

Mathematics

In mathematics this term we are going to be learning about multiplication and division before moving onto fractions. Don't forget to complete your homework on Doodle!

Children need to be aware that the effect of multiplying by 10 twice is the same as multiplying by 100 and that multiplying by 10 three times is the same as multiplying by 1,000. Children should be comfortable with the language of "10 times the size of", "100 times the size of" and "1,000 times the size of".

In the next steps, children look at dividing whole numbers by 10, 100 and 1,000 and then multiplying and dividing by multiples of 10, 100 and 1,000

Things to look out for

- Children may move digits in the wrong direction in the place value chart, or by the wrong number of columns.
- Some children may over-generalise that multiplying by a power of 10 always results in adding zeros, which will cause issues in the Spring term when multiplying decimals.

The following websites might be useful to support these topics:

Square and cube numbers <https://www.bbc.co.uk/bitesize/topics/zyhs7p3/articles/z2ndsrd>

Simple multiplication (BBC Bitesize) <https://www.bbc.co.uk/bitesize/articles/zb4gcqt>

Long multiplication (BBC Bitesize) <https://www.bbc.co.uk/bitesize/articles/z4chnrd>

Short division introduction (BBC Bitesize) <https://www.bbc.co.uk/bitesize/topics/z36tyrd/articles/zgxdfcw>

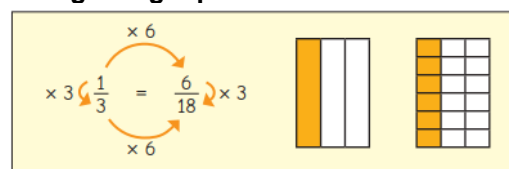
Adding and subtracting fractions (BBC Bitesize) <https://www.bbc.co.uk/bitesize/topics/zhdwxnb/articles/z9n4k7h>

Please continue to practice times tables on TTRockstars <https://play.ttrockstars.com/auth/school/student/42278> and watch out for some battles!

Fractions

In this unit the children will find fractions equivalent to a unit and non-unit fractions (unit fractions have 1 as a numerator and non-unit fractions have numbers other than 1 as their numerator), recognise equivalent fractions, convert improper fractions to mixed numbers and vice versa, compare and order fractions less than and greater than 1.

Recognising equivalent fractions:



The numerator/denominator has been multiplied by _____, so the denominator/numerator should also be _____ by _____.

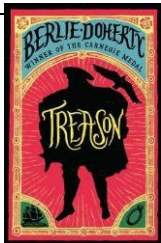
Adding fractions

Annie adds two mixed numbers by adding the wholes first and then adding the fractions.

$$2\frac{3}{5} + 4\frac{1}{5} = 6 + \frac{4}{5} = 6\frac{4}{5}$$

English

In English our three main writing genres will be Creative writing, Non-Chronological Report and narrative writing.

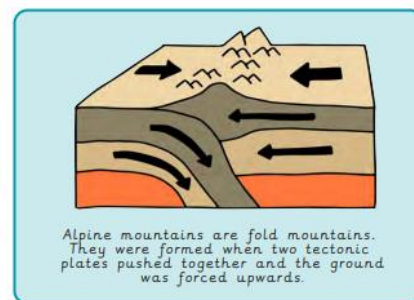
| Writing Genre: | Creative Writing | Non-Chronological Report | Narrative |
|-----------------------|---|---|--|
| Work: | Year 5 will familiarise themselves with our theme Amazing Alps. We will be using this to write our own adventure story on a journey of mountaineering through the Alp's largest mountain Mont Blanc. | The children will be learning about the different World Records that have been set in the Alps. | During this he pupils will be writing a story based on the story Polar Express. We will follow the main structure but also use our imagination to help us develop our own ideas. |
| Main skills covered | Descriptive writing skills will be our focus, looking at expanded noun phrases, relative clauses and emotive language to develop our paragraphs. We will ask the children to develop suspense and atmosphere by using a wide range of vocabulary and sentence structures. | The children will create an interesting report exploring a world record of their choice. As part of this unit, they will be exploring a variety of nouns and expanded nouns phrases, alongside relative clauses. They will be writing factually and will be developing their use of dashes, commas and apostrophes. | The children will work on using vocabulary/phrases which will show they are aware of their audience. They will effectively use relative clauses to develop complex sentences and use punctuation correctly to clarify meaning or signify dialogue. |
| Ways to help at home: | Ask your child what key events they have chosen to write about and support them in researching this area together. | You can learn about the use dashes here: https://www.bbc.co.uk/bitesize/topics/zmwnxb/articles/zmnwyjhw | Relative clauses: https://www.bbc.co.uk/bitesize/topics/zmwnp8mn/articles/zsrt4qt Speech marks: https://www.bbc.co.uk/bitesize/clips/zvftsbk |
| Reading and Spelling: | Guided Reading | Our weekly Spelling patterns: | |
| | This term's book is: Treason  | Don't forget to log into Doodle to complete your spelling practice and tests! | English assignments are loaded onto Doodle for your children to complete as homework. The games are also set to extend and develop your child's understanding. |

Geography: Term 2 - Amazing Alps

What is life like in the Alps?



Map of Europe



| | |
|---------|---|
| leisure | The use of free time for enjoyment. |
| tourist | A person who travels to a place for pleasure. |
| tourism | Travel for pleasure in which people visit places of interest. |

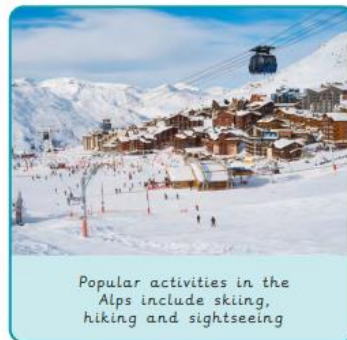
World map



Climate



Most of the Alps have a mountain climate. It is much colder than the surrounding climate due to the height of the mountains. Lower regions of the Alps have a temperate climate.



Design Technology: Term 2 - Pop up books!

Mechanical

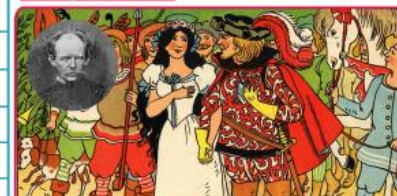
| | |
|------------------|--|
| Aesthetic | How an object or product looks. |
| CAD | Computer-aided-design. To use the computer to design a product, diagram or drawing. |
| Caption | A short piece of writing under a picture that describes or explains the picture. |
| Design | To make, draw or write plans for something. |
| Design brief | A description of what you are going to design and make and how it will work. |
| Design criteria | To help designers focus their ideas and test the success of them. |
| Exploded-diagram | A diagram which shows all of the parts of a product, including the internal and external parts. |
| Function | How an object or product operates or works. |
| Input | Input is the motion used to start a mechanism. |
| Linkage | A set of bars linked together to form a mechanism. |
| Mechanism | A system of parts working together. |
| Motion | The movement an object makes when controlled by an input or output (e.g. left, right, up, down). |
| Output | Output is the motion that happens as a result of starting the input. |
| Pivots | A shaft or pin on which something turns. |
| Prototype | A simple model that lets you test out your idea, showing how it will look and work. |
| Sliders | A part of a mechanism which allows an object to move from side-to-side (e.g. left-to-right). |
| Structure | Something which stands, usually on its own. |
| Template | A stencil made of metal, plastic, or paper, used for making many copies of a shape or to help cut material accurately (e.g. biscuit cutter). |

Input is the **motion** used to start a **mechanism**. Output is the **motion** that happens as a result of the **input**.



Think of a see-saw, when you sit on your side of the see-saw (**input**) your friend goes up on the other side. (**output**)

Did you know?



Did you know that the first children's pop-up books were invented in the 1700s? That's over 300 years ago! Lothar Meggendorfer was a well-known pop-up author in the 1800s.

During Religious Education we will be exploring places of worship, which includes a trip to Rochester Cathedral!

PHSE: What decisions people make with their money.

PE days are Tuesday and Wednesday. Please make sure you have warm kit as we are outside on Wednesdays! This term we will be learning how to play handball outside and gymnastics inside.

Y5 – Properties and changes of materials

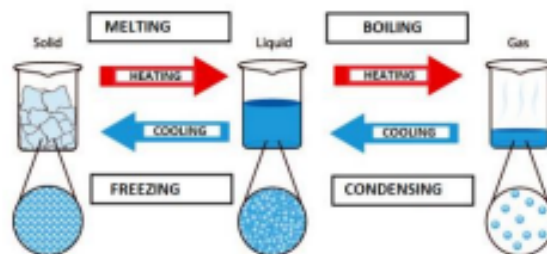
Prior Learning - Whilst this is a new topic, pupils may benefit from recapping what they have learnt about light as this will help with some concepts

- 1 I can distinguish between an object and the material from which it is made.
I can identify and name a variety of everyday materials, including wood, plastic, glass, water and rock.
I can describe the simple physical properties of a variety of everyday materials.
I can compare and group together a variety of everyday materials on the basis of their physical properties.
- 2 I can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.
I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.
- 3 I can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.
I can describe in simple terms how fossils are formed when things that have lived are trapped within rock.
I can recognise that soils are made from rocks and organic matter.
- 4 I can compare and group materials together, according to whether they are solids, liquids or gases.
I can observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).
I can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

I can Properties and changes of materials - Year 5

- ... compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.
- ... understand that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.
- ... use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.
- ... give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.
- ... demonstrate that dissolving, mixing and changes of state are reversible changes.
- ... explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.

Solids: particles are very close together in a regular pattern. Particles cannot move but can vibrate.
Liquids: particles are close together and in an irregular arrangement. The particles can slide past each other.
Gases: particles are far apart from each other and in an irregular arrangement. They are moving constantly in all directions.



Chemical Changes

Chemical change is when a change takes place and a new substance is formed. They are often not reversible.

Examples:

1. When something is burned
2. When food is cooked
3. When metal rusts



Physical Changes

Physical changes take place when a substance changes form or arrangement. They are often reversible.

Examples:

1. Changing state
2. When two substances are mixed When a substance or material is broken apart.



Chemical and physical changes

similarities

- Both cause a change in appearance
- Amount of matter does not change for both

differences

- Chemical creates a new material, physical does not
- Chemical is hard to reverse, physical is easy to reverse

Dissolving

A solution is made when solid particles are mixed with liquid particles. Materials that will dissolve are known as soluble. Materials that won't dissolve are known as insoluble. A suspension is when the particles don't dissolve.

Sugar is a soluble material.



Sand is an insoluble material.



thermal insulator



thermal conductor

Key Vocabulary

| | |
|-----------------------------|---|
| conductor | A substance that heat or electricity can pass through or along |
| dissolve | When a substance is mixed with a liquid, and it disappears |
| electrical conductor | A material or device that allows electricity to carry through |
| filter | To remove dirt or other solids from liquids or gases |
| gas | Rapidly expands when warmed and contracts when cooled |
| insoluble | Impossible to dissolve |
| insulator | A non-conductor of electricity or heat |
| irreversible | Impossible to reverse, turn back, or change |
| liquid | In a form that flows easily and is neither a solid or a gas |
| magnetic | Capable of being magnetised or attracted by a magnet |
| permeable | A gas or liquid can pass through such a substance |
| solution | A mixture which contains two or more substances evenly combined |
| thermal conductor | A material or device that allows heat to carry through |