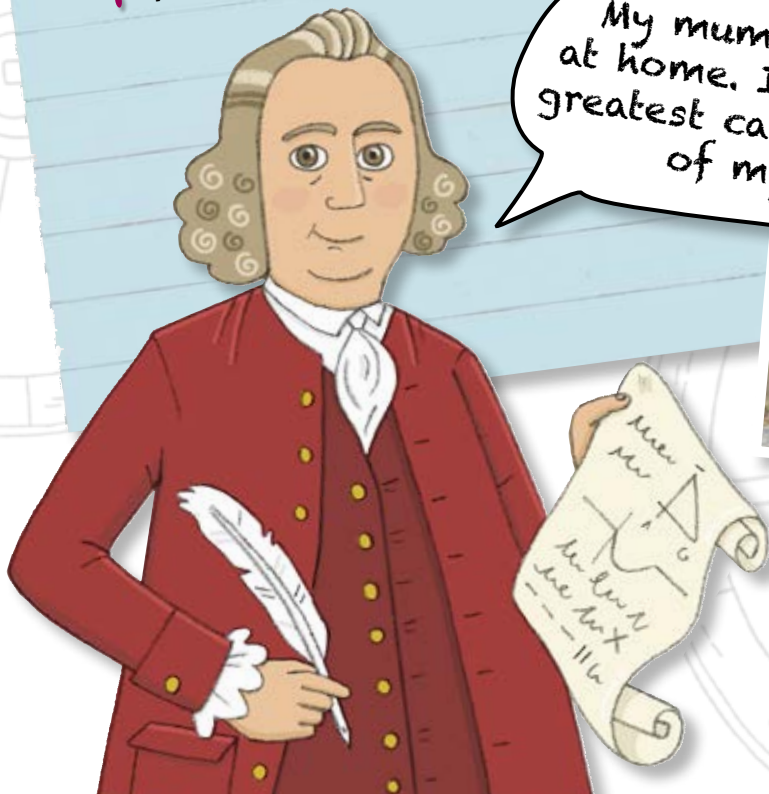


1 James Brindley (1716 - 1772)

These notes are designed to help you with homework and other projects. It will help you to find out:

- + About James Brindley's early life
- + How he became a famous canal engineer
- + His ideas and inventions.



My mum taught me at home. I became the greatest canal engineer of my day!

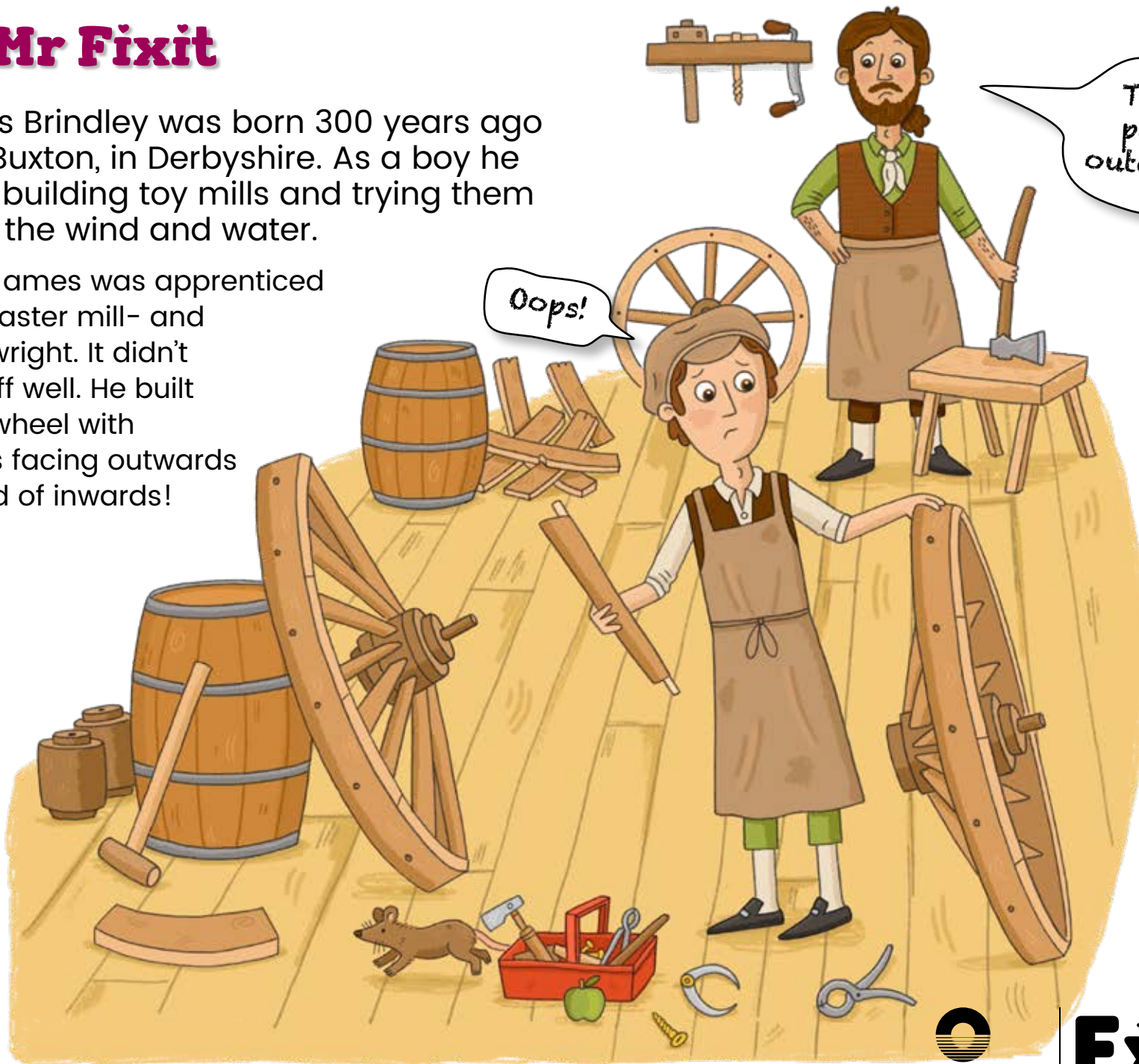


You can see this statue of James Brindley at Coventry Basin

Mr Fixit

James Brindley was born 300 years ago near Buxton, in Derbyshire. As a boy he loved building toy mills and trying them out in the wind and water.

Later, James was apprenticed to a master mill- and wheelwright. It didn't start off well. He built a cartwheel with spokes facing outwards instead of inwards!



The spokes should point inwards, not outwards, you banana!

Gradually, James became known as someone who could fix any machinery. When his master died he moved to Leek in Staffordshire, to start a new business there.

The Bridgewater Canal

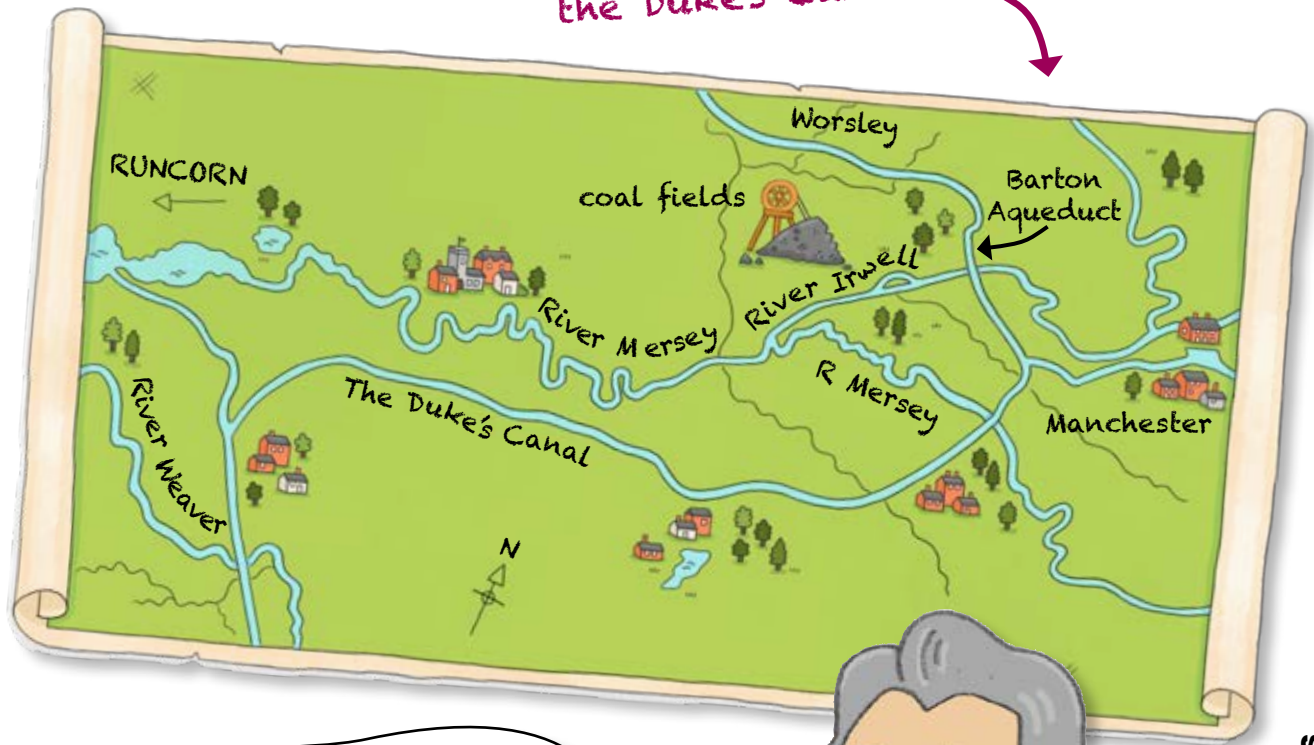
James's business grew. He worked on all kinds of machinery driven by water, wind and steam. The Duke of Bridgewater, who owned coal mines near Manchester, heard about him.



Coal was used to heat everything from houses to furnaces - so everyone wanted cheap coal.

Coal from the duke's mines was delivered by barge. Greedy river companies put the charges up for using the rivers, so the duke wanted a quicker and cheaper way to deliver his coal.

The duke had seen canals in France. He decided that canals would be a better way to transport his coal. He employed James to help build a canal from his mines to Manchester.



The Bridgewater Canal was first called the Duke's Canal

When my coal was delivered by canal, the price fell immediately. Everyone wanted my cheap coal - and I became mega-rich!

The Duke of Bridgewater
(1736-1803)



Problem solving

Nobody had built a canal in Britain before. So James had to solve big problems such as how to keep water in the canal, and how to manage changes in levels between rivers and the canal.

James planned the route of the Bridgewater Canal to go round hills rather than through them. Tunnelling through rock was very expensive.



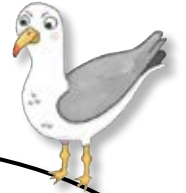
He invented a way of lining the canal with clay trodden down hard (called puddling) to prevent water escaping.



Runcorn Locks in the 1920s

I built a flight of ten locks at Runcorn to lower boats down to the level of the River Mersey

I built this aqueduct to carry the Bridgewater Canal over the River Irwell at Barton



Barton Aqueduct in Victorian times



5 Brindley, a 'must-have' man

The Bridgewater Canal was so successful that other businessmen wanted canals too. They asked James to help them.

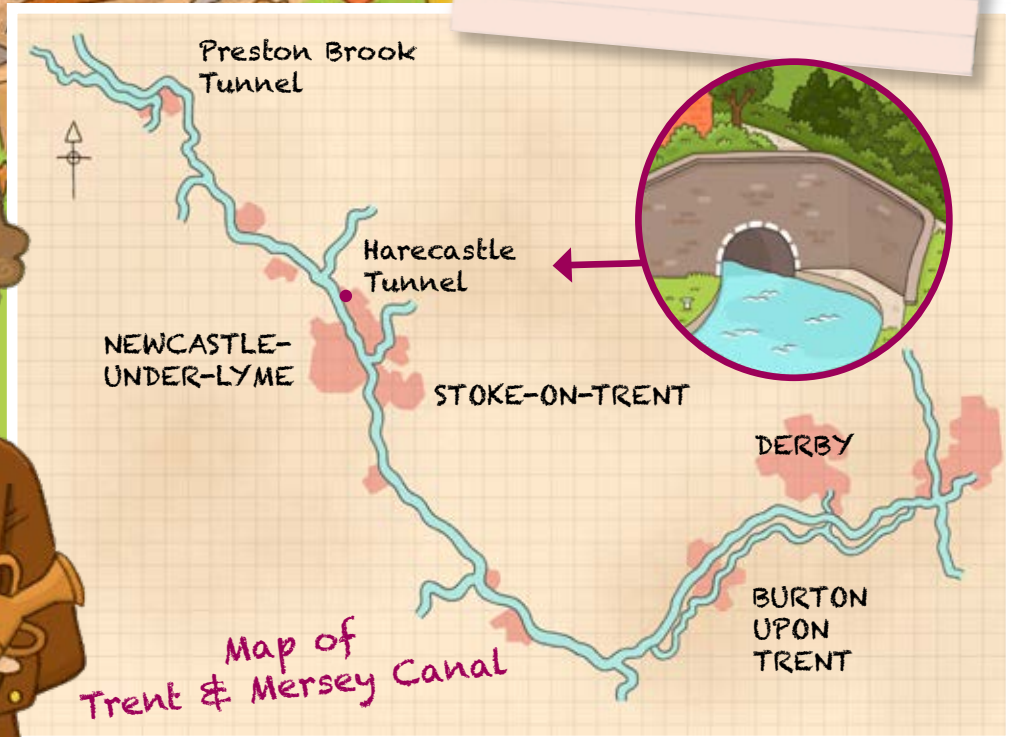
Josiah Wedgwood, the famous potter, gave money to build the Trent & Mersey Canal which connected his potteries at Stoke-on-Trent to the port of Liverpool.

Before the canal was built, packhorses delivered my pots. Loads got smashed!

The Trent & Mersey Canal crossed hills where water was scarce. So James built a narrow canal which used less water. The locks were just 72 feet long (22 m) and narrowboats were built to fit them.



One of James's great challenges was building the Harecastle Tunnel. It took 11 years to construct and was more than twice the length of any other tunnel at the time. Sadly, James died before it was finished.





The Grand Cross

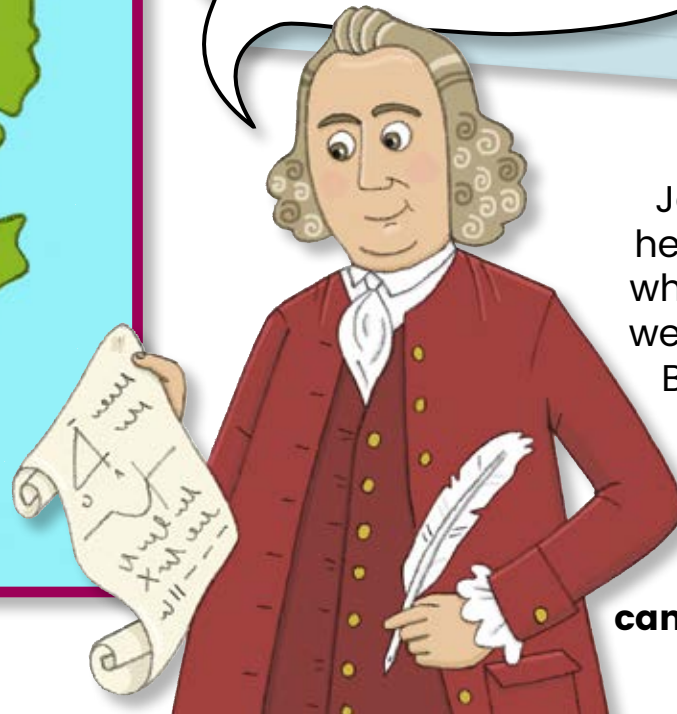
James's great idea was to plan a network of canals to connect the four main rivers of England (the Mersey, Trent, Severn and Thames) to the important ports of Bristol, Manchester, Hull and London. His dream was a canal network just like the railway network today.



The canal network was called the Grand Cross because it looked like a giant cross spread over the country. When it was completed in 1777, the network of canals could move tons of goods over great distances to

I became rich but I was only really interested in canals and solving mechanical problems

many towns and cities in England, all the year round.



James died in 1772. Today, he is remembered as a man who changed the way goods were transported and helped Britain to become a great industrial country.