



Birchfield
PRIMARY SCHOOL

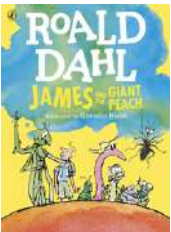

Year 2 Curriculum Overview
Term 1.2

Teaching Team:
Miss Nguyen, Mr Chapman, Miss Bakalou
SLT: Miss Saboor

PE Days: Monday & Wednesday

Homework: Homework is set on Friday and returned by Wednesday. Home reading books must be returned by Monday.

Please see below an overview of the main themes, knowledge and skills we will be covering this half term.

Enquiry Question	Does the past change the present?
Significant People	Isambard Kingdom Brunel The Wright brothers (Wilbur and Orville Wright) Ayesha Farooq
Class Texts	<p>James and the Giant Peach by Roald Dahl (Themes: Bravery, Perseverance, Relationships, Adventure, Resilience)</p>  <p>Taking Flight by Adam Hancher (Themes: Resilience, Ambition, Relationships/Love, Determination, Risk-taking)</p> 
Reading	<p>Reading Domain: 1c - Identify and explain the sequence of events in texts.</p> <p>Children will continue focussing on word reading and building their reading fluency. They will also continue reading unfamiliar words and developing strategies to help them with this. Children will develop their comprehension skills by learning how to answer who, what, where, when and why questions. They will be taught what certain question words mean, as well as the relevant strategies on how to identify key words and how to locate the answer in the text.</p>
Writing	<p>This half term, children will be learning about the structure of narratives and using their whole class text, James and the Giant Peach, to create their own. They will first innovate the character and fruit using a variety of descriptive language. They will then incorporate alternative verbs and adverbs to write the problem and resolution of their own</p>

	<p>version of the story. Children will then explore formal and informal letters. They will look at the organisational features of these, as well as language features such as emotive language and past tense verbs. They will use their whole class text, Taking Flight, as inspiration to write an informal letter to Kathryn Wright (Wilbur and Orville Wright's sister) about their new invention, as well as a formal letter to residents of Kitty Hawk, inviting them to the grand reveal of their glider.</p>
Maths	<p>This term, Year 2 will continue their learning of addition and subtraction. They will add and subtract using concrete objects, pictorially and mentally. Some of the concrete objects we will be using will include rekenerek, base ten and tens frames. The children will learn how to add using different methods such as the column method and number line. They will add two-digit numbers and ones, two-digit numbers and tens and two, two-digit numbers. The children will develop their understanding of how two numbers can be added in any order (commutative) and subtraction, of one number, cannot. They will recognise and use the inverse relationship between addition and subtraction. The children will use this and everything we have learnt to check calculations and solve missing number problems and word problems. Towards the end of the term, the children will also be exploring shape. They will identify and describe the properties of 2D and 3D shapes.</p>

	<p>They will develop their understanding of line of symmetry in a vertical line and use this to complete shapes. The children will compare and sort common 2D and 3D shapes and everyday objects. They will also make patterns with 2D and 3D shapes.</p>
History	<p>During the beginning of this half term, we will continue to look at significant historians and their significance upon the present day. Children will look at the impact of individuals, such as the Wright brothers and Isambard Kingdom Brunel, using Dawson's model to describe and rank individuals according to their significance of the present day. Later in the term, children will further develop their understanding of how to sequence information in chronological order on timelines, describing how aspects of life has changed over time.</p>
Science	<p>This half term, children will continue their Habitats project in Science, learning what a habitat provides for the plants and animals that live there, and that habitats contain both living and non-living things. They will use spotting sheets to identify plants and animals by carefully observing their physical characteristics. They will research how a woodland habitat provides the things necessary for the survival of the animals that live there. Pupil's will learn about food chains and construct their own. They will investigate the different ways prey animals avoid being eaten, and investigate animal camouflage. They will also look at the different methods</p>

	<p>plants use to avoid being eaten, and group them according to how they defend themselves. Children will then use the skills they have learned in the project to investigate the living things, food chains and adaptations in a mystery habitat.</p> <p>Children will then revisit human survival and the necessities to keep our bodies healthy with a balanced diet and good hygiene. Children will learn what germs, bacteria and viruses are, and learn how germs spread with links to our enquiry questions through discussing such events as The Great Plague, which killed many people.</p>
DT	<p>Children will learn that food comes from two main sources: animals and plants. They will be taught the origin of common foods such as milk, eggs, some meats and common fruit and vegetables; what tools are appropriate to prepare ingredients by peeling, grating, chopping and slicing; observe what happens when a range of foods are heated and cooled – whilst grouping and sorting foods; generate and communicate ideas through a range of different methods; understand how to work safely and hygienically when constructing and cooking; explain why designers and inventors are important; describe the types of foods necessary for a healthy and varied diet whilst applying such principles to make a simple, healthy meal; evaluate how their products meet criteria, and what they could do better in the future.</p>
Music	<p>This half term, children will consolidate their previous learning when playing a recorder.</p>

	They will continue to learn how to keep the pulse when playing the recorder, playing in time and in tune as well as developing their performance skills. Children will also learn the names of the notes in their instrumental part from memory or when written down.
Computing	During this term, students will explore digital photography. Children will learn the different devices that can be used to take photographs and will gain experience capturing, editing and improving photos. They will also use their knowledge recognise if an image is real or not.
PSHE	This term Year 2 will be looking at 'What is bullying?' and continuing the theme of relationships. They will understand how words and actions can affect how people feel. The children will develop their understanding that name-calling, hurtful teasing and excluding others is unacceptable. They will learn how to respond to bullying and how to seek help. The children will also be exploring our school value 'Respect'. They will reflect on what this is, who in our lives shows respect, and how we can show respect towards others
RE	At the beginning of this half term, the children will look at responding to suffering. They will look at different religions including Humanism, Christianity and Islam. They will learn how people from different religions can make things and people better. Towards the end of the term, the children will be looking at sharing and generosity. They will begin to

	<p>understand why Christians give gifts and celebrate Christmas.</p>
PE	<p>Within every P.E unit, all pupils develop their physical, social, emotional and thinking skills.</p> <p><u>Fitness</u></p> <p>This half term, children will participate in a range of fitness activities. Children will develop agility, co-ordination, speed, balance, stamina and have the opportunity to work with their peers and independently. Working with their peers will allow the children to work on their social skills of taking turns as well as supporting and encouraging one another. Children will demonstrate our school values, determination, whilst having to work and be active for longer periods of time. Throughout the fitness unit, children will have the opportunity to identify their strengths and areas for improvement and will challenge themselves to work on this.</p> <p><u>Dance</u></p> <p>Also this half term, pupils will participate in dance lessons. The children will explore space and learn how their body can be moved to express a mood, character, feeling or idea. They will explore a range of travelling techniques to create flow within their dance routines. The children will also use counts of 8 to allow them to keep in time with the music when they are dancing. Through their dances, children will explore shapes, directions, speed and travel. Within the unit, children will work independently and with a</p>

	<p>partner. This will allow them to develop their social skills of working respectfully with others and sharing ideas. They will also have the opportunity to observe and offer feedback using key terminology that they have learnt within their lessons.</p>
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Knowledge Organiser: Enquiry

Key Vocabulary	Definition
Aeroplane	A powered flying vehicle with wings.
Invention/Inventor	To create or design (something that has not existed before). Inventor is the person who created it.
Engineer	Someone who makes machines, or plans the building of roads and bridges.
Travel	To make a journey.
Passenger	A person who is travelling in a bus, train, ship, or aeroplane, but not driving it.
Glider	A light aircraft that is designed to fly without using an engine.
Rudder	An important part of a plane that allows them to move from left to right.
Train	A vehicle which carries goods or passengers on a railway. It often has several coaches or trucks.
Design	To draw a plan or pattern for something.
Pilot	A person who operates an aircraft.
Pioneer	The first people to achieve something new.
Change	Make (someone or something) different.



First flight of the Wright Flyer.
December 17th 1903

Can the past change the present?

The Wright brothers' background

The Wright brothers invented the aeroplane in 1903. Previously they made gliders, kites and bicycles. The first flight only lasted 12 seconds and travelled 37 metres. The Wright brother's passion and mechanical innovation, paved the way for air travel as we know it today.

Did you know the first Pakistani fighter pilot was Ayesha Farooq? She qualified in 2013.

Questions to think about

- What would the world be like without air travel?
- How has air travel helped people move around the world?
- How does air travel affect the environment?
- What is the difference between aeroplanes now and when the Wright Brothers invented them?
- Do you know any female pilots?



Ayesha Farooq
First female, Pakistani fighter pilot
21st Century
2000

Timeline dates

- 1783**
First flight of a hot air balloon
- 1867**
Wilbur Wright is born.
- 1871**
Orville Wright is born.
- 1903**
First flight of an aeroplane.
- 1939**
First flight of a helicopter.
- 1957**
First airliner flight (carrying passengers)
- 1961**
First flight into space.



Orville Wright
Born in 1871



Memorial tower at Kill Devil Hill - dedicated in 1932



Wilbur Wright
Born in 1867.



North Carolina - Where the first flight took place.

Industrial Revolution
1760

Victorians
1837

20th Century
1900

Isambard Kingdom Brunel's background

Isambard Kingdom Brunel was a mechanical engineer in the 1800s and was famous for working on many ambitious projects throughout his life. His successes include, Clifton Suspension Bridge, SS Great Eastern and the Great Western Railway. Brunel is most famous for his work on The Great Western Railway which travels from London to Bristol. To do this, he had to develop different tunnels and viaducts that are still used nowadays!

Did you know that Brunel developed one of the first passenger trains! People were worried that their trains would explode because trains travel very quickly!

Questions to think about

- Who was Isambard Kingdom Brunel and what did he do?
- How did he help change the UK?
- Why was his work as an engineer important to the development of the UK?

Female inventors:

- Margaret E. Knight (1838-1914) - Paper bag
- Mary Anderson (1866-1956) - Car window wipers
- Katharine Burr Blodgett (1898-1979) - Non-reflective glass
- Lyda D. Newman (Born 1885) - Durable hairbrush

Categories of significant people

Significant people can be sorted into groups by what they did, such as: Activists, explorers, inventors, scientists, artists or monarchs. **Isambard** and the **Wright brothers** were inventors and created something that changed the world.

Comparison	Isambard	The Wright brothers
Invention	Passenger train in 1841.	Aeroplane 1903.
Technology	Great Western Railway, box tunnel, Thames tunnel, The Great Eastern, Clifton suspension bridge.	Rudders and propellers
Impact	People and goods were able to travel quicker around the UK and across oceans.	People can now visit different countries in hours rather than days or weeks.
Significance	Routes and inventions are still used in the present day.	Introduced a new way of travel that is still used today for business and leisure.

Timeline dates

- 1806**
Isambard is born 9th April to parents Marc and Sophie.
- 1825**
Work begins on digging the Thames tunnel.
- 1827**
Isambard takes over from his Father on the Thames tunnel. The roof collapsed and flooded the tunnel.
- 1831**
Isambard wins competition to build a bridge over the Aven river gorge in Clifton, Bristol.
- 1833**
Isambard becomes Chief Engineer to Great Western Railway and begins route.
- 1841**
The Great Western Railway route from London to Bristol opened.
- 1843**
Thames Tunnel opens to public on 25th March.
- 1858**
The Great Eastern finally launched in January.
- 1859**
Brunel dies from a stroke on 15th September.
- 1860**
The Great Eastern makes maiden voyage with 35 paying passengers and 400 staff.
- 1864**
Clifton Suspension Bridge completed years after it was delayed due to money problems.



Isambard Kingdom Brunel
Born 9th April 1806



The Great Western Railway
In 1832, plans began to make a direct line from London to Bristol. This was completed in 1841.

Industrial Revolution
1760

Victorians
1837

Science

HUMAN SURVIVAL

Regular exercise keeps our bodies strong and healthy. It also improves our mood. We should exercise for one hour every day. There are four main types of exercise:

Key Vocabulary	Definition
Healthy	In a good physical condition
Hygiene	A process to maintain good health through cleanliness.
Germ	Tiny organisms that cause disease.
Bacteria	A type of germ that can cause disease or be helpful.
Nutrients	Provides nourishment essential for life and growth.
Vitamins and minerals	Nutrients found in food that help body grow and be healthy.
Virus	A type of germ that is infectious.
Calcium	Helps bones and teeth grow strong.
Protein	Helps muscles develop and repair.
Carbohydrates	Provide the body with energy.
Fat	Essential for our bodies in moderation.
Predict	Using knowledge to guess what might happen.

Aerobic exercises like running make the heart beat faster to keep it healthy for pumping blood around the body.



Strengthening exercises like push-ups make our bones and muscles stronger and helps our balance.



Stretching exercises like the cobra stretch make our bodies more flexible, to help prevent sprains and injuries.



Balancing exercises like gymnastics improve our balance and coordination. This makes us less likely to fall and improves our sporting performance.



Bodily hygiene is the way we keep our bodies clean and get rid of germs. Germs are tiny living things, such as bacteria, that can cause illness in humans. There are germs on most surfaces we touch, so keeping ourselves clean helps us stay healthy.

Wash your hands with soap and running water frequently.



Wash your hair with shampoo at least once or twice a week.



Brush your teeth twice a day.



Trim your fingernails and toenails every week and clean them every day.



Wipe your bottom and wash your hands after using the toilet.



Wear clean clothes. Change your underwear and socks every day.



Have a bath or shower at least twice a week and also after playing sport or getting dirty.



Cough and sneeze into a tissue before throwing it in the bin and then washing your hands.



Time to wash our hands!

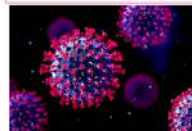


Germs can spread onto our hands and surfaces we touch. Sneezing, coughing, using the toilet, handling pets and dirt from playing outside can all spread germs. Washing with soap and water removes germs.

Types of germs:



Bacteria



Viruses

Habitats

What is a habitat?

A habitat is a place where plants and animals live. There are many different habitats on Earth, including:



forest polar desert



ocean mountain rainforest

Every habitat provides the things that plants and animals need to survive:

- **food** to provide nutrients for energy and growth
- **water** for plants to make food and stand upright and for animals to stay alive
- **shelter** for protection from weather and predators
- **space** to grow, feed and have offspring

Animal adaptations

Prey animals use different ways to avoid being eaten by predators.

Speed

Some prey, such as the springbok, use speed to outrun predators.



Weapons

Some prey, such as the porcupine, use body parts, such as sharp quills, to hurt their predators.



Warning colouration

Some prey use bright colours to warn predators to stay away.



Shields

Some prey have hard coverings for protection.



Mimicry

Some prey look like other, more dangerous animals.



Camouflage

Some prey blend into their surroundings so that predators will not see them.



Living and non-living things

Habitats contain living things, such as plants and animals, and non-living things, such as dead plants and animals, rocks and water. Living things can be identified because they carry out the seven life processes:

- moving
- breathing
- using their senses
- feeding
- getting rid of waste
- producing offspring
- growing

Identifying plants and animals

Many different plants and animals live in a habitat. Unknown plants and animals can be identified using spotting sheets. Observations of their physical features and behaviour can be compared with pictures and descriptions of plants and animals on the spotting sheet to find a match.

Woodland habitat

Woodland habitats are green, damp and shady. They contain living things, such as oak trees and squirrels, and non-living things, such as rocks and streams. Woodland habitats provide everything needed for its living things to survive and grow.



Food chains

A food chain shows how energy from food is transferred from plants to animals in a habitat. The arrow between members of a food chain means 'is eaten by'. Food chains start with a plant because plants make their own food using sunlight. Plants are eaten by animals, some of which are eaten by other animals. Predators are animals that eat other animals. Prey are animals that are eaten.



In this food chain, the grass is a producer because it makes its own food from sunlight. It is eaten by the water vole, a herbivore, which is eaten by the stoat, a carnivore. The stoat is the predator, and the water vole is its prey.

Plant adaptations

Plants also have adaptations that protect them from being eaten by animals.

Spines

Some plants grow sharp spines to hurt predators.



Stings

Painful stings can stop animals from eating some plants.



Thorns

Woody thorns can scratch and pierce the skin of predators.



Chemicals

Some plants produce chemicals that are poisonous to animals.



Hairs

Tiny hairs on the stems and leaves of some plants stop insects from crawling on them.



Camouflage

Some plants are camouflaged so that they do not look like food.



Prickly leaves

Sharp prickles can put animals off eating the leaves.



Sheltering animals

Some plants provide a home to other animals that provides them with protection.



Glossary

camouflage	The ability to hide or blend in with the surrounding habitat.
identify	To recognise something and say what that thing is.
mimicry	When a living thing copies the appearance or behaviour of another animal, plant or object.
nutrient	A substance that plants and animals need to grow, live and stay healthy.
offspring	The young of an animal or plant.
quill	A long, sharp spine found on some animals, such as porcupines.

Maths

Maths Knowledge Organiser – Addition & Subtraction

Topic Coverage

Addition & Subtraction

- Add and subtract using concrete objects, pictorially and mentally, including 2 digit numbers and ones, a two digit number and tens, two two digits numbers.
- Recognise and use the inverse relationship between addition and subtraction.
- Solve problems with addition and subtraction (with concrete objects, pictorially).

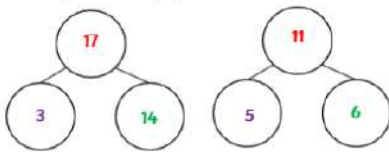
Recognise and use the inverse relationship between addition and subtraction.

Inverse operation helps you to check your answer. It is the opposite operation.

For example:

Inverse for subtraction (-) is addition (+)

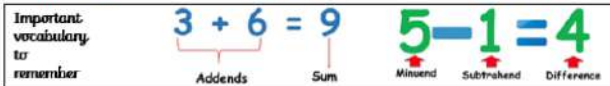
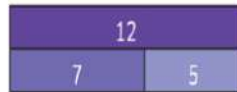
Inverse for addition (+) is subtraction (-)



$$\begin{aligned} 3 + 14 &= 17 \\ 14 + 3 &= 17 \\ 17 - 14 &= 3 \\ 17 - 3 &= 14 \end{aligned}$$

$$\begin{aligned} 5 + 6 &= 11 \\ 6 + 5 &= 11 \\ 11 - 6 &= 5 \\ 11 - 5 &= 6 \end{aligned}$$

$$\begin{aligned} 7 + 5 &= 12 \\ 5 + 7 &= 12 \\ 12 - 5 &= 7 \\ 12 - 7 &= 5 \end{aligned}$$



Commutative Law

Addition can be solved in **ANY** order. You are able to **swap** the numbers around.

Examples:

$$\begin{aligned} 5 + 9 &= 14 \\ 9 + 5 &= 14 \end{aligned}$$

$$\begin{aligned} 7 + 8 &= 15 \\ 8 + 7 &= 15 \end{aligned}$$

$$\begin{aligned} 2 + 7 &= 9 \\ 7 + 2 &= 9 \end{aligned}$$

$$\begin{aligned} 9 + 1 &= 10 \\ 1 + 9 &= 10 \end{aligned}$$

$$\begin{aligned} 4 + 3 &= 7 \\ 3 + 4 &= 7 \end{aligned}$$

Key Vocabulary

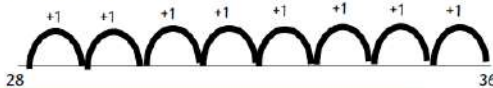
Add	To bring 2 or more numbers together to make a new total.
Plus	
Sum	The calculation/number sentence of 2 or more numbers.
Solve	To find a solution (to work out something)
Altogether	
Total	The answer of adding numbers.
Subtract	
Minus	
Take away	Finding the difference between numbers. (What is left)
Difference between	
Inverse operation	The opposite operation (inverse of + is - and inverse of - is +).
Column addition	Writing one number below another and then adding one column at a time.
Column subtraction	Writing one number below another and then subtracting one column at a time.
Number facts	Simple calculations with 2 numbers (number bonds/fact families)
Commutative	Solving a number sentence in any order (only with addition e.g. $3+7=10$ and $7+3=10$).

Add and subtract using concrete objects, pictorially and mentally, including 2 digit numbers and ones, a two digit number and tens, two two digits numbers.

2 digit numbers +/- 1 digit number

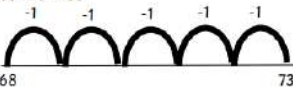
When subtracting or adding 2 digit and 1 digit numbers it is useful to draw your own number line.

For example: $28 + 8 = 36$



First, write the addend on the left (28). Then make small jumps forwards adding one each time until you have added the correct amount (8). Fill in the numbers until you get the total (36).

$$73 - 5 = 68$$



First, write the minuend on the right (73). Then make small jumps backwards subtracting one each time until you have subtracted the correct amount (5). Fill in the numbers until you find the difference (68).

2 digit number +/- 2 digit numbers

When adding or subtracting two 2 digit numbers it is useful to use the column method.

Not crossing ten

	2	3		2	5
+	1	2	-	1	3
	4	5		3	8

Always +/1 ones first and write number underneath ones column. Then +/- tens and write under tens column.

Crossing ten

	4	9		
+	2	6		
	7	5		
			1	
	3	1		
-	2	6		
	1	5		

Always + ones first. If the value is 10 or bigger then you must regroup, (moving the ten into tens column and leave ones in ones column. Then add tens column (remember to add the ten you regrouped).

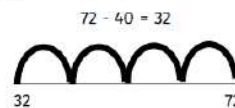
Always - ones first. If the number on top is smaller than the number on the bottom then you must exchange a ten to make it bigger. Then continue the column process.

Solve problems with addition and subtraction (with concrete objects, pictorially).

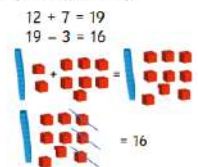
Sam took 25 minutes to do his homework. It took Jacob 22 minutes. How long did they take altogether?

$$\begin{array}{r} 25 \\ + 22 \\ \hline 47 \end{array}$$

A florist has 72 roses. She sells 40 in one day. How many are left?



John buys 12 pencils one week and 7 the following week. He gives 3 pencils to his friend. How many pencils does he have left?



$$\begin{aligned} 12 + 7 &= 19 \\ 19 - 3 &= 16 \end{aligned}$$

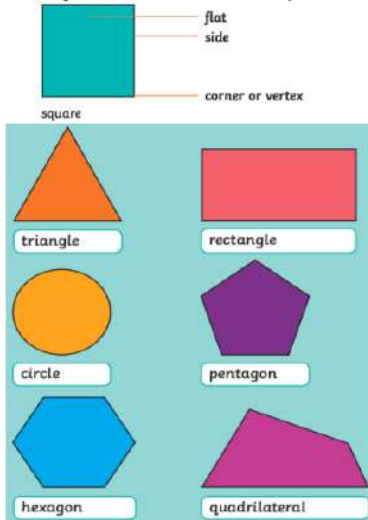
Maths Knowledge Organiser – Geometry: Properties of Shape

Topic Coverage

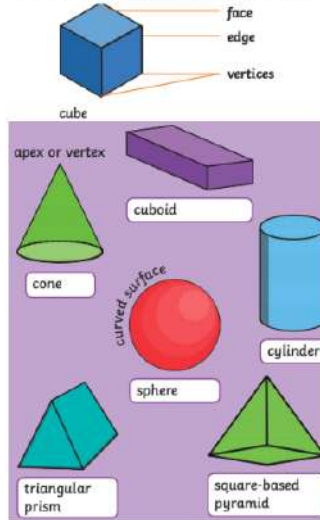
Shape

- Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line.
- Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.
- Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid.]
- Compare and sort common 2-D and 3-D shapes and everyday objects.

Recognise and describe 2D Shapes



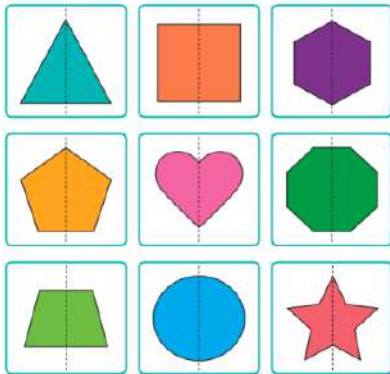
Recognise and describe 3D Shapes



Key Vocabulary	Definition
Two dimensional (2D)	Any shape that is 'flat' or has 2 dimensions.
Three dimensional (3D)	Any shape that is 'solid' or has thickness or depth.
Flat	A level surface.
Solid	An object which is firm and stable.
Corners	Another word for vertices/ where 3 edges meet.
Apex	The highest point of a shape.
Vertex	Where two or more edges of a shape meet.
Vertices	More than one corner.
Side	Where two vertices on a shape meet.
Edge	Where two faces on a shape meet.
Face	The largest surface area of a shape.
Curved	A rounded surface which is not flat.
Straight	Something that does not have a wavy or a curve.
Lines of symmetry	A central dividing line (a mirror line) to show that both sides of the shape is <i>exactly</i> the same.
Pattern	A design in which the same shape/lines are repeated.

Lines of Symmetry

These 2D shapes have a line symmetry (a mirror line) because it is the same on both sides.

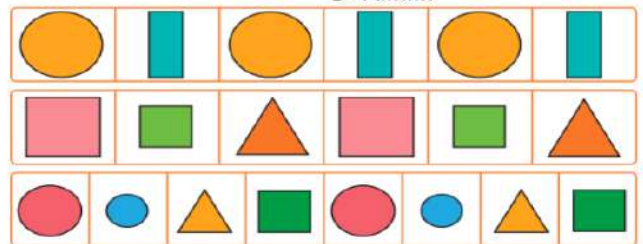


These 2D shapes are not symmetrical because it is not the same on both sides.

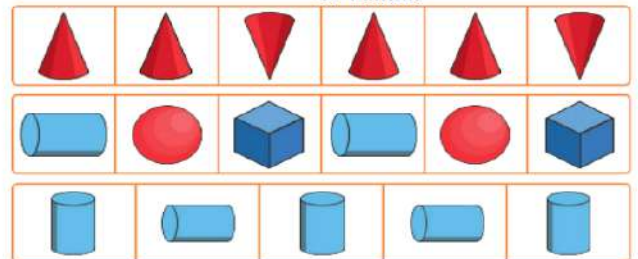


Repeating Shape Patterns

2D Patterns



3D Patterns



Important information

- Not all same-sided shapes look the same, such as irregular 2D shapes.
- When making patterns, shapes which are placed in different orientations (positions) stay the same. For example, squares do not become diamonds when placed sideways.

Home Learning and Useful Links:

Home Learning

Create a bridge that can hold a weight.

Create a glider with a moving propeller

Write a fact file on Isambard Kingdom Brunel's life and achievements.

Write a report on the impact the Wright Brothers had on the world today.

Useful links

Isambard Kingdom Brunel

<https://www.bbc.co.uk/bitesize/topics/zd4dy9q/articles/znj32sg>

<https://www.theschoolrun.com/homework-help/isambard-kingdom-brunel>

https://www.youtube.com/watch?v=zovFQQ2SwBc&ab_channel=BBCTeach

The Wright Brothers

<https://www.history.com/topics/inventions/wright-brothers>

<https://kids.nationalgeographic.com/history/article/wright-brothers>

https://www.ducksters.com/biography/wright_brothers.php

<https://kids.britannica.com/kids/article/Wilbur-and-Orville-Wright/353940>

<https://www.factsjustforkids.com/famous-people-facts/wright-brothers-facts-for-kids/>