

Year 2– Autumn Term

Zoom! Soar! Whizz!

Knowledge Organiser



## History Knowledge

### History of Bicycles

-Bicycles have been around for over 200 years. When they were first invented, they looked very different to how they look today.

-James Starley was an English inventor of bicycles who lived in Coventry in the 1800's. His company designed and created bicycles from their factory in Coventry and many Historians believe that he invented the first bicycle. The first bike he invented was called 'The Coventry'; this was quickly followed by the 'Ariel'. The Ariel had a large front wheel and a smaller back wheel. These types of bicycles became known as the 'Penny Farthings' because old English pennies were big and round and farthings were small and round, like the wheels on the bicycle.

-A 'safety bicycle' was a different design to the 'Penny Farthing'. These bikes had 2 wheels the same size which made them safer. A chain helped the wheels to turn and riders to be closer to the ground. Bicycles today use a similar design.

-Today electric bikes have been introduced to their regular designs. More people are using electric because they are easier to use than regular bicycles and they are cheaper than cars and also better for the environment.



Coventry Bicycle Designer:  
James Starley



The Ariel bicycle



The Rover Safety bicycle



Raleigh Electric bicycle

### History of Cars

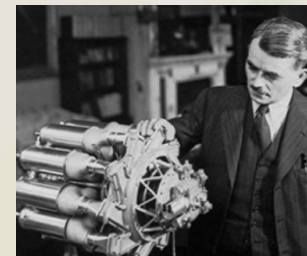
Cars, as a type of transport, have been around for over 300 years. Like bicycles, when they were first invented, they looked very different to how they look today. Historians believe the first car with an engine had 3 wheels and the engine was at the back. Coventry is famous for the manufacturing of cars. Lots of the early cars made in Coventry were built with 4 wheels and an engine at the front. Most didn't have roofs. After this some cars made in Coventry had a windshield, horn and steering wheel.

Today, there are lots of different types of cars made by lots of different manufacturers. Most modern cars have engines at the front, a boot to store items, a roof, glass windows, radios and automatic windows. There are also electric powered cars, which more people are using because they create less pollution so are better for the environment.

### Sir Frank Whittle

Frank Whittle was an engineer who was born in Coventry just over 100 years ago. He is famous for inventing the jet engine.

Jet engines are important for planes around the world because they help the planes to fly extremely fast.



### Vocabulary

**Invention** - Something new that has been created

**Local** - Relating to a particular area

**Compare** - Look at how something is similar or different

**Change** - How something becomes different over time

**Frank Whittle** - Coventry Inventor of the Jet Engine

**James Starley** - Coventry Inventor of a bicycle

**Evaluate** - Think about what is good and what can be improved

**Similar** - How parts of objects are the same

**Different** - How parts of objects are different

**Viewfinder** - Something that helps us to focus on a smaller part of an object or picture

**Design** - A plan of drawing before making

**Designer** - Someone who designs things before making them

**Pencil thickness** - The width of the line

**Wheel** - A circular object that moves on an axle

**Axle** - A rod passing through the centre of a wheel

**Movement** - Something moving

**Dowels** - Rods for joining materials

**Junior Hacksaw** - Small hand saw for sawing wood

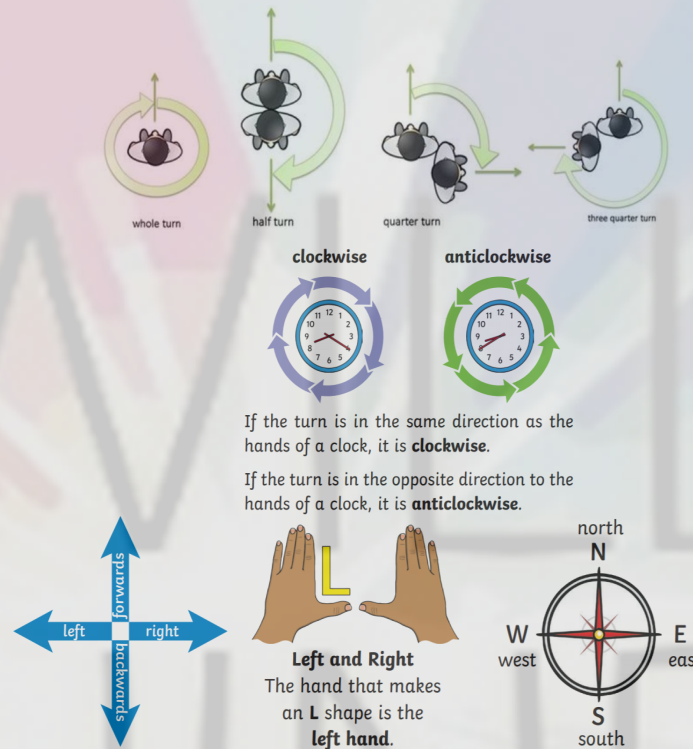
**Bench Hook** - A hook placed on tables to help wood become still when sawing

## Geography Knowledge

The countries of the United Kingdom and its surrounding seas and countries



### Position and Direction



### Vocabulary

**Atlas** - A book which contains maps of different places.

**Map** - A picture of an area of land

**United Kingdom** - The countries of England, Scotland, Northern Ireland and Wales make up the United Kingdom

**Location** - A place

**English Channel, North Sea, Atlantic Ocean, Irish Sea** - Seas surrounding the United Kingdom

**Directions** - How to get from one place to another

**Half turn, Quarter turn, 3 quarter turns** - Turning halfway round, Turning a quarter of the way round, Turning 3 quarters of the way round

**Clockwise** - A turn which moves in the same direction as a clock

**Anti-clockwise** - A turn which moves the other way to a clock

**Compass** - A tool for finding direction

**North, South, East, West** - The 4 main points of a compass. North is opposite South and East is opposite West. The clockwise order is: North, East, South, West.

### Flags of the countries in the United Kingdom and the Republic of Ireland

Each of the countries in the United Kingdom have their own flag. The England flag represents the cross (St. George) and represents the patron saint St. Andrew. The Irish flag represents the Irish patron saint St. Patrick. The Wales flag and Northern Ireland flags make up the flag of the United Kingdom. This flag is called the 'Union Jack' was created, Wales was already united with England.



Wales



Republic of Ireland



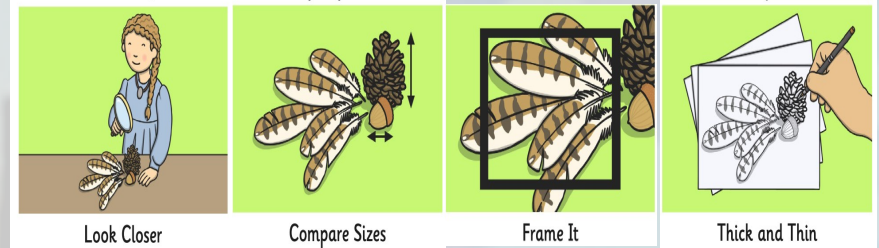
United Kingdom

## Art Knowledge

James Starley designed and invented bicycles. A designer plans something before it is made, looking at other examples to get ideas. It is a good idea to evaluate designs because it helps you think about what is good and what can be improved. Sketching current designs help us to look at them and understand them in more detail.

When sketching an object, it is important to:

1. Look closer at the object you are sketching
2. Compare the sizes of the different parts
3. Frame it with a viewfinder— A viewfinder is useful because it helps you to look at the part of an object in more detail
4. Use thick and thin lines with a pencil to improve the sketch's detail.



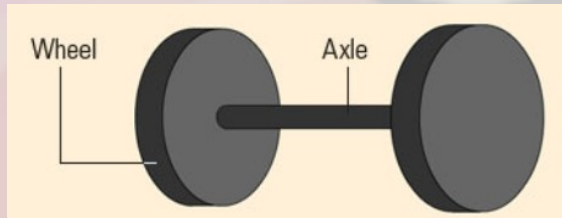
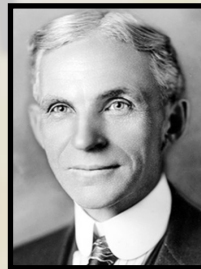
## Design and Technology Knowledge

### Evaluation

Like in Art, lots of DT manufacturers evaluate current models before they design their own. Henry Ford is a famous car designer. He set up the 'Ford Motor Company' and developed a system where each worker was responsible for one small part of the car. This helped all parts of the car to work better.

Today, there are lots of different types of cars. They are able to move because they have engines which, when turned on, help to turn axles. The axles then turn the wheels. Toy cars haven't got engines and many have to be pushed. Axles still help the wheels to turn. All moving cars need axles and wheels.

American Car Designer  
Henry Ford



### Design and Make

There are lots of different materials that can be joined together to make a moving car.

Axes and wheels need to be strong enough to hold the other materials. Wooden dowels are good materials to use for the axles in a toy car because they are stronger than paper.

A junior hacksaw can be used to cut wood. This is called sawing. When sawing, bench hooks help us to be safe.



Junior Hacksaw



Bench Hook