

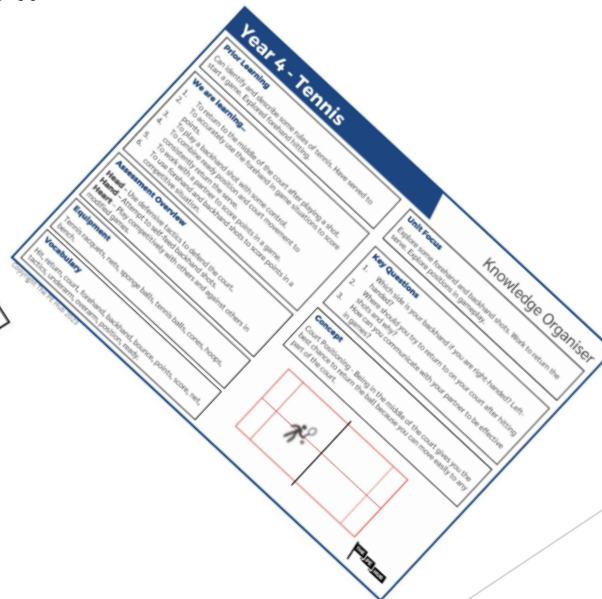
# Year 2

## Knowledge Organisers



At South Hill, we have created ‘Knowledge Organisers’ to help pupils and parents to know what the children will be learning in each of our Foundation subjects. These contain essential vocabulary and facts for each topic.

Please see ‘Knowledge Organisers’ attached for Year 4 for the autumn term, which will also be in pupil’s books and on working walls in school.



## YEAR 2 SCIENCE – USES OF EVERYDAY MATERIALS

## KNOWLEDGE ORGANISER



**What have we learnt in this topic before, what we will learn this year and what will we learn next?**

**In Year 1 we learnt in our topic -Everyday Materials**

- to distinguish between an object and the material from which it is made
- to identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock
- to describe the simple physical properties of a variety of everyday materials
- to compare and group together a variety of everyday materials on the basis of their simple physical properties

**In Year 2 we will learn in our topic – Uses of everyday materials (materials for different uses)**

- to identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses
- to find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching

**In Year 4, we will develop this further in our topic - States of matter**

- to compare and group materials together, according to whether they are solids, liquids or gases
- to 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).

This subject is developed further in Year 6.

### PROPERTIES OF MATERIALS

All materials have **different properties** which make them good for **different jobs**. Here are some **properties of everyday materials**:

<b>hard</b> not easily broken or ground 	<b>squashy</b> easily crushed or squashed 	<b>smooth</b> an even and regular surface 
<b>absorbent</b> able to soak up liquid 	<b>bumpy</b> uneven, raised patches 	<b>opaque</b> cannot be seen through 
<b>dull</b> lacking shine or brightness 	<b>brittle</b> hard, but may break easily 	<b>translucent</b> allowing some light to pass through 
<b>rigid</b> unable to be bent or forced out of shape 	<b>transparent</b> can be seen through 	<b>soft</b> not firm to the touch 
<b>flexible</b> able to bend 	<b>rough</b> uneven, irregular surface 	<b>waterproof</b> repels water and liquids 
<b>elastic</b> springs back once stretched 	<b>shiny</b> reflects light, smooth surface 	<b>conductor</b> lets heat, electricity or sound to pass through it 

### USES OF EVERY DAY MATERIALS

Windows are made out of **glass**.

This is a good material to use as **glass** is:

- transparent** so it lets light through.
- hard** so it stops people or objects getting in
- waterproof** so it keeps the rain out



Raincoats are made out of **plastic covered fabric**.



This is a good material to use as **plastic** is:

- waterproof** so it keeps you dry in the rain

and **fabric** is:

- flexible** so it can wrap around your body
- soft** so it is comfortable to wear
- warm**

Tea towels are made out of **fabric**. This is a good material to use to dry dishes as it is:

- absorbent** so it soaks up liquid



### FOCUS SCIENTIST – JOHN MCADAM – BUILDING ROADS



John McAdam was a Scottish inventor who was unhappy with the conditions of roads so decided to make them better. He decided to grind up big stones and then cover them with a layer of smaller stones (gravel), creating a hard road which was easier to ride on. It took him 30 years but he managed to improve all the roads in the UK and soon other countries followed his design for their roads. Later, people added tar on top. Tar is a sticky material when it is very hot but sets hard to make a **smooth, hard road**. This is called 'Tarmac'. It is still used today.

#### Key Vocabulary

- hard    squashy    smooth    absorbent    bumpy    opaque    dull    brittle    translucent    rigid    transparent    soft    flexible    rock  
rough    waterproof    elastic    shiny    stretch    squash    twist    bend    wood    metal    plastic    glass    brick    paper

### HOW THE SHAPES OF SOLID MATERIALS CAN BE CHANGED

Some solid materials can be changed by:

- Stretching**
- Squashing**
- Twisting**
- Bending**



It all depends on their properties.

## YEAR 2 HISTORY — GREAT FIRE OF LONDON

**What knowledge have we learnt before, what we will learn this year and what will come after?**

In Year 1, the children learnt about the lives of some very significant individuals from Christopher Columbus to Neil Armstrong, Understanding why they are important and what they achieved.

**The Lives of significant individuals**  
 Christopher Columbus and Neil Armstrong  
 1451 – 1506 AD  
 1930 – 2012 AD

In Year 2, the children will learn about the Great Fire of London from the importance of Samuel Pepys diary to why the fire burned for so long and quickly.

- The Great Fire of London**  
1666 AD

Within the same century, EVFS also learned about **Bonfire Night** and the significance of this and why we still 'celebrate' Bonfire Night today.

Moving forward to 1836, Year 1 already learnt about how homes were different in 1836 compared to today. Why did the houses change? What was significant about this?

- Changes within living memory**  
Houses and Homes in the past.  
1836 AD – Present.

**ENRICHING THE CURRICULUM**

To bring this topic to life, the children will have a visit from the Hertfordshire Fire and Rescue team about fire safety. The children will explore the equipment they use to fight fires and compare this to the resources available in 1666.



**TIMELINE**

Children will learn that the Great Fire of London happened one year after the Great Plague. Also, the Great Fire of London started on 2nd September 1666 and lasted for 5 days.



Children will learn about the events leading up to the Great Fire of London happening.



The fire starts at Thomas Farriner's bakery on Pudding lane, early Sunday morning.



Houses are pulled down in an attempt to stop the fire spreading, on Sunday evening.



The fire spreads very close to the Tower of London.



St Paul's cathedral is destroyed by the fire.





Not until the Thursday 6<sup>th</sup> September 1666 the fire is under control.

**Samuel Pepy's diary**




He lived in London at the time of the Great Fire and wrote all about it in his diary. His eyewitness account is the source of our knowledge about the Great Fire and other key events in English history such as the Plague and King Charles II coronation.



**FIRE BRIGADE – PAST AND PRESENT**

<p>Fire Brigade established in 1666</p>  <ul style="list-style-type: none"> <li>King Charles established the fire brigade</li> <li>Water engine were designed to help with major fires.</li> <li>Ordinary people helped with the fire, gathering water from the Thames.</li> </ul>	<p>Fire brigade today</p>  <ul style="list-style-type: none"> <li>Powerful engine that contains lots of water.</li> <li>Ladder attached to reach heights</li> <li>Fire fighters have oxygen to use to help put the fires out.</li> </ul>
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**Key people** **Key questions and answers**

<p><b>King Charles II</b></p>  <p>Charles II was the King of England in 1666. After the fire, he made a decree that houses must be built further apart and built from stone not timber.</p>	<p><b>Sir Christopher Wren</b></p>  <p>Sir Christopher Wren redesigned London after the Great Fire.</p>	<p><b>Thomas Farriner</b></p>  <p>Owner of the bakery where the fire started. An ember from one of Thomas' bakery ovens ignited some nearby firewood. The fire quickly spread around the room and to nearby buildings.</p>
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<b>When and where did the fire start?</b>	The fire started on Sunday 2nd September 1666 in Thomas Farriner's bakery on Pudding Lane. It lasted for 5 days.
<b>Why did the fire spread so quickly?</b>	The weather was hot and it hadn't rained for months. Houses in London were mainly built from wood and straw. The houses were very close together, so fire could easily spread. Strong winds were blowing, which helped the flames to spread.
<b>How did people try to put the fire out?</b>	There was no fire brigade so ordinary people used leather buckets and water squirts to try to put the fire out but these did not work. Later in the week, King Charles II ordered buildings to be pulled down to stop the flames from spreading.
<b>How and when was the fire put out?</b>	By Thursday 6th September, the wind had died down so people were able to put out the flames by using water from the Thames.
<b>What happened after the fire?</b>	Many left London to live elsewhere and some slept in tents. An organised fire brigade was established and water engines were designed that gave a continuous stream of water when pumped.

**Key Vocabulary**

Past – Present – Then – Now – Significant – Even – Famous – Compare – Similar – Source – Historian – Samuel Pepys – King Charles II – Pudding Lane



## YEAR 2 HISTORY – FLORENCE NIGHTINGALE AND MARY SEACOLE KNOWLEDGE ORGANISER

**What knowledge have we learnt before, what we will learn this year and what will come after?**

In Year 1, the children will begin by developing their understanding of their own recent history. They will learn facts about what life was like in the Victorian Era.

- Events beyond living memory: The Victorians 1837 to 1901 AD

In Year 2, the children will learn how significant people from history have affected our lives for the better. They will remain in the Victorian Era to discover Florence Nightingale and then take a look at another significant person from that era by learning about Mary Seacole.

- Significant individuals: Florence Nightingale (1820-1910) and Mary Seacole (1805-1881) AD

In Year 3, the children will move on to learning about a significant person from another country, Nelson Mandela.

- The Lives of significant individuals: Nelson Mandela (1918 – 2013) AD

### ENRICHING THE CURRICULUM



For children to appreciate the impact that Florence Nightingale and Mary Seacole had on modern day health care a nurse will visit the classes and share with the children what it is like to be a nurse today.

### Hospitals



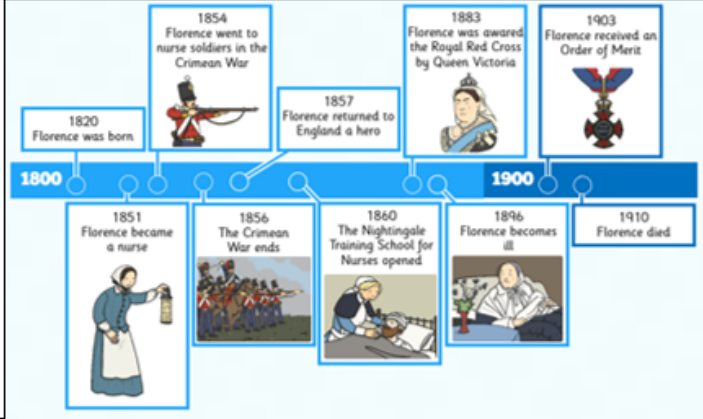
Hospitals, especially those where battles were taking place, were dirty, overcrowded and only men were allowed in. There were often rats and no-one cleaned. Many people died because of infections due to the poor conditions.

Florence Nightingale and Mary Seacole showed the world the importance of hygiene in hospitals and the benefits of nutritious food for patients.



Now hospitals are clean and patients are well fed and looked after.

### Florence Nightingale - Timeline



Florence had to defy doctors orders to care for the sick in the hospital.

She cleaned the rooms, fed the soldiers and tended to their wounds.

She became known as the Lady with the Lamp because she visited the soldiers at night as well as during the day.

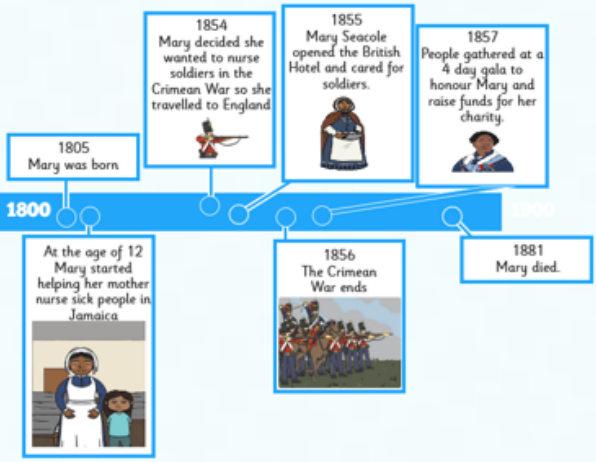
### Mary Seacole - Timeline



Mary Seacole defied social expectations and fought against prejudice to save the lives of many soldiers during the Crimean War.

She was a brave lady who entered the battlefield to ensure soldiers from both sides received the treatment they needed.

She was known as Mother Seacole.



### Crimean War



The Crimean War was fought between 1853 and 1856. It was fought in the Crimea, an area in the south of Russia at the time (now part of Ukraine). On one side were Britain, France, and Turkey, and on the other side was Russia. Florence Nightingale and Mary Seacole went to the Crimea to take care of the soldiers. They introduced modern nursing practices and saved many lives.

### Key Vocabulary

- Nurse hospital Crimea Scutari Turkey conditions injury prejudice Victorian soldier lamp charity hygiene

## YEAR 2 DT – EMEREGENCY VEHICLES

### KNOWLEDGE ORGANISER



What have we learnt before in DT and what we will learn next?

#### HISTORY OF EMEREGENCY VEHICLES

In Year 1, through our topic 'Houses and Homes' we designed and made our own house.

Throughout history, emergency vehicles have been used to help and rescue individuals from dangerous situations. From using a horse and cart as one of the first modes of transport to the first invention of a motor vehicle, emergency vehicles have been used as they are quick and can reduce the waiting time for people.



In Year 2, through our topic 'Construction/Use of Materials' we designed and made our own emergency vehicles.



The invention of the first motor vehicle was in 1886. This was created by Carl Benz whose cars are still used today.



There are many different types of vehicles nowadays, which can be used for many different purposes, emergency services still being one of those reasons.

#### TYPES OF EMEREGENCY VEHICLES



Police car



Ambulance



Fire engine



Helicopter



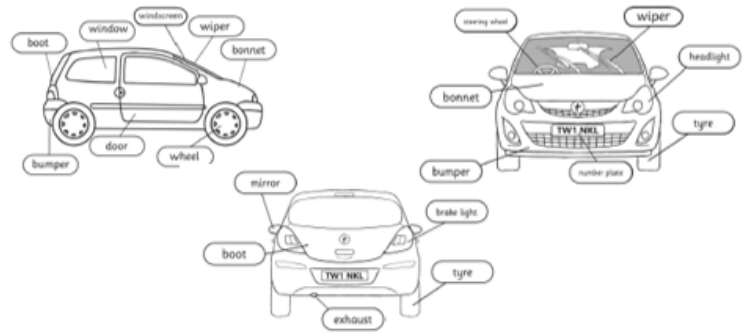
Motorbike

#### Key Vocabulary

Logo/ design	movable	rotate	purpose	axle	chassis	appealing	design criteria	improve
strong	wheel	product	evaluate	assemble	mechanism	cut	fix	function

#### PARTS OF A VEHICLE

The brakes, windshield, engine, wheels and battery all make a car go and help to safely get the passengers where they need to be. The wheels on the car move at the same time and speed because each pair of wheels is attached to a pole called an axle. Real vehicles, such as cars and vans, also have axles. This is still how cars work today.



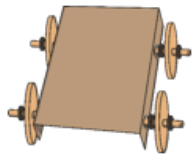
#### TYPES OF AXLES AND ATTACHING THE AXLE

On a vehicle the axles need to be fixed on securely to ensure the wheels do not move from side to side.

When making our own toy car, wheels can be secured with a washer on either side. To prevent the wheels from moving too much from side to side a washer can be put in place to limit the movement and help the car run smoothly.



An axle needs to be attached to the chassis. A chassis is the frame upon which the rest of the vehicle is built.



To make our own vehicle we look at the axle and how this is attached to the car. When attaching the wheels and axles to a cereal box. One set of wheels (e.g. front wheels) will have a fixed axle and wheels will be free and the other set (back wheels) will have a free axle with the wheels fixed.

## YEAR 2 DT – MOVING PICTURES

**What have we learnt before in DT and what we will learn next?**


In Year 1, through our topic 'Victorians' we designed and made our own pop up toy, using scissors to cut our materials.

In Year 2, through our topic 'Who are the heroes?' we are looking at moving pictures and creating our own using levers, sliders and wheels.





In Year 3, this knowledge will be extended through the implementation of using different levers and linkages.

**WHERE DO WE FIND MOVING PICTURES?**


Some children's picture books contain moving pictures. These are used to create interest, enjoyment and engagement.



The pictures can move in different directions.


-  in a straight line
-  in a straight line, backwards and forwards
-  round and round
-  in a curve

**LEVER MECHANISM**



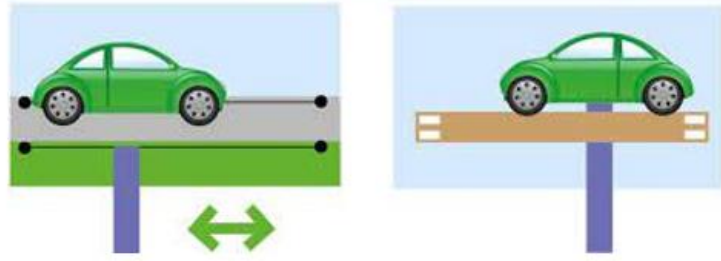
When we use a lever mechanism the picture moves in a curve. The lever pivots around the split pin. Levers can be different lengths and need to be measured carefully to create the desired outcome.

**WHEEL MECHANISM**



We use a wheel mechanism to move a series of pictures that are shown through a window. The pictures move in a circular motion. There can be more than one window.

**SLIDER MECHANISM**



When we use a slider mechanism the picture moves in a straight line. The slider can move horizontally or vertically which means the picture will move either left to right (and back again) or up and down. Just like levers, sliders can be different lengths and need to be measured carefully to create the desired outcome.

Key Vocabulary										
movable	vertical	horizontal	direction	curve	straight	mechanism	slider	lever		
wheel	product	evaluate	assemble	join	cut	fix	purpose	backwards	forwards	