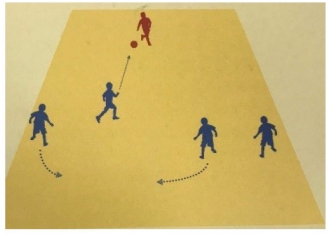
Defending

Pressure

Closest defender moves towards the attacker with the ball - aim to slow the attacker down or guide them into a certain direction

Cover

When a defender puts pressure on the attacker — the other defenders cover the space the defender left.



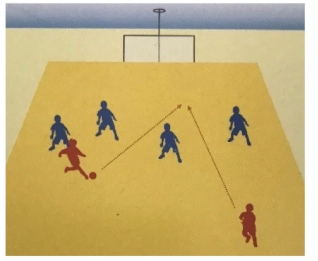
Attacking

Width

To create space in front of the goal send the ball wide to move the defenders out of position— giving an easy chance to shoot at goal.

Penetration (forward move)

A quick pass or dribble through the defensive line in order for the attacking team to get closer to their opponents goal



You should already know:
- The aim of invasion games
- The name of at least 3 invasion games
- The basic principles of invasion games
- The core skills required to be successful in invasion games

You will be assessed on:
- Understanding
- Technique in isolation
- Technique in game
- Leadership
- Attitude to learning

Athletes to research further:

Raheem Sterling

Eleanor Cardwell

Courtney Lawes

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Year 8 Invasion Games

The aims of the sequence of learning are to ensure that all students:

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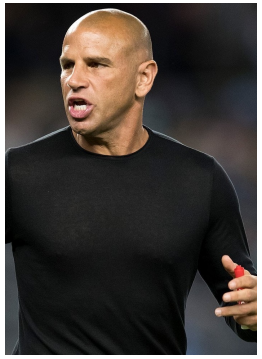
- Demonstrate basic core skills such as a chest pass
- Demonstrate basic core skills in a game situation
- Lead a small group of peers in a warmup

Retrieval Practice

Questions	Answers
What are the core Netball skills?	Chest pass, Bounce pass, Shoulder pass, Overhead pass, Two-footed landing, **One-footed landing**, Shooting, Pivot, **Man Marking** and **Dodging**
What are the Netball positions?	Goalkeeper, Goal defence, Wing defence, Centre, Wing attack, Goal attack and Goal shooter
What are the core football skills?	Dribbling close to feet, Dribbling changing direction **with speed**, Passing side foot (**close distance**), Passing **on laces** (**long distance**), Defending (**man to man**) and Attacking (**two versus one**)
What are the core Rugby skills?	Target with hands out, Push pass, **Pop pass**, Catch and **pass and move**, Protecting, **Holding**, **Contact**, Side-stepping, Attacking (**line speed**), Attacking (**creating an overlap**), Defending (**line and movement**)

Career Focus - Where could this take you?



A sport science qualification helps you become a sports psychologist by giving you a deeper understanding of how the mind and body work together in sports. You learn about how thoughts and emotions can affect an athlete's performance. This knowledge helps you guide athletes to stay confident, focused, and motivated, which is important for their success.

Challenge Activities

1. Answer the following question: Why is it important that we understand the playing area for an invasion game?

2. Create a mind map of the differences between netball, football and rugby.

Topic Links

This topic links to:

- Science – movement of the body and muscles; the physics of sports
- English – understanding and defining key terminology
- Mathematics – problem solving, recording figures and analysing performance
- Voice 21 – coaching peers

Additional Resources

To further practise and develop your knowledge see:

- https://seeliger.carsoncityschools.com/common/pages/DisplayFile.aspx?itemId=8364188
- https://www.youtube.com/watch?v=ABC5iPye7JY
- https://www.youtube.com/watch?v=yW7JH6xkV7w

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Year 8 Textiles

The aims of the sequence of learning are to ensure that all students:

- Demonstrate safe use of tools and equipment.
- Explain a range of Regenerated fibre properties
- Rank Fibers in order of environmental impact.
- Annotated a range of design ideas which include moral and cultural issues.
- Demonstrate an understanding of smart materials.

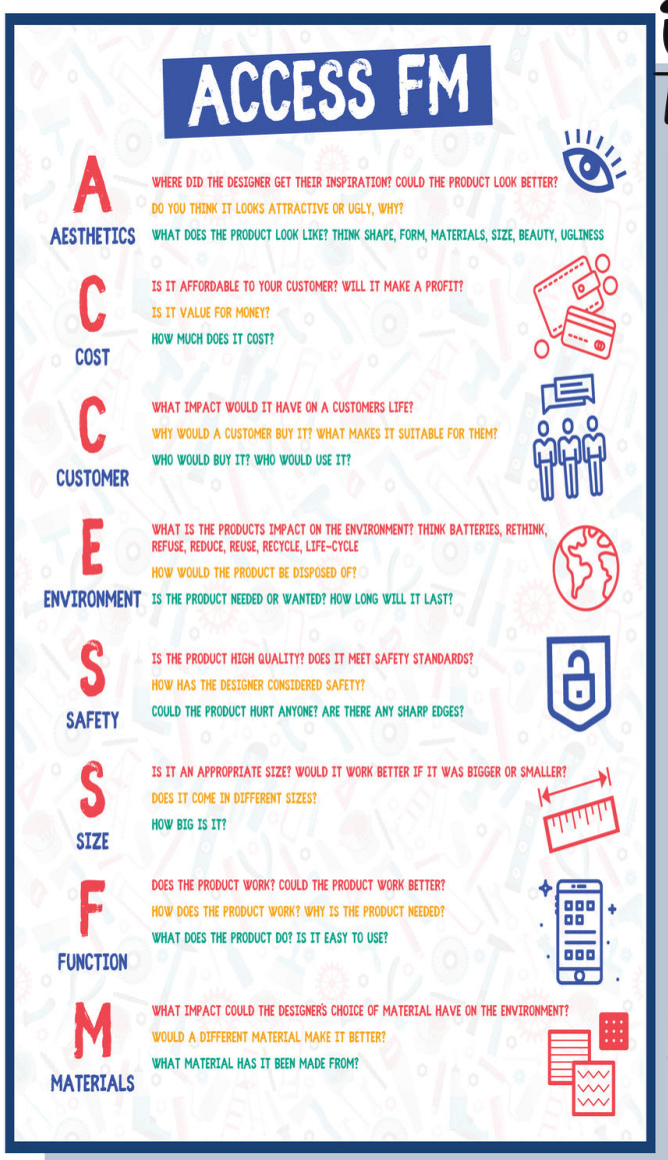
Keyword	Definition
Conductive	Having the property of conducting something (especially heat or electricity):
Fabric	Cloth or other material produced by weaving or knitting fibres:
Synthetic	Made by chemical synthesis, especially to imitate a natural product:
Fibres	A thread or filament from which a vegetable tissue, mineral substance, or textile
Electric	Worked by, charged with, or producing electricity:
Textiles	A type of cloth or woven/ knitted fabric:
Aesthetics	A set of principles concerned with the nature and appreciation of beauty
Solder	Solder is a fusible metal alloy used to create a permanent bond between metal
Design	A plan or drawing produced to show the look and function or workings of a building, garment, or other object before it is built or made
Diode	Electronic component that conducts current primarily in one direction
Positive	Electric charge of a positive point charge
Negative	Electric field of a negative point charge
Laser	A laser is a device that emits light through a process of optical amplification
Equipment	Equipment most commonly refers to a set of tools or other objects
Battery	A device that provides electrical power

Key Concepts

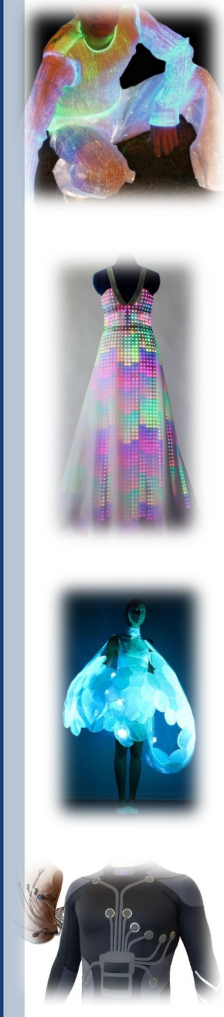
Types of Fibres

Regenerated Fibres

ACCESS FM



Smart Textiles



Year 8 E-Textiles Muggler Project

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- Explain a range of Regenerated fibre properties
- Rank Fibers in order of environmental impact.
- Annotated a range of design ideas which include moral and cultural issues.
- Demonstrate an understanding of smart materials.

Retrieval Practice

Question	A1	A2	A3	A4	A5
A. What is a regenerated fibre?	Made from a plant	Made in a factory	Coal & oil	A fibre made from cellulose (wood pulp)	A fibre made from Animals
B. Which fibres are Regenerated? (select more than 1)	Wool	Lyocell	Acetate	Cotton	Polyester
C. What is a design Specification?	A list of design solutions	A list of costings	A list of design issues	A list of important points	A detailed list of what the product must be/
D. Which fibres are Synthetic? (select more than 1)	Polyester	Nylon	Cotton	Bamboo	Viscose
E. What is a light emitting Diode?	A type of disco ball	A Type of switch	A type of resistor	LED Light	A type of battery
F. What advantages are they in using a laser cutter? (select more than 1)	Fast	Accurate	Less material wastage	Cuts multi materials (except metal)	Cuts complex shapes and fine detail

Questions you got wrong	Quick Corrections (bridge learning gaps & misconceptions)

Career Focus - Where could this take you?

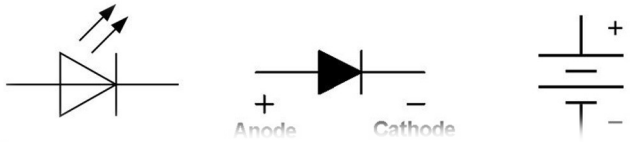
A Lab Technician performs tests and analyses in a laboratory. Lab technicians work in a variety of different fields such as medicine, textiles and Engineering.

Huddersfield University offer an MA degree in Textile Technology, and you will need an Honours degree (2:2 or above) in a relevant subject or an equivalent professional qualification.

Salaries usually range from£18,000 - £38,000

Challenge Activities

Can you Identify these E-Textile Symbols and Explain when they do?



Topic Links

This topic links to:

- Science- How electronics can be used within textiles and the development of Smart Fibres
- English- Subject specific Vocabulary knowledge, understanding and spelling.

Additional Resources

To further practise and develop your knowledge see:

Newsome Academy
Everyone Exceptional Everyday

Usernames and Passwords
