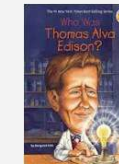




# Y4-Incredible Inventions

## Why are inventions important?



### Key inventions



1877

Thomas Edison



1879

Thomas Edison

Joseph Swan



1990

Tim Berners-Lee



### Historical enquiry

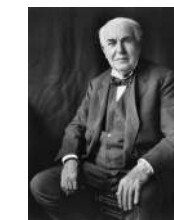
Joseph Swan

1878 Swan took the oxygen out of the bulb to filament from burning out. This is called a vacuum. His filament did not glow for long.



Thomas Edison

1882 Edison patented an improved filament that glowed for longer using less

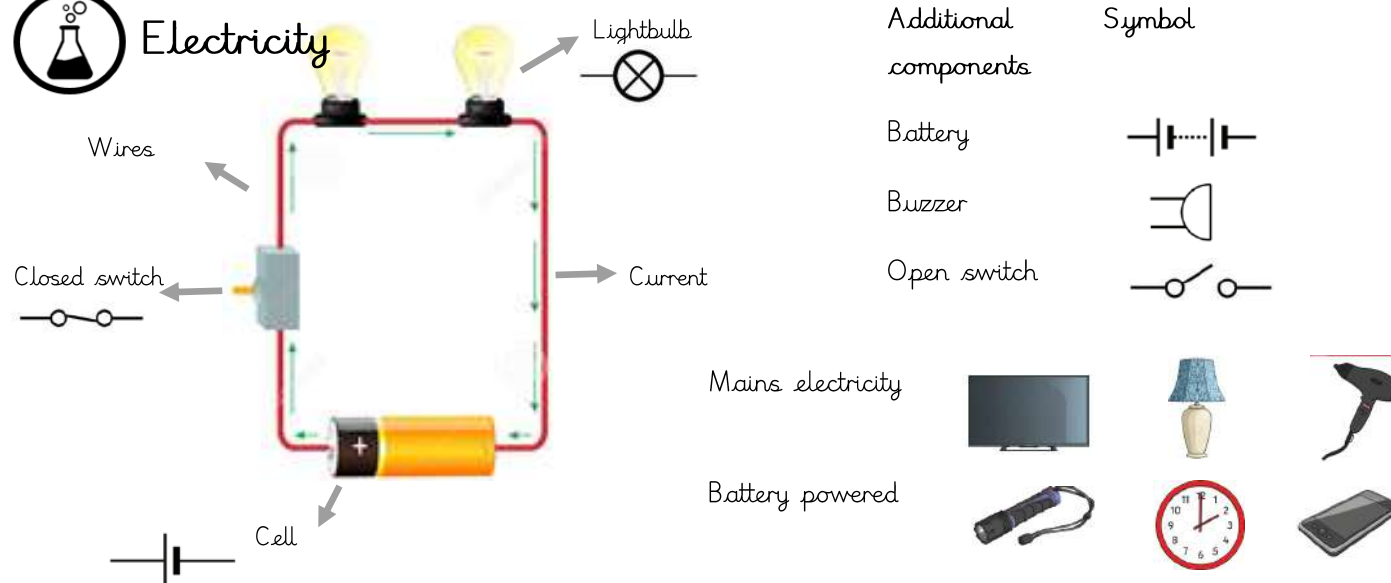


Lewis Latimer

1881 Latimer patented an improved carbon filament that lasted longer

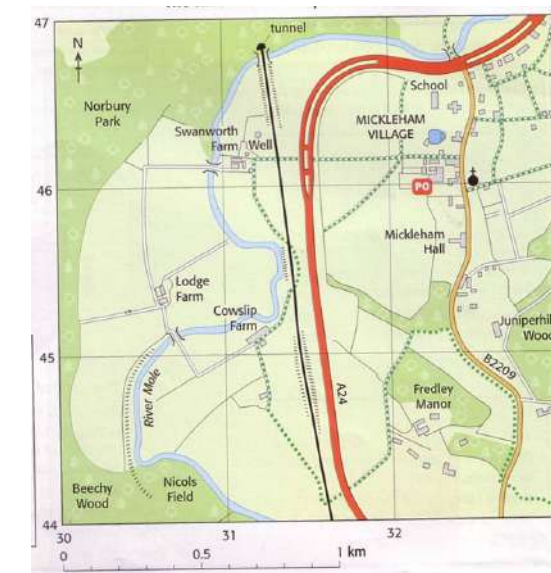


### Electricity

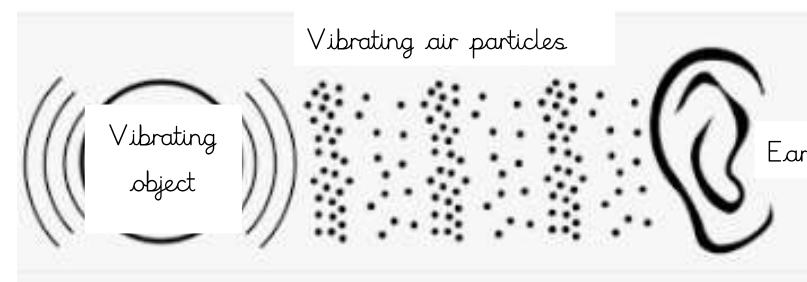


### 4-figure grid references

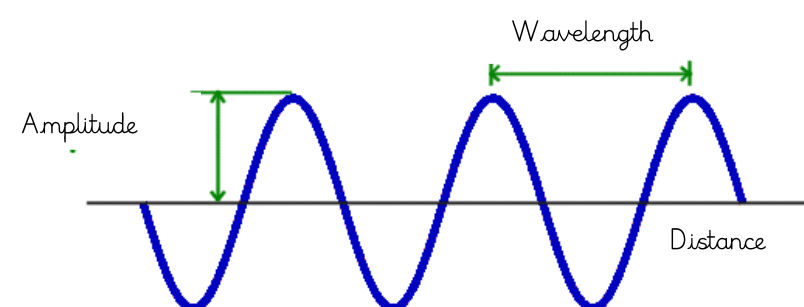
A grid reference tells you where something is on a map. There are two parts to a grid reference: The 1st letter or number tells you how far across the map something is. The 2nd letter or number tells you how far up the map something is.



### Sound

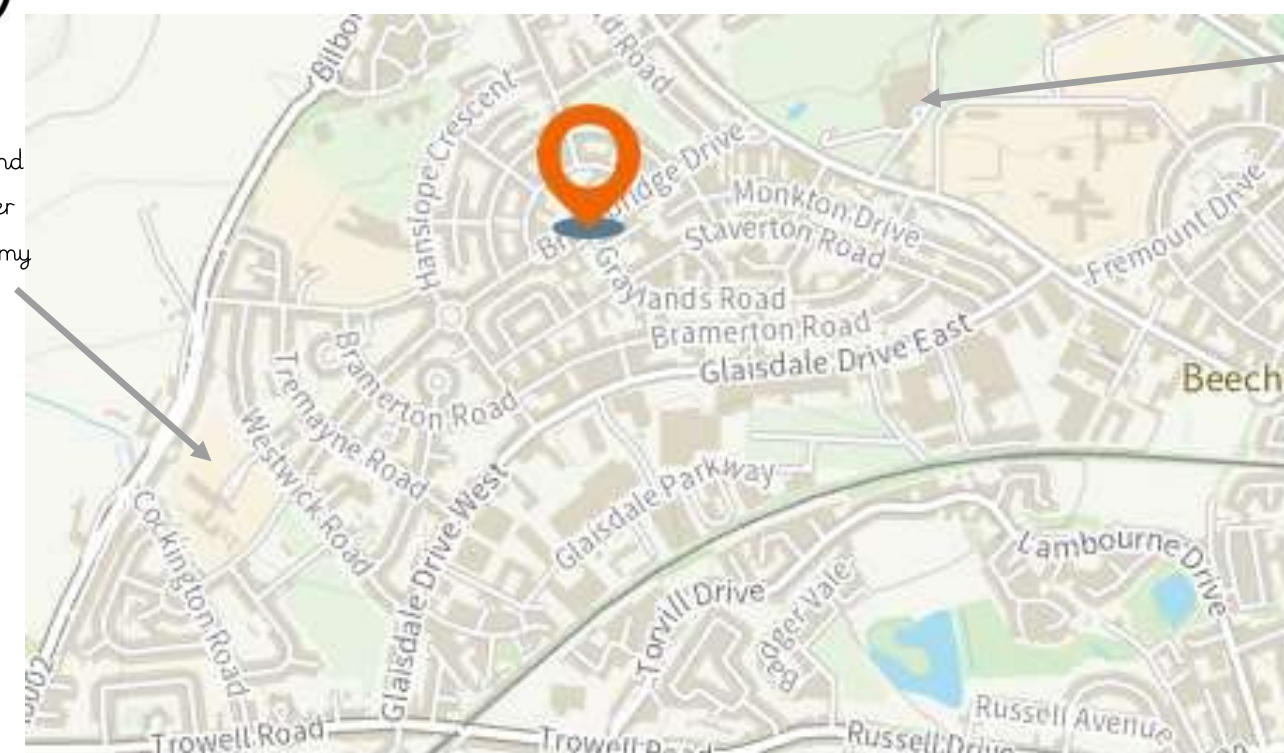


| Sound vocabulary | Definition                                   |
|------------------|----------------------------------------------|
| vibration        | A quick movement back and forth.             |
| particles        | Small parts of a solid, liquid or gas.       |
| wavelength       | The length of the smallest unit of sound.    |
| sound wave       | The total length of the whole unit of sound. |
| absorb sound     | To take in sound energy.                     |



### Maps

Portland Spencer Academy



Harvey Hadden Sports Village

Map of Bilborough 2022

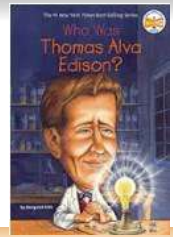
The books we'll use to support our inventions topic:

**Electrigrail by Jo Cotterill**  
Holly Sparkes is just your average 12-year-old, that is, until she's hit by a bolt of lightning. Now Holly is EXTRAordinary. Like a human battery Holly can generate a massive amount of electricity in seconds, which could come in handy if she's ever going to solve the mystery of her best friend's disappearance. Because when you're dealing with the likes of Professor Macavity and her mysterious CyberSky corporation, you need all the help you can get!



**Who was Thomas Ava Edison? By Margaret Frith**

One day in 1882, Thomas Edison flipped a switch that lit up lower Manhattan with incandescent light and changed the way people live ever after. The electric light bulb was only one of thousands of Edison's inventions, which include the phonograph and the kinetoscope, an early precursor to the movie camera. As a boy, observing a robin catch a worm and then take flight, he fed a playmate a mixture of worms and water to see if she could fly!



**See inside intentions by Alex Firth**

This title tells the wonderful, mysterious and often funny stories behind famous inventions. Flaps reveal lovingly detailed artwork to show the hidden workings inside inventions. Carefully researched text explains the differences between discovery, invention and innovation, and how these three aspects unite.



Key vocabulary

|                                                                                                  |                                                                                               |                                                                                                  |                                                                                        |
|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| energy<br>    | This is power and the ability to do work. It is never lost but converted into something else. | insulator<br> | A material which <b>cannot</b> easily allow electricity, sound, light or heat through. |
| current<br>   | The flow of an electrical charge.                                                             | amplitude<br> | The <i>size</i> of the vibration—louder noises have a larger amplitude.                |
| conductor<br> | A material which <b>can</b> carry electric sound, light or heat through it.                   | pitch<br>     | The measure of how high or low a sound is. Higher pitch noises vibrate quicker.        |

Key skills we'll be building on...



We will be combining our design and technology and music skills to create a circuit as part of an invention.



In our computing learning, we will be looking at the creation of the internet and analysing the impact of it on our lives today.



During our science lessons, we will be investigating how electricity impacts on our daily lives and how sound travels around us. We will be investigating how best to protect our ears from sound.



During our P.E lessons, we will be mastering our movement and strategy skills to compete in games of rounders and basketball.



Geography skills will be embedded as we create our own field work and improve our maps skills.



Using a historical enquiry, we will decide who deserves the credit regarding the invention of the lightbulb. We will validate our ideas using reliable sources.

The questions and outcomes we'll cover are:

What gives us power?

To create a labelled diagram of a series circuit.



Who was Thomas Edison?

To create a historical timeline of Edison's life.



Who invented the lightbulb?

To write a biography about Thomas Edison.



What impact did Edison have in our lives?

To create a circuit for a purpose.



How does sound travel?

To create a graphic organizer to show how vibrations reach the ear.



What happened to Electrigrail?

To write a narrative.



What rhythm and mood can I create in poetry?

To write a Haiku poem about sound.



What vibration sounds can we hear in our instruments?

To create our own instruments.



Why not try this at home?



Create your own invention which uses the lightbulb. Maybe you could make your own shadow puppet?



Find out all about some of the most amazing inventions that have changed our world, take the quiz and see if you can make your own inventions.



Use your art skills to produce a sketch or painting of the inside of a lightbulb.

