

# History Knowledge Organiser – Inventions that Changed the World

Timeline									
3500 BC	3000 BC	2500 BC	872 AD	1781	1827	1876	1903	1991	2007
Wheel (Meopotamia)	Candle (Egypt)	Ink (Egypt/Middle East)	Hospitals (Egypt)	Steam engine (UK)	Camera (France)	Telephone (USA)	Aero plane (USA)	World Wide Web (UK)	Apple iPhone (USA)

Key Vocabulary	
<b>engineer</b>	a person who designs and builds complex products, machines, systems, or structures.
<b>evolve</b>	to develop gradually; especially to change from something simple to something more complicated.
<b>innovation</b>	a new method, idea or product.
<b>invention</b>	something that has never been made before.
<b>inventor</b>	someone who has invented something or whose job is to invent things.
<b>printing press</b>	a machine that prints books, newspapers etc.
<b>steam engine</b>	A steam engine is an engine which uses steam from boiling water to make it move.
<b>The Industrial Revolution</b>	the period of time during which work began to be done more by machines in factories than by hand at home.

## DID YOU KNOW?

Glasses 'reading stones' were invented 500 years ago by Ibn al-Haytham in Iraq.

### General Knowledge

Invention is part of our everyday vocabulary.

It would be very difficult to live even a single minute without the benefit of some invention. Virtually everything we use had to be invented. For instance, if you are in a room right now, think of the thousands of inventions that surround you — from the windows to the floors to the furniture to the device that heats or cools the room.

Many inventions are developed and adapted from inventions that came before them.

Behind every invention is a person who saw a problem or an opportunity and invented a solution or a new device.

Inventions have transformed the way that we live our daily lives – from the simple paperclip to the latest mobile device. By learning about the important inventions that have changed our world, we can discover how we could become great inventors too!

### Famous Figures

**Johannes Gutenberg**  
Invented the printing press in 1450.

**James Watt**  
Invented the steam engine in 1781.

**Joseph Niépce**  
Invented the camera in 1827.

**Isambard Kingdom Brunel**  
Famous engineer who designed and constructed railway lines, bridge, tunnels and docks around the country.

**Alexander Graham Bell**  
Invented the telephone in 1876.

**Thomas Edison**  
Invented the modern lightbulb in 1879.

**The Wright Brothers**  
Flew the first motored and manned aeroplane in 1903.

**Tim Berners Lee**  
Invented the World Wide Web in 1991.

**Steve Jobs**  
Designed the iPod in 2001. He also designed the iPhone and iPad.



# THE RAILWAYS



Timeline								
1500	1750	1812	1825	1850	1863	1879	1912	1968
Railways are used in mines to move coal and minerals	Wooden and iron rails pulled by horses to move coal to harbours	Invention of the steam train	The first railroad opens in Britain	Luxury steam trains with soft seats, sleeping and dining	The Metropolitan is opened as the first underground railway	The first electric train presented in Berlin (Germany)	First diesel locomotive runs in Switzerland	The first high speed trains run in Japan

## Key Vocabulary

diesel	These locomotives burn diesel as fuel and were far more powerful than previous steam locomotives.
electric	Powered from electricity which they collect from overhead cables.
freight	Incredibly long trains (sometimes miles), often with more than one locomotive used to transport goods.
high-speed	Initially produced in Japan but now international, the French TGV held the world record for travelling 357mph!
Industrial Revolution	Factories start up and minerals are mined with people flocking to cities for work.
locomotive	Engines which provide the power to pull a whole train made up of carriages or wagons.
Mallard	Fastest steam train built by Sir Nigel Gresley, which had a stream-lined casing setting a world record of 126mph.
Metropolitan	The first underground railway created beneath the streets of London. Paris and then New York opened shortly after.
Rainhill Trials	The Liverpool and Manchester railway competition to find the best locomotive, won by Stephenson's Rocket.
steam	Powered by burning coal. Steam was fed into cylinders to move long rods (pistons) and make the wheels turn.

## DID YOU KNOW?

Mountain railways use special toothed rails (racks) and a cog which mesh together to slowly pull the train up a mountain. No power goes to the wheels as they are only used to guide the train on the track.

## GENERAL KNOWLEDGE

### The Need for Effective Transportation

The increased use of factories and need for raw materials (due to the industrial revolution between 1750s - 1850s), along with an increase in population (and need for food) meant Britain needed a way to transport larger amounts, quicker than ever before. Roads were not good enough and canals were a slow form of transportation.

### Railway Mania

After the invention of the steam engine, railways really started to take off. Stephenson's Rocket was the first to transport passengers in 1830 from Manchester to Liverpool and by 1848 over 7000km of railway track had been built connecting London to most major cities.

### Positive Effects

Seaside resorts developed making cheap day trips possible, the delivery of post became faster, factory owners could get raw materials and products to market faster, national newspapers developed, suburbs of towns developed as richer people moved there to travel to work by train, it created more jobs, it allowed children to travel into cities to attend schools and travel became faster and cheaper generally.

### Negative Effects

Pollution increased, canals and stage coach companies could not compete with locomotives and coaching inns lost profits.

## FAMOUS FIGURES

### Thomas Savery (1650-1715)

Thomas Savery was an English inventor and engineer, born in England. He invented the first commercially used steam powered device, a steam pump which is often referred to as an "engine".

### James Watt (1736-1819)

Scottish engineer and inventor whose steam engine contributed substantially to the Industrial Revolution.

### George Stephenson (1781-1848)

He worked on the development of railway tracks and bridge building and also designed the 'Rocket' which won the Rainhill Trials in 1829.

### Isambard Kingdom Brunel (1806-1859)

famous engineer, Isambard Kingdom Brunel, played a key role in Britain's industrial revolution, designing and constructing railway lines, bridges, tunnels and docks around the country, as well as providing massive advances in naval architecture.



# STONE AGE TO IRON AGE



## Timeline

13,000 B.C.	4500-3500 B.C.	2300 B.C.	1800 B.C.	1200-800 B.C.	800-700 B.C.	700-500 B.C.	100 B.C.
People make cave paintings	Farming starts to begin to spread and pottery is made	Start of the Bronze Age	The first copper mines are dug	Metal tools are made and used	Start of the Iron Age / The first hill forts are made	Iron is more commonly being used	Coins are made and used for the first time / Iron Age end with Romans in 43 AD

## Key Vocabulary

### The Stone Age

cave paintings	Artwork in caves dating back to the Ice Age.
jewellery	Late Stone Age people made it from shells, teeth and bones.
woolly mammoth	A now extinct animal roaming earth during the Ice Age.
nomadic	Early Stone Age people followed food sources and travelled.
Skara Brae	A stone-built Neolithic settlement in Scotland.

### The Bronze Age

foundry	A place of work where metal castings are made.
jewellery	Wearing bronze items was a way to show how rich you were.
Stonehenge	A mysterious set of enormous stones built 3000 B.C. - 1500 B.C.
roundhouses	A circular house with a conical roof and wattle and daub walls.
weapons	Combining copper and tin to make hard weapons and armour.

### The Iron Age

Celts	NW Europeans who used iron from 600 B.C. - 43 A.D.
hillforts	Small towns built on a hilltop surrounded by banks of soil and wooden walls to keep out enemies.
smithing	Blacksmiths would heat iron and create weapons / tools.
weapons	Swords, daggers and arrowheads were made of iron.

## DID YOU KNOW?

Famous Bronze Age civilizations included the Shang Dynasty, Indus Valley, Ancient Egyptians and the Sumerians.

### Stone Age

*Palaeolithic to 10,000 BCE (end of the Ice Age) / Mesolithic to 4000 BCE / Neolithic to 2300 BCE*

Early Stone Age Man was a hunter-gatherer, travelling around following food sources, setting up camps. Some lived in caves, although not many as this was dangerous. Scientists believe they had fires but used naturally occurring fire to bring to a campfire (e.g. a lightning strike) rather than making one by themselves. By the time it was the Neolithic Age, people stopped travelling and settled, becoming farmers and domesticating sheep, cattle and pigs. They learned how to soften leather to make warm, comfortable clothes and they used wool from sheep to spin, thread and weave into clothes. They built homes from wooden planks and covered it with wattle and daub. The roof was thatched using reeds. During this period, they also made clay pots for cooking, serving food and storing water. Huge tombs were made with dead remains.

### Bronze Age

*2300 BCE to 800 BCE*

The mining of metals helped transform the world's use of trade, weaponry pottery and jewellery. The creation of bronze, gold and copper items around this time signalled the end of the Stone Age and the start of the Bronze Age. These improved tools led to developments in farming and therefore larger productions able to feed growing cities. The invention of the wheel meant that animal drawn vehicles could drive along tracks and roads. The potter's wheel and textile production meant that better pottery and clothing could be produced.

### Iron Age

*800 BCE to 43 CE*

The Iron Age is a period of history when iron became the preferred metal of choice for making tools which is seen to have ended with the spread of the Roman Empire from 43 A.D. Iron was more readily available than bronze and was much easier to work with. This led to further improvements in farming and diet. During this time the Celts lived as an advanced Iron Age society. There were three main branches of Celts in Europe - Brythonic, Gaulic and Gaelic. Brythonic Celts (Britons) settled in England. Some people can still speak Celtic languages such as Welsh and Gaelic. Most Iron Age people worked and lived on small farms and their lives were governed by the changing of the seasons.