



**Birchfield**  
PRIMARY SCHOOL

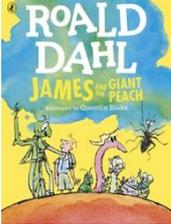
Year 2 Curriculum Overview  
Term 1.2

Teaching Team:  
Mrs Sperrin, Mr Chapman, Miss Bakalou  
SLT: Miss Saboor

PE Days: Monday & Wednesday

Homework: Homework is set on Friday and returned by  
Wednesday.

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 <b>(Themes: Bravery, Perseverance, Relationships, Adventure, Resilience)</b></p>  <p>Taking Flight by Adam Hancher <b>(Themes: Resilience, Ambition, Relationships/Love, Determination, Risk-taking)</b></p> 
Reading	<p><b>Reading Domain:</b> 1c - Identify and explain the sequence of events in texts.</p> <p><b>Test Technique:</b> Short, constructed response – extracting information from the text (literal/inference)</p> <p>Children will continue focussing on word reading. They will be learning what suffixes are, what they mean and how to read them. They will also continue reading unfamiliar words and developing strategies to help them with this. Children will also continue to 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. Children will also continue learning about the structure of a story and how to summarise events that happen within their whole class 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 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</p>

	<p>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.</p> <p>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. 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>At the beginning of this half term, the children will learn about animals and their needs for survival. Pupils will cover both vertebrates and invertebrates; habitats and the living and non-living aspects of which you would find in each habitat; food chains; what can support or destroy habitats; as well as the change of behaviour in animals during the change of</p>

	<p>seasons. They will then revisit human survival and the necessities to keep our bodies healthy with a balanced diet and good hygiene. Children will explore the five food groups, and how a balanced diet maintains a healthy body and lifestyle alongside exercise. They 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 be exploring the song 'Ho Ho Ho' which is a Christmas song by Joanna Mangona and Jane Sebba. Children will identify instruments within the song which are: singers, keyboard, bass, guitar,</p>

	<p>percussion, trumpet and saxophone. Children will continue learning how to find the pulse and keeping in time with the music. Children will be exposed to a new style of singing, rap. They will spend time using instruments to play three notes, as well as learning how to make their performance entertaining for their audience.</p>
Computing	<p>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.</p>
PSHE	<p>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 in 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</p>
RE	<p>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</p>

	<p>sharing and generosity. They will begin to understand why Christians give gifts and celebrate Christmas.</p>
<p>PE</p>	<p>Within every P.E unit, all pupils develop their physical, social, emotional and thinking skills.</p> <p><b><u>Fitness</u></b></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 work on their social skills of taking turns as well as supporting and encouraging one another. Children will demonstrate our school value, 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><b><u>Dance</u></b></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,</p>

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



First flight of the Wright Flyer.  
December 17<sup>th</sup> 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  
21<sup>st</sup> 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 an helicopter.
- 1957**  
First airliner flight (carrying passengers)
- 1961**  
First flight into space.



**Orville Wright**  
Born in 1871



**Wilbur Wright**  
Born in 1867.



**Memorial tower at Kill Devil Hill**-dedicated in 1932



**North Carolina**  
Where the first flight took place.

Industrial Revolution  
1760

Victorians  
1837

20<sup>th</sup> 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 brains 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 9<sup>th</sup> 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 Avon 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 25<sup>th</sup> March.
- 1858**  
The Great Eastern finally launched in January.
- 1859**  
Brunel dies from a stroke on 15<sup>th</sup> 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 9<sup>th</sup> 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

## ANIMAL SURVIVAL



A food chain shows how living things depend on one another for food. All food chains start with a plant, which is a **producer**, followed by animals, which are **consumers**. Animals can be **herbivores** that only eat plants, **carnivores** that only eat meat or **omnivores** that eat plants and meat.

A habitat is a place where plants and animals live. There are different habitats, such as forests, polar regions, deserts, oceans, mountains and rainforests. Habitats have **living and non-living parts**. Living parts include the plants and animals that live there. Non-living parts include sunlight, air, water, soil and temperature. All living things depend on the living and non-living things in their habitat to survive. This is called **interdependence**.

Habitats provide the food, water, air, shelter and space that animals need to survive. They need food and water for energy and growth. They need air to breathe. Animals need shelter for protection from weather or dangers. They need space to grow and reproduce.

**Invertebrates are animals without a backbone.** They can be sorted based on what they look like. Six invertebrate groups include arachnids, crustaceans, insects, molluscs, myriapods and worms.



Humans can harm the habitats of other living things by using chemicals on their gardens, tidying green spaces and digging up habitats. Litter can also harm habitats.



Animals change their behaviour as the seasons change in the United Kingdom. In spring, animals **reproduce** and have **offspring**. In summer, young animals **grow and develop**. In autumn, animals prepare for winter. In winter, animals **protect** themselves from the cold weather by **sheltering, hibernating or migrating**.



Humans can help habitats in many different ways. They can **feed wildlife** and **build microhabitats**, such as ponds or insect hotels. They can **leave wild, uncut areas in gardens or public places**. They can also **remove weeds by hand instead of using chemicals**.

Key Vocabulary	Definition
Habitat	The natural home or environment of an animal, plant or other organism.
Micro habitat	The natural home of a small organism such as an insect.
Animal	A living organism that feeds on organic matter.
Human	A human being.
Insect	A small animal with six legs and generally one or two pairs of wings.
Reptile	An animal with dry, scaly skin and typically are cold-blooded and lay eggs.
Amphibian	Cold-blooded animals that can survive on land or underwater.
Mammal	A warm-blooded animal with hair, females give milk to their young.

# 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).

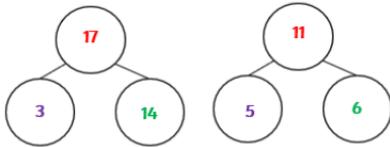
#### Recognise and use the inverse relationship between addition and subtraction.

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

For example:

Inverse for subtraction (-) is addition (+)

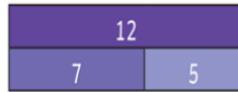
Inverse for addition (+) is subtraction (-)



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

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

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



Important vocabulary to remember

$$3 + 6 = 9$$

Addends      Sum

$$5 - 1 = 4$$

Minuend      Subtrahend      Difference

#### 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

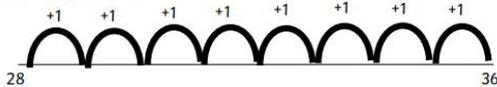
Add	To bring 2 or more numbers together to make a new total.
Plus	
Sum	The calculation/number sentence of 2 or more numbers.
Solve	To find a solution (to work out something)
Altogether	
Total	The answer of adding numbers.
Subtract	
Minus	
Take away	Finding the difference between numbers. (What is left)
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

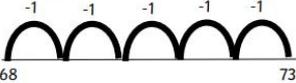
When subtracting or adding 2 digit and 1 digit numbers it is useful to draw your own number line.

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 +/- 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).

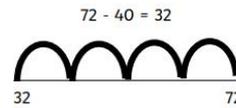
Always - ones first. If the number on top is smaller than the number on the bottom then you must exchange a ten to make it bigger. Then continue the column process.

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

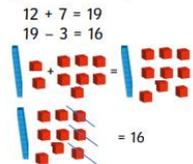
Sam took 25 minutes to do his homework. It took Jacob 22 minutes. How long did they take altogether?

$$\begin{array}{r} 25 + 22 = 47 \\ \begin{array}{r} T & O \\ + & 2 & 5 \\ + & 2 & 2 \\ \hline 7 & 7 \end{array} \end{array}$$

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?



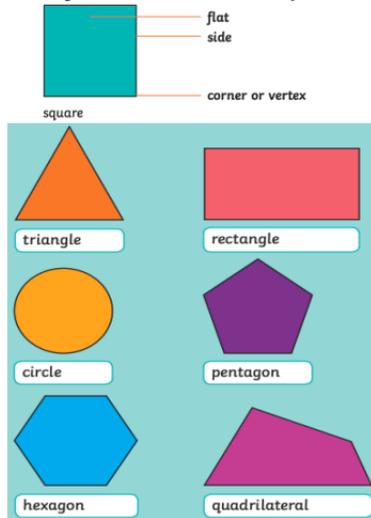
# Maths Knowledge Organiser – Geometry: Properties of Shape

## Topic Coverage

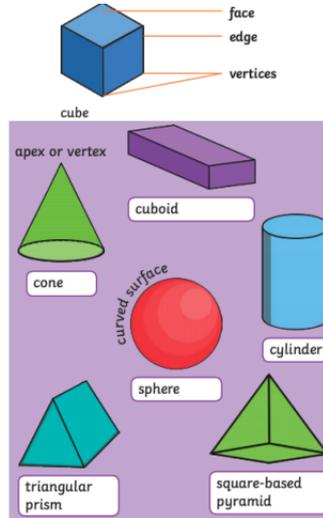
### Shape

- 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



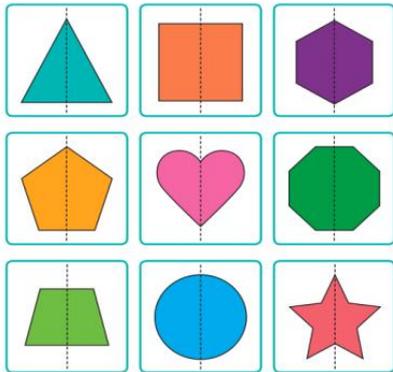
### Recognise and describe 3D Shapes



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 wave or a curve.
Lines of symmetry	A central dividing line (a mirror line) to show that both sides of the shape is exactly 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.

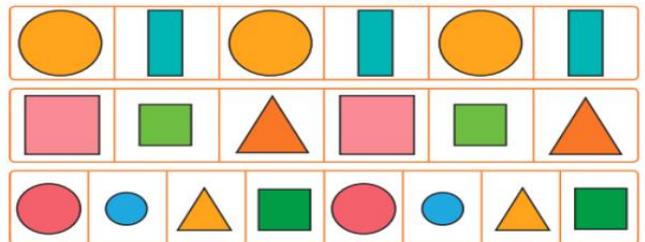


These 2D shapes are not symmetrical because it is not the same on both sides.

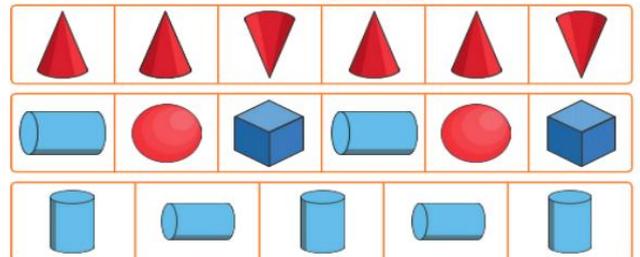


### Repeating Shape Patterns

#### 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](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://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/>