Year 5 Maths Knowledge Organiser – Autumn 1

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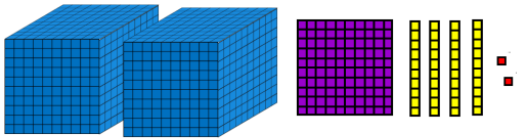
Key Vocabulary

- place value
- rounding
- digit
- sequence
- addition
- subtraction
- operation
- total
- exchange
- amount

Represent Numbers to 10,000

A four-digit number is made up of thousand, hundreds, tens and ones. Different concrete manipulatives and pictorial diagrams can be used to represent these numbers.

The number 2,132 can be represented like this:



This shows 2 thousands, 1 hundred, 4 tens and 2 ones.

The same number can also be represented with place value counters:

Rounding

When rounding, you first need to identify which digit will tell you whether to round up or down.

- To round a number to the **nearest 10**, you should look at the ones digit.
- To round a number to the **nearest 100**, you should look at the tens digit.
- To round a number to the **nearest 1000**, you should look at the hundreds digit.
- To round a number to the **nearest 10,000**, you should look at the thousands digit.
- To round a number to the **nearest 100,000**, you should look at the ten thousands digit.

Comparing

greater than | equal to | less than

Inverse Operations

Use the inverse to check:

53 476	
32 732	20 744

To check 53 476 – 32 732 = 20 744

use 32 732 + 20 744 = 53 476

Roman Numerals

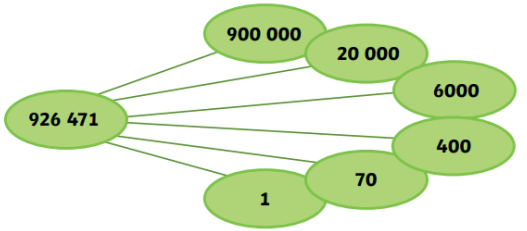
	I = 1	II = 2	III = 3	
IV = 4	V = 5	VI = 6	VII = 7	VIII = 8
IX = 9	X = 10	XI = 11	XX = 20	XXX = 30
XL = 40	L = 50	LX = 60	LXX = 70	LXXX = 80
XC = 90	C = 100	CL = 150	CC = 200	CCC = 300
CD = 400	D = 500	DC = 600	DCC = 700	DCCC = 800
CM = 900	M = 1000	MC = 1100	MD = 1500	MM = 2000

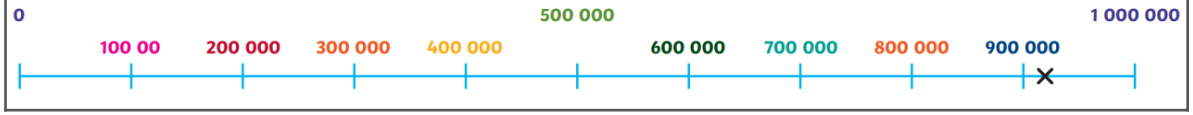
Numbers to One Million

926 471

Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
9	2	6	4	7	1

nine hundred and twenty-six thousand, four hundred and seventy-one





Find Missing Numbers

Mental Strategies

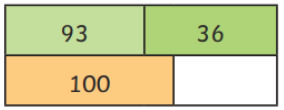
Use known facts:

7 + 4 = 11, so 7000 + 4000 = 11 000

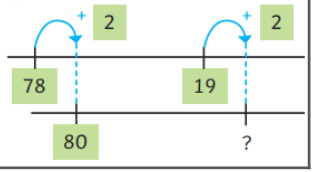
99 = 100 - 1, so 4 257 - 99 = 4 257 - 100 + 1 = 4 158

Use bar models and number lines:

93 + 36 = (93 + 7) + (36 - 7)
= 100 + 29 = 129

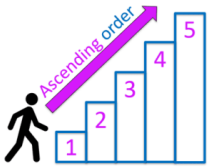


78 - 19 = (78 + 2) - (19 + 2)
= 80 - 21 = 59



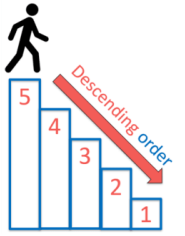
Ascending and Descending Order

Ascending
smallest to largest



Ascending means going up

Descending
largest to smallest



Descending means going down

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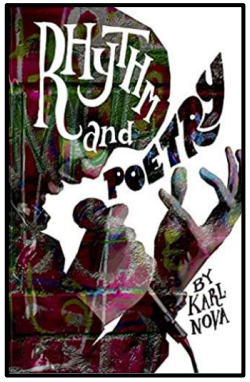
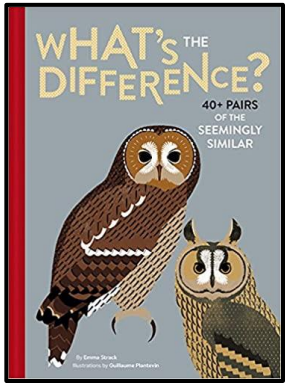
Core Texts



Rhythm and Poetry
Karl Nova



What's the Difference?
Emma Strack

Features of Text Type: Poetry

Language – poets often use **assonance** in their poetry. This is the repetition of the same or similar vowel sounds within words and is often used in poetry to create a sense of musicality and rhythm. The last words some lines in each verse share the same vowel sounds, e.g. the vowel sounds in 'dirty' and 'murky' are the same; as is the case with 'out' and 'found' and 'puzzled' and puddles'.

Rhyme – some poems, including this one, use rhyme to contribute to rhythm and to engage the listener. Rhyme helps the listener to hear where the line ends and a new line begins. Some rhyme schemes, like this one, are open to interpretation. One interpretation is that the poem has an ABAC rhyme scheme which switches to ABCB in third verse, with the half-rhyming 'awkward' and 'forward'.

Features of Text Type: Characters and Settings

Physical appearance, facial expressions, body language, speech, and personality traits can all be combined to create a broad and balanced depiction of character.

The opinions and reactions of the narrator/ other characters can be used to reveal additional traits and behaviours.

'Show don't tell' techniques create vivid images for the reader, bringing descriptions to life and inviting them to 'read between the lines'.

The setting of a narrative (where and when the action takes place) can include the location, date, time, weather conditions, social conditions and mood.

All five of the senses *(sight, touch, taste, smell, hearing)* create a broad and balanced setting description.

Features of Text Type: Developing Description

A comparative report is a non-fiction text written to **discuss** and **inform** by comparing and contrasting two or more things.

A general introductory statement presents the subject of the report and draws the reader in.

Headings, sub-headings and other structural devices organise material and aid presentation.

Paragraphs organise ideas around a theme, supported by the use of a sub-heading and a 'topic sentence'.

Technical vocabulary, specific to the topic, is used to inform.

A concluding statement briefly reviews and summarises the key points, leaving the reader with a final thought or reflection.

Year 5 Science Knowledge Organiser – Autumn 1

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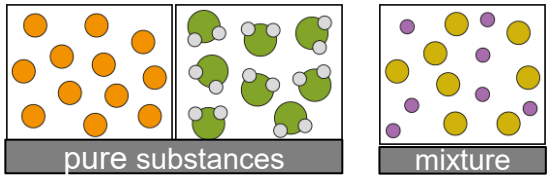
Key Vocabulary

condensation	the process where matter changes state, from gas to a liquid.
disperse	to be spread out or scattered over an area.
dissolve	when the tiny particles of a substance mix into another substance and spread throughout it
evaporation	the process where matter changes state from liquid to gas.
insoluble	a substance is insoluble if it cannot dissolve in the solvent
physical property	a property of a material that does not involve a chemical change to the material.
soluble	a substance is soluble if it can dissolve in the solvent
solvent	the substance that dissolves the solute. When we dissolve sugar in water, the water in the solvent

Mixtures and Pure Substances

A **pure substance** is one that contains only one substance.
A **mixture** contains two or more substances that can be separated.



Reversible and Irreversible Changes

An **irreversible change** is a change that **cannot be undone**, like burning candles or shredding paper.

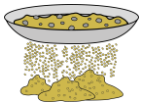
A **reversible change** is a change that **can be undone**, like dissolving sugar in water. We can separate the solution and get the sugar and water back.

Solutions

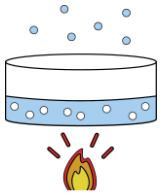
Some materials (**solutes**) can be **dissolved** in othe materials (a **solvent**). This **mixture** created is callec a **solution**.
When no more solute can dissolve in the solution, it is a **saturated** solution.
If a solid does not dissolve in a solvent, it is **insoluble**.

Separating Mixtures

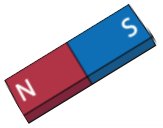
There are many techniques that we can use to separate mixtures.
The technique used depends on what you are trying to separate.



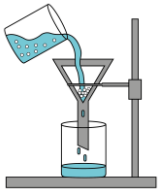
Use a **sieve** to separate different sized solids, or a large insoluble solid and liquid.



Evaporation can separate a soluble substance from the solvent, like sugar and water.



Use a **magnet** to separate magnetic and non-magnetic materials.



Use **filtration equipment** to separate small insoluble solids from liquids.

Year 5 Geography Knowledge Organiser – Autumn 1

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Key Vocabulary

commercial agriculture	farming crops and animals for money, rather than for the farmer to eat themselves
distribution	the way something is spread out
extract	to remove something from the ground
food miles	the distance (measured in miles) that the food you eat has travelled to your plate
fossil fuel	a substance that is used by humans to power cars or generate electricity.
industry	a system where people and machines work to produce things.
manufacture	making something on a large scale in a factory
stakeholder	a person that is involved in or affected by something
subsistence agriculture	farming crops and animals for the farmer to eat themselves to survive

Trade

- **Trade** is the process of buying and selling natural resources and goods.
- **Imports** are goods that are brought into the country. **Exports** are goods that are traded out of the country.
- Over time, trade has become more and more global.

Employment Industries

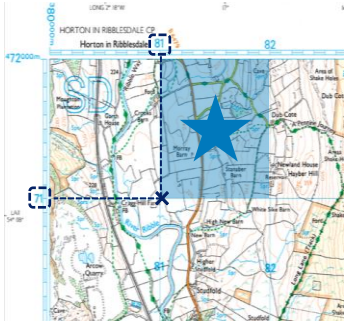
- **Primary:** Industries which collect or **extract** natural resources from the environment
- **Secondary:** Industries which manufacture goods into products.
- **Tertiary:** Industries which provide a service
- **Quaternary:** Industries which involve using technology and research.

Natural Resources

- **Natural resources** are materials that occur naturally in the environment, like **wood**, **food**, **water** and **fossil fuels**.
- **Fossil fuels** are materials made from fossils over millions of years, like coal and oil. Humans use these to run cars and electrical appliances.
- Natural resources can be **renewable** (they will not run out) or **non-renewable** (they will run out).

4-figure grid references

4-figure grid references are used to describe locations on an OS map.



1. Look at the bottom left corner of the square.
2. Find the **easting**.
3. Find the **northing**.
4. Write down the 4-digit grid reference.

Fairtrade

- **Fairtrade** is an organisation that supports farmers receiving fair prices and good working conditions.

FAIRTRADE