

Year 4 Maths Knowledge Organiser – Summer 2



Key Vocabulary
Acute angle
Right angle
Obtuse angle
Polygon
Triangle
Discrete data
Continuous data
graph
Coordinates
Axis
translation

Equilateral	Isosceles	Scalene	Right angled
 3 equal sides and 3 angles of 60°	 2 equal sides and 2 equal angles	 No equal sides or angles	 One angle is a right angle (90°)

Parallelogram	Rhombus	Trapezium
 Two pairs of parallel sides	 All sides have the same length and are parallel	 One pair of parallel sides

Acute angle	Right angle	Obtuse angle
 Less than 90°	 Exactly 90°	 More than 90° but less than 180°

Discrete and Continuous data

Data that is counted in whole numbers is discrete. In discrete data, values between whole numbers cannot be counted. Data that is measured and therefore can take on infinite values is continuous. In continuous data, values between whole numbers can be counted.

Frequency Tables

Tally marks are used to help count things. Each vertical line represents one unit. The fifth tally mark goes down across the first four to make it easier to count. The frequency column is completed after all the data has been collected.

Eye Colour	Tally	Frequency
brown		6
blue		8
green		3
grey		4
hazel		5

Bar Charts

A bar chart has a horizontal axis and a vertical axis. Bars are used to show the data of each category. There must be a gap between each bar. The scale of the bar chart is based on the range of data.

The scale on this bar chart counts in fives.

The bars are horizontal on this bar chart.

Two sets of data are shown on this stacked bar chart.

Describe Position

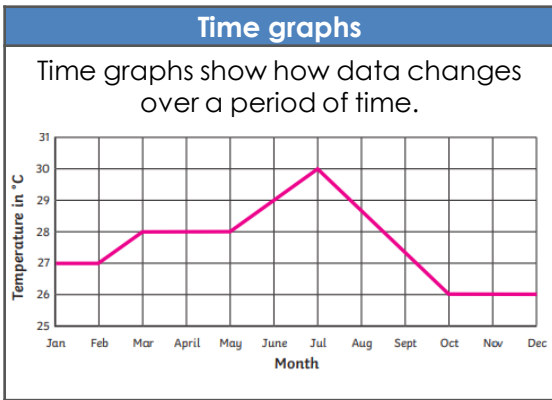
We can describe the position of a plotted point in a quadrant by using pairs of coordinates.

To find the coordinates, we find the position of a point on the (horizontal) x-axis first, followed by the point's position on the (vertical) y-axis.

The coordinates are noted in brackets with a comma between the x-axis and y-axis positions.

A = (2, 4) B = (5, 7) C = (9, 3)

In the first quadrant, the greater the x-axis coordinate, the further right the point is plotted. The greater the y-axis coordinate, the higher up the point is plotted.



Reading coordinates

REMEMBER!

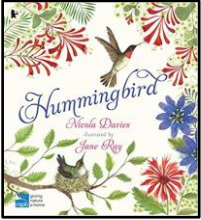
Along the corridor and up the stairs.

Move along the x-axis and then onto the y-axis.

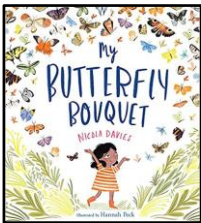




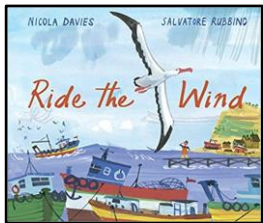
Core Texts



Hummingbird
Nicola Davies



My Butterfly Bouquet
Nicola Davies



Ride the Wind
Nicola Davies

Hummingbird

Rich and varied language brings the text to life, painting vivid images for the reader and evoking specific emotions, for example, through the use of:

- **figurative language**, such as alliteration, onomatopoeia and metaphor
- careful selection of **precise, descriptive vocabulary**
- adjectives, nouns and prepositional phrases used to create **expanded noun phrases**.

My Butterfly Bouquet

The story is told from a **first-person viewpoint** using **past tense** verb forms.

Action and **description** are interposed with **dialogue**, demarcated with inverted commas and the related punctuation.

Within the plot, parallels are drawn between the girl and the garden as they both flourish after being restored.

Ride the Wind

Material is organised into **paragraphs**. **Conjunctions and adverbials** (including fronted adverbials demarcated with commas) **sequence** the narrative and build cohesion.

Features of a Biography

The key purpose of biography is to **inform** the reader about the key events of a person's life.

As **recounts**, the main body of a biography is written using **past tense** verb forms.

Biographies are written from a **third-person** viewpoint

In line with the **purpose** of writing to **inform**, the text contains:

- **Specific facts**, such as places and dates
- **Descriptive detail**
- **Examples and explanations**.

'**Storytelling language**' is used

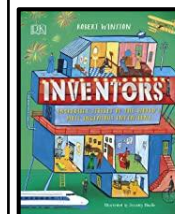
An **opening sentence** briefly summarises who the subject of the biography is and why they are a prominent or important figure.

Subsequent material is organised **chronologically** into **paragraphs** around a theme (*often a specific period of time*).

Illustrations clarify, exemplify and explain specific parts of the text, bringing the words to life by helping the reader to visualize people, objects and events.

Language to express **time and place** (such as **conjunctions, adverbials and prepositions**) sequence the material and build cohesion for the reader.

Core Text



Inventors: Incredible stories of the world's most ingenious inventions
Robert Winston



Year 4 Science Knowledge Organiser – Summer 2



Key Vocabulary

Chemical property	a characteristic of a substance that is observed during a reaction
Electrical conductors	materials that allow electricity to pass through it easily
Electrical insulators	materials that do not allow electricity to pass through it easily
elasticity	the ability for a material to be stretched or compressed and to return to its normal shape
flammable	a substance that ignites easily (sets on fire)
thermal conductors	materials that allow heat to pass through it easily
thermal insulators	materials that do not allow heat to pass through it easily.
toxic	a substance that is poisonous

All materials have **properties**.
Properties can be **physical** or **chemical**.

Physical properties

Physical properties include electrical conductivity; thermal conductivity; being malleable; absorbent; magnetic; hard/soft; rough/smooth; dull/shiny; and being windproof.

Thermal conductivity

Some materials are good thermal conductors. This means that they are good at transferring energy from a material that is at a higher temperature to a material that is at a lower temperature. Metal is a good thermal conductor.

A material that is a good thermal insulator is poor at transferring energy. Trapped air and plastic are good thermal insulators.

In homes, we use thermal insulators to reduce energy loss.

Elasticity

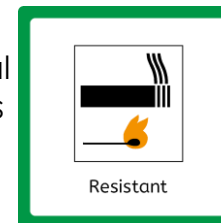
Some materials are elastic. Elastic materials can stretch and then return to its original form. An elastic band can be stretched but returns to its original size.

Chemical properties

- Scientists need to use specialist equipment to measure chemical properties.
- Some chemicals are flammable. This means they set on fire easily.
- If we see this hazard sign, we know a chemical is flammable.



- Fabrics used for soft furnishings are often coated with a chemical that reduces the fabrics flammability, and all materials are tested in labs to determine how flammable they are.



- Some chemicals are toxic, this means they are harmful to living things.
- If we see this hazard sign, we know a chemical is toxic.





Key Vocabulary	
crust	the outer later of the Earth made of rock.
earthquake	the sudden shaking of part of the Earth's surface
epicentre	the place on the Earth's surface directly above the focus of the earthquake
focus	the place in the Earth's crust where the earthquake is caused
infrastructure	physical facilities including roads, schools, hospitals and other buildings
magnitude	how much energy is released by an earthquake
seismograph	an instrument used to record the size and length of earthquakes
tectonic plate	one of the jigsaw-like pieces that forms the Earth. They are formed within the lithosphere
tsunami	a huge wave that is caused by earthquakes under water

What in an earthquake?

An **earthquake** is the sudden shaking of a part of the Earth's surface. Major earthquakes are usually caused by friction or pressure at **plate boundaries**. However, minor earthquakes can occur anywhere.

The place on the Earth's surface directly above the **focus** is called the **epicentre**.

The point in the Earth's crust where the earthquake begins is called the **focus**.

How do we measure earthquakes?

The **magnitude** of an earthquake is a measure of how much energy the earthquake releases. Magnitude is measured on the Moment Magnitude scale, which goes from 1 to 10.

1	4	8	10
Earthquake is so small that humans can't feel it.	Earthquake may break windows. Unstable or small objects may fall.	Earthquake is large enough to damage bridges and cause most buildings to collapse.	Earthquake is so large that you can see movement of the Earth's crust.

HICs, MICs and LICs

People in all countries around the world have different **incomes** (how much money is earned, usually in a year).

- Countries where people generally have a high income are called **high-income countries** (HICs).
- Countries where people generally have a low income are called **low-income countries** (LICs).

HICs and LICs exist in all continents across the world.

Not every person in a HIC has a high income, and not every person in a LIC has a low income – it is an average.

