



Topic Title: Alchemy Island		
English	Maths	
Reading – 'The Highwayman' by Alfred Noyes	Ratio and Proportion 1) Add or multiply?	
In the upcoming term, the focus of our Reading lessons will revolve around the poem 'The Highwayman' by Alfred Noyes. Through our Whole Class Guided Reading sessions,	 determine whether a problem requires addition or multiplication to solve, especially in the context of combining or comparing ratios. 	
we will delve into various aspects of the text to enhance our students' literacy skills. Whole Class Guided Reading Schedule:	 2) Using Ratio Language confidently use and understand terms like "for every", "for each", "out of", and "compared to" to describe a ratio relationship between two or multiple quantities. 	
Lesson 1 (Vocabulary / General Knowledge): This session will concentrate on expanding the students' vocabulary and reinforcing their understanding of key concepts within the text.	 3) Introducing the Ratio Symbol understand and correctly use the colon (:) to denote a ratio, interpreting and writing ratios in this form from a range of contexts (e.g., 3:2) 	
Lesson 2 (Just Read): Students will engage in independent reading of the assigned passages, fostering a love for literature and encouraging personal interpretation.	 4) Ratio and Fractions convert ratios to fractions and vice versa, and recognise that ratios 	
Lesson 3 (Close Read): Through a detailed analysis of select passages, students will develop a deeper comprehension of the text's themes and characters.	describe parts of a whole when the total amount is divided into proportionate parts.	
Lesson 4 (Comprehension): This session will focus on honing the students' ability to comprehend and articulate the events and messages conveyed in the novel.	 5) Scale Drawing understand and construct simple scale drawings, employing their knowledge of ratio to interpret scales and create accurate representations. 	
Lesson 5 (Library Visit): To nurture a love of reading beyond the classroom, students will have the opportunity to explore the school library and choose books of personal interest.	 6) Use Scale Factors scale factors to similar shapes in scale drawings, understanding how dimensions change proportionally. 	
By following this structured reading programme, we aim to cultivate a generation of enthusiastic and proficient readers.	 7) Similar Shapes identify and describe similar shapes, recognising how scale factors affect size and proportion while maintaining shape integrity. 	





Writing

Character and dialogue

Building on Y3/Y4 work: - Through wider reading explore characterisation through genre and begin to build a store of characters with children to reinforce confidence when moving between genres in writing. -

What kind of characters might you find in a typical sci fi story? Alien, robot, space captain...etc –

Explore how a character's personality and behaviour can impact on the plot. – e.g. a moral flaw or a deep seated fear will mean that when you put your character in that situation you know how he/she will react –

Use emotion and relationship graphs to track character development and consistency throughout stories. –

Explore use of contrasting characters to develop conflict in narrative. -

Two siblings – one shy and withdrawn and the other adventurous find themselves at a crossroads in the narrative - who prevails? At what cost? –

Develop the use of internal voice and rhetorical questions to enhance character description. - e.g Sarah stopped in her tracks. Did I really see a shadow she thought to

herself? What on earth was it? -

Explore using a different viewpoint and how it affects the characterisation e.g if using the first person you may have more empathy and insight into a characters thoughts and feelings. –

Consider the quality of dialogue by limiting the use of adverbs. - If your dialogue is good it tells the reader what they need to know without the adverb e.g: "Come inside, it's nearly dark," shouted his mum angrily. / "How many times have I told you? Enough is enough! Come inside this VERY minute," shouted his mum. -

Use a range of strategies to develop sophistication in controlling dialogue. - NB Children are often tempted to write a string of dialogue. Despite accurate punctuation and use of new speaker / new line, this can result in poor writing.

Use a range of techniques to break up speech when writing: - add in subordination, extra details of description and action - show how the other character reacts to the dialogue - In filmic style, state what is going on in the background e.g. Stop right there!"

8) Ratio Problems

 solving complex problems involving comparison, scaling, or sharing quantities in direct and inverse proportion using their knowledge of ratios.

9) Proportion Problems

 solve problems involving proportional reasoning across a range of contexts, including speed, density, and concentration using efficient methods.

10) Recipes

• apply their understanding of ratio and proportion to adjust ingredients in recipes, scaling quantities up or down according to the number of servings or portion sizes.

Algebra

1. 1-Step Function Machines

• input a number into a one-step function machine, applying a single mathematical operation (such as adding, subtracting, multiplying, or dividing) and correctly identify the output.

2. 2-Step Function Machines

• manage inputting a number into a two-step function machine, where they need to apply two distinct operations sequentially and ascertain the final output.

3. Form Expressions

• forming algebraic expressions from given situations or word problems, including those that involve the use of simple formulas.

4. Substitution

• substitute numerical values into simple algebraic expressions and compute their value, demonstrating an understanding of order of operations where applicable.

5. Formulae

• interpret and use simple formulae from mathematics and across the curriculum in context. This includes understanding formulas used in geometry, such as area and perimeter, and using them accordingly.

	Courage	Resilience	Honesty	Kindness	
Matthew 7:24 -	"Therefore everyone who h	nears these words of mine and puts	them into practice is lik	e a wise man who built his house on the roc	k





yelled the policeman, trying to get out his whistle..., Stop right there!" yelled the policeman, trying to get out his whistle. Monty looked him right in the eye..., Stop right there!" yelled the policeman, trying to get out his whistle. Monty looked him right in the eye. Passengers milled all around them.

Non-fiction – Writing to persuade

Building on Y5/6 work

The framework for persuasive writing introduced in Y3/4 should be extended in Y5/6, with increasing emphasis on applying persuasive writing across the curriculum with more emphasis on reasoned persuasion to complement discussion writing at this stage.

Opportunities can be exploited in most subjects e.g. through writing advertisements, letters, short articles etc., which plead, complain, support, object, persuade on issues arising from: – History e.g. Plead for better the treatment of children; Make a case for proper sewerage in cities; Write in support of the abolition of slavery; argue for importance of free education for all children, write a publicity brochure for the Great Exhibition etc. – Geography e.g. Convince authorities that we need to keep our rivers clean, Argue that cars should be banned in towns etc. – Science e.g. Argue that smoking should be made illegal; Complain about loss of hedgerow habitats for wild birds. – PHSE and current affairs e.g. Object to a new runway at Heathrow, Persuade other children not to eat junk food etc.

When assembling arguments: - try to support views with reasons or evidence e.g. ...According to the Daily Mail, more than 10,000 homes could face demolition if a proposed third runway is built at Heathrow.

- offer and refute some counter arguments e.g. Now some people might object that...,

- disguise opinions to sound like facts e.g. In fact..., The truth is..., in what some would call the most important moment in..., It has frequently been claimed that... - or (more rationally) make clear that these are your opinions e.g. I think.., in my opinion...,

- try to persuade using persuasive devices (see below),

- try to get the reader interested and on your side - appear reasonable.

- Make your reader think that the rest of the world, agrees with you e.g. Everyone agrees that..., We all know that...

- Use humour as it can get people on your side.

Courage

Resilience

Honesty

Kindness

Matthew 7:24 - "Therefore everyone who hears these words of mine and puts them into practice is like a wise man who built his house on the rock"

6. Form Equations

• form equations from given mathematical situations or word-based problems.

7. Solve 1-Step Equations

• solving one-step equations using addition, subtraction, multiplication, or division, and verify their solutions by substitution.

8. Solve 2-Step Equations

• solve two-step equations, demonstrating their ability to reverse operations in the correct sequence and verify these solutions.

9. Find Pairs of Values

• find pairs of values that satisfy an equation involving two variables. This will often involve substituting values to see if the equation balances.

10. Solve Problems with Two Unknowns

• solve problems that require identifying and working with two unknown variables, forming, and solving equations as necessary to find solutions to these problems.

Decimals

1. Place Value within 1,000,000

• understand and use place values for each digit in numbers up to one million, recognising the place of each digit and being able to read, write, order, and compare these numbers.

2. Place Value - Integers and Decimals

• place values from hundreds of thousands down to thousandths, including a clear understanding of the transition between units (e.g., how and why 0.1 is ten times bigger than 0.01).

3. Round Decimals

• round decimals to the nearest whole number, and to one or two decimal places. They should also justify their answers based on their understanding of the place value.

4. Add and Subtract Decimals





Express possibility, speculation and conditionality, using modal verbs may, might, should, could, would etc. and adverbs perhaps, surely, possibly; phrases like provided that..., so long as... etc. Modal verbs allow us to suppose, imagine, predict warn, suggest, prohibit, oblige etc.

Draw on persuasive devices from Y3/4 plus others e.g.: - extreme adjectives and superlatives e.g. ghastly, appalling, fantastic, the coolest, hideous, fabulous..., - Exaggeration e.g. ...the biggest single change to our town for fifty years..., ...vast numbers

of people..., the last place on earth..., great opportunity...

, - emotive language e.g. No-one would believe that the..., Just imagine the effect that..., ... sprawling across the field...,

- language that claims authority disguising opinions to sound like facts e.g. In fact..., It is said that..., there can be no doubt that..., - Rhetorical questions e.g. Should we all be expected to...? Who would believe that...? - alliteration e.g. ... mean-minded men..., silly and short-sighted..., cheap and cheerful..., funky, friendly and fantastic..., Buy British... - persuasive language e.g. Surely..., It wouldn't be difficult to..., is bound to be..., there can be little doubt...

- Persuasive definitions e.g. No-one but an idiot would..., Every right-thinking person would..., - Pandering and condescension: Naturally it will take time for people to realise..., the ordinary man in the street...,

similes and metaphors e.g. ... like a desert at night..., like shopping in a factory; ...the whole idea is a joke!.... ...the hedgerow is a treasure trove for birds, ...and more cars would be a nightmare..., but parking bikes in narrow spaces is a piece of cake.

- Sarcasm, used sparingly, e.g. the government is likely to support that..., (implying the opposite).

Vary sentence structure, length and type e.g. - complex sentences to combine and compress information: Although a decision is yet to be taken, there is already evidence showing that a new runway could damage the health of local residents, and might could even prove fatal for babies...

- Short sentences for effect e.g. No-one wants this. - Sentence openers: interestingly..., from our point of view..., Indeed there could even be..., - Passive voice to sound more formal: It could be said that..., Additional disturbance would be created by...

- Conditional and hypothetical (if...then) sentences using the subjunctive 'were' If that's the best they can offer..., If it were to be approved...,

• adding and subtracting decimals up to three decimal places, applying a consistent method, and accurately checking their work using inverse operations.

5. Multiply by 10, 100, and 1000

• multiply whole numbers and decimals by 10, 100, and 1000, understanding the impact on place value and demonstrating precision in their answers.

6. Divide by 10, 100, and 1000

• divide whole numbers and decimals by 10, 100, and 1000, explaining how each operation affects the place value and ensuring accurate results.

7. Multiply Decimals by Integers

• multiply decimals (up to three decimal places) by single-digit and multi-digit integers, using formal written methods and checking their answers.

8. Divide Decimals by Integers

• divide decimals (up to three decimal places) by single-digit and multidigit integers, applying a consistent method and verifying their answers.

9. Multiply and Divide Decimals in Context

• apply their skills in multiplying and dividing decimals in real-life contexts, such as measurements and money, demonstrating a clear understanding of when and how these operations are used in everyday life.

CourageResilienceHonestyKindnessMatthew 7:24 - "Therefore everyone who hears these words of mine and puts them into practice is like a wise man who built his house on the rock"





When you have finished, re-read and check to see if you are persuaded.	
RE	PSHE
Humanism	Too much Selfie isn't Healthy
CORE	Kindness: showing love for others
•I can explain what makes someone a humanist.	All the Same, All Different Demonstrating ways we are different and ways
 I know that most humanists believe human beings evolved over time. 	we are the same
•I understand that humanists believe science is the best method to understand the	Listen up! Practising being a good listener
universe.	• You go before me: Thinking of ways the generations before us have
•I know that humanists adapt or change their beliefs when faced with new evidence.	overcome challenges that we
•I know that humanists believe there is no persuasive evidence for the existence of a	benefit from
god or gods.	Growing together Considering ways we can be a good friend and
 I understand that atheism is no belief in a god or gods. 	support one another
•I know that being agnostic means that you are unsure and cannot know whether there	 Social media - good or bad? Discussing the benefits and dangers of
a god or gods exist.	social media
 I can explain that humanists believe that you can be good and live a happy life 	(Reflection and self-evaluation)
without the need for a god or gods.	
 I understand that humanists can experience spiritual moments. 	
 I know that not all humanists would describe an experience as spiritual. 	
 I understand that for a humanist, spiritual moments are not connected to a god or 	
gods or the supernatural.	
•I know that for humanists, nature and the world around them can be a source of	
excitement and beauty.	
 I know that humanists believe science helps reveal and enhance nature's hidden 	
beauty.	
Knowledge building blocks:	
Pupils will know that:	
•Humanism isn't a religion, but a way of thinking and living.	
•Humanists do not believe in God or gods and that there is no persuasive evidence for	
the existence of a god or gods.	





•They believe that this is our only life, so it is very important to live a worthwhile, happy	
life for ourselves and others.	
•Humanists value creativity, discovery of new information, the beauty of the world	
around them, friendship, democracy and equality.	
•Humanists believe science is the best method to understand the universe.	
•Humanists adapt or change their beliefs when faced with new evidence.	
•Atheism is no belief in a god or gods.	
•Agnosticism is the belief that we cannot know whether there a god or gods exist.	
•You can live a good and happy life without the need for a god or gods.	
•Humanists experience spirituality in awe and wonder moments.	
•Nature and the world around them is a source of excitement and beauty.	
•When a humanist describes something as spiritual, they are not connecting it to a god	
or gods or the supernatural.	
Music	PE
Musicianship:	Teacher Led – Netball imoves
-Tempo: 68 bpm (Adagio, a slow pace)	-Understand which pass to use, how to improve accuracy of a pass and
-Time Signature: 4/4 (4 crotchets in every bar)	passing in front of a player.
-Rhythmic patterns using minims, dotted crotchets, crotchets, quavers, semiquavers	-Understand what attacking means, how to create and run into space and how
and their rests	to avoid your defender.
-Key Signature: D major (2 sharps)	-Understand what defending means and how to make successful interceptions.
-Melodic patterns using the notes D E F# G A B C#	-Understand the different positions in a primary school game of netball and
- Improvisation - CDEFGAB	why it is important to rotate positions.
Listen and Respond: Selection of songs (see overview)	-Understand how to shoot in a game of netball.
Singing: Selection of songs (see overview)	-Understand how to work together as a team to improve their game and
Playing: Glockenspiel/Recorder – DEFGAD/ GABCDEF/ Eb F G Ab Bb C Eb (4 levels)	improve communication and teamwork skills.
Improvising and composition: 3 notes – DEF/ 3 notes – C D E / 1,2,3 and 5 – C D E F G	TSC – Invasion – Competitive (Netball and Basketball)
Performing: Perform and share what has taken place in the lesson	Pupils will be taught the importance of having rules within a game and how
	these rules are supposed to facilitate a game's flow. Pupils should be shown
	what it means to 'invade' from a competitive perspective.
	Fundamental Movement Skills addressed:
	Locomotor- Running, Walking, Hopping, Jumping (height & distance)





Body Control-Landing Stretching Balancing Turning Stopping Bending		
Twisting, Swinging		
	Object Control- Control, Throwing, Catching	
French	Computing	
Unit 13 - J'adore le football !	Programming A – Variables in Games	
sports and other leisure time activities	 To define a 'variable' as something that is changeable 	
	 To explain why a variable is used in a program 	
Unit 14 - Il est grand et gros	 To choose how to improve a game by using variables 	
3rd person descriptions	 To design a project that builds on a given example 	
	 To use my design to create a project 	
	To evaluate my project	
Connected Cu	rriculum	
Science		
Substantive Knowledge	Disciplinary Knowledge	
Examining Samples from Alchemy Island	Observation: Carefully observe each sample's physical properties.	
Materials: Understand the materials that may be found on Alchemy Island.	Classification: Use a systematic approach to group samples based on their	
Properties of Materials: Focus on characteristics such as:	characteristics.	
State (solid liquid gas)	Recording Data: Create and maintain a detailed spreadsheet to record your	
	observations and groupings.	
Iransparency (transparent, translucent, opaque)		
Hardness (soft, hard)	Planning and Conducting Investigations: Design a fair test to explore which	
Electrical Conductivity (conductors, insulators)	method is most effective for cleaning a mixture.	
Thermal Conductivity (good conductors, poor conductors)	Making Observations and Collecting Data: Record data systematically using	
Magnetism (magnetic, non-magnetic)	tables or charts. Capture photos at various stages.	
	Evaluating Results: Analyse the outcomes of your cleaning process to	
	determine the success rate and understand why certain methods worked	
Endpoints	better than others.	
1. Describe the properties of different materials found on Alchemy Island.		
2. Classify materials based on their observable characteristics. Ask a Question: How can we decontaminate our sample mixture effe		
3. Accurately record information using a spreadsheet. Make Predictions: Which method will work best for cleaning different kind		
	mixtures?	





4. Reason scientifically about the potential origins of samples from Alchemy	Experiment: Conduct the experiment using filtration, sieving, and evaporation.
Island.	Observe and Record: Use diagrams and photographs to document changes.
	Analyse and Conclude: Discuss the effectiveness of each method.
Separating Mixtures	
Key Concepts	Observations and Data Collection
	As scientists, we must be careful observers. Keep a record of all physical
Mixtures: Combinations of two or more substances that can be physically separated.	changes during the reaction.
Examples include saila and sail mixed with water, or on mixed with water.	Have a notebook ready to jot down observations about colour changes, gas
Filtration: A method used to separate solids from liquids. It involves passing a mixture	production, and temperature changes.
through a filter paper or porous material to trap solid particles.	Design a Simple Experiment
Sieving: A technique used to separate larger particles from smaller ones. This is often	Experiment Idea: Create a 'Fountain of Gold' at your classroom's table.
done using a sieve, which is a device with holes of a specific size.	Materials: Vinegar, baking soda, gold spray paint (to mimic gold), food
Evaporation: The process of turning a liquid into vapour. This method is used to	colouring.
separate a dissolved solid from a liquid.	Procedure: Mix baking soda and vinegar in a container; observe the reaction
Real-World Applications	and discuss changes.
Water purification systems use filtration to remove impurities.	Discussion and Reflection
Cooking uses signing to congrete flour from lumps	After observing the experiment, discuss:
	What did you see?
Salt production involves evaporating seawater to extract salt.	Were there any surprises?
	Was the reaction reversible? Why or why not?
Endpoints	
1. Understand how to use filtration, sieving, and evaporation to clean mixtures.	Hypothesis Formation: Expect students to predict whether the marbles will grow
2. Evaluate and communicate the effectiveness of each method.	in size and weight.
	Observation: Describe changes visually, noting differences in weight and size
Fountain of Oold	over time.
Fountain of Gold	Data Collection: Record weight and size at regular intervals (e.g., every 5
What is a Chemical Reaction?	minutes).
A chemical reaction is a process where substances (reactants) are transformed into	Analysis: Compare initial measurements to final results to assess growth and
new substances (products).	whether changes are reversible.
	Planning an Investigation





Common signs of a chemical reaction include:	Formulate a hypothesis (e.g., "More gold dust will dissolve in warm water than in	
Colour change	cold water").	
Gas production (bubbling or fizzing)	Identify variables:	
Temperature change (exothermic or endothermic reactions)	Independent: Temperature of the water (cold vs warm/hot).	
Formation of a precipitate (solid that forms from a liquid solution)	Dependent: Amount of gold dust that dissolves.	
	Controlled: Volume of water, type of solute, number of spoons.	
Reversible Reactions: These can be undone. An example is the crystallisation of	Conducting the Experiment	
	Prepare two beakers with 50ml of cold water and 50ml of warm/hot water.	
Irreversible Reactions: These create new substances that cannot be returned to their	Add level spoons of gold dust, one at a time, stirring gently.	
original form (e.g., burning wood).	Stop adding when no more gold dust dissolves (saturated solution).	
Endpoints	Create a table to document the number of spoons of gold dust added for both	
 Understand the differences between mixtures and chemical reactions. 	the cold and warm solutions.	
2. Describe and explain the process taking place at the Fountain of Gold, using	BBC Bitesize - Properties of Materials Primary Science - Understanding Materials	
scientific terminology.	Science Buddies - Conductivity and Resistance	
3. Evaluate whether the chemical reaction observed is reversible or irreversible	BBC Bitesize Science	
based on evidence gathered during the exploration.	Primary Science Teaching Trust	
	Royal Society of Chemistry - Learn Chemistry	
Gold Crystals	BBC Bitesize - Chemical Reactions	
Changes in State	Science Museum - What is a Chemical Reaction?	
Developed Changes The process cheen and is a physical change net a chemical and The	 PhET Interactive Simulations - Reactants, Products and Leftovers 	
is a physical change. The process observed is a physical change, not a chemical one. The	BBC Bitesize - Properties of Materials	
Jeny marbles sweit when water is absorbed but remain the same substance.	Science Buddies - Absorbent Polymers	
Reversibility: Discuss the reversibility of changes—how the marbles can return to their	The Royal Society of Chemistry – Experiments	
original size when dehydrated.	BBC Bitesize: Solubility	
Measuring Growth	Primary Science: Understanding Solutions American Chemical Society – Solubility: Classroom Productions	
Weight Measurement: Weight is measured in grams (g). Use digital scales for precision.	American Chemical Society – Solubility, Classroom Resources	
Size Measurement: Use a ruler or measuring tape to gauge the diameter of the marbles.		





Drawing the Line Graph

X-Axis: Time intervals (minutes).

Y-Axis: Weight of the marbles (grams).

Plotting Points: Each recorded weight at the respective time interval.

Connecting Points: Draw a line to show the growth trend over time.

Endpoints

- 1. Effectively measure and record data.
- 2. Analyse and interpret scientific data through graphs.
- 3. Communicate findings about physical changes and the reversibility of these changes using appropriate scientific language.

Into the Lab/Alchemist's Challenge

Soluble: A term used to describe a substance that can dissolve in a solvent. Insoluble: A term used to describe a substance that cannot dissolve in a solvent. Solution: A homogeneous mixture formed when a solute dissolves in a solvent. Solute: The substance that is dissolved in a solution (e.g., gold dust). Solvent: The liquid in which the solute dissolves (e.g., water). The Science of Solutions Dissolving Process: When a solute (like gold dust) is added to a solvent (like water), the solute particles break apart and are surrounded by solvent molecules. If enough solute is added, the solution becomes saturated, meaning no more solute can dissolve. Temperature Effect on Solubility: Generally, the solubility of solids increases with temperature. This means that more solute can dissolve in a solvent when it is warm or hot compared to when it is cold.

Saturated Solutions





A saturated solution is achieved when no more solute can dissolve in the solvent at a given temperature. Any additional solute will settle at the bottom of the beaker. Endpoints Define and describe key terms related to solubility. 1. 2. Conduct a fair test and record results systematically. 3. Explain the relationship between temperature and solubility of solids. 4. Make observations and infer conclusions based on collected data. Geography **Disciplinary Knowledge** Substantive Knowledge Examining the Map of Alchemy Island **Geography Skills** Map Reading: Practice interpreting maps What is Alchemy Island? Identify human and physical features using the key Alchemy Island is a concept and imaginary island that will be studied in Year 6 Determine the location of settlements and rivers on the map Geography. It provides a context for learning about maps, contours, and other Contour Lines: Learn to read and interpret contour lines geographic features. Understand that contour lines represent the elevation and shape of landforms Location of Alchemy Island Identify hills and valleys based on contour lines Alchemy Island is an imaginary island located in the Northern Hemisphere, somewhere in the Atlantic Ocean. Compass Skills Identifying and understanding the eight compass points. Contours Describing directions accurately using the compass. Contours are lines on a map that connect points of equal height or altitude. They Applying knowledge of compass points to navigate and plot routes on a map. represent the shape and elevation of the land. **Grid Reference Skills Ordnance Survey Maps** Understanding the concept of a grid reference. Reading and interpreting 6-figure grid references on a map. Using 6-figure grid references to locate specific points on a map. Plotting a route across Alchemy Island using grid references.





Ordnance Survey (OS) maps are detailed and accurate topographic maps of Great Britain. They provide essential information about geography, including contours, key landmarks, and other features.

Physical Features of Alchemy Island

Various physical features can be found on Alchemy Island. Some typical examples include mountains, hills, valleys, rivers, forests, and coastlines.

Endpoints:

- 1. Identify and describe the human and physical features of Alchemy Island using the map and key.
- 2. Interpret contour lines on a map and understand their significance in representing landscape features.
- 3. Draw lines on tracing paper to predict the contours of the landscape in Alchemy Island.

Plotting Routes

Eight-Pointed Compass

There are eight main compass points: North, South, East, West, Northeast, Northwest, Southeast, and Southwest.
The eight-pointed compass is used to show different directions on a map.
It is important to understand how to use the eight-pointed compass to navigate accurately.
6-Figure Grid References
Grid references are used to locate and identify specific points on a map.
A 6-figure grid reference is more precise than a 4-figure grid reference.
The first three figures indicate the eastings (horizontal lines), and the last three figures indicate the northings (vertical lines).
Grid references are always read from left to right (eastings first, then northings).

CourageResilienceHonestyKindnessMatthew 7:24 - "Therefore everyone who hears these words of mine and puts them into practice is like a wise man who built his house on the rock"

- Ordnance Survey Map Symbols
- BBC Bitesize Geography
- National Geographic Kids
- Ordnance Survey Map Zone
- National Geographic Kids: How to Use a Compass
- BBC Bitesize: Grid References





Endpoints

- 1. Use an eight-pointed compass to navigate and plot routes on a map accurately.
- 2. Use 6-figure grid references to locate and identify specific points on a map.
- 3. Plot a route across Alchemy Island using both the compass and grid references.

Design and Technology		
Substantive Knowledge Disciplinary Knowledge		
Circuit Building	Planning and Prototyping:	
Creating a Simple Circuit:	Sketch a design for the lamp or torch circuit.	
A circuit is a closed loop that allows electricity to flow.	Create a prototype using the specified components.	
Components needed: ribbons, LED bulb, 3V coin cell battery.	Problem-Solving:	
LEDs light up when electricity passes through them in the correct direction.	Identify suitable materials to bridge the circuit gap effectively.	
Making a Lamp or Torch:	Test different materials to ensure the switch mechanism works efficiently.	
Design a structure for the circuit to create a lamp or torch.	Practical Skills:	
Securely connect the components to ensure the circuit works effectively.	Safely handle electronic components.	
Increasing Battery Life:	Assemble the circuit following the design specifications	
Create a gap in the circuit, bridged by coins or other materials acting as a switch.	BBC Bitesize - Electrical Circuits	
This switch can be used to turn the circuit on and off, preserving battery life.	STEM Learning - Electricity Resources	
Conductive and Non-Conductive Materials:	Science Museum - Circuits and Conductors	
Conductive materials allow electricity to flow through them (e.g. metals).		
Non-conductive materials block the flow of electricity (e.g. plastics).		
Conductive Materials		
 Copper wire 		
Aluminium foil		
Graphite pencil lead		
Steel paperclip		
Brass fastener		
Non-Conductive Materials		
Plastic straw		
Wooden stick		
Rubber eraser		
Courage Resilience	Honesty Kindness	

Matthew 7:24 - "Therefore everyone who hears these words of mine and puts them into practice is like a wise man who built his house on the rock"





≻	Glass marble
≻	Ceramic tile
Endpoi	ints
1.	Successful creation of a functioning lamp or torch using the provided
	materials.
2.	Ability to identify and categorise conductive and non-conductive materials
	based on their properties.
3.	Demonstrate a clear understanding of how to conserve battery life by
	implementing a switch in the circuit design.