



Culture

Famous inventions and inventors

1 Read the text and answer the questions.

- 1 Was George Stephenson from a rich family? _____
- 2 Where did he and his father work? _____
- 3 What kind of energy did engines use in Stephenson's day? _____
- 4 Did Stephenson design railway lines, locomotives or both? _____

George Stephenson

The English engineer George Stephenson started life poor, but got rich and successful through intelligence and hard work. He built the world's first public railway line for steam locomotives. Because of this, he is sometimes called 'the father of railways'.

Stephenson was born in 1781 in Wylam, in the north of England. His father worked in a coal mine. Nobody in his family could read or write. George joined his father in the mines when he was a teenager. While he was working there, he went to night school and learnt reading, writing and arithmetic.

Stephenson got the idea for a locomotive from his work in the mines. In those days, engines used steam, not petrol or electricity. The pumps for pumping water out of the mines used steam. One of Stephenson's jobs was fixing these pumps, so he learnt a lot about steam engines. He also learnt about tracks because horses pulled coal-carts along tracks in the mines. Stephenson wanted to design a steam locomotive to pull the coal-carts. But the rails needed to be very strong to carry a heavy steam locomotive. In 1814, Stephenson built his first locomotive – the *Blücher*. It could carry coal up a hill at 6.4 kilometres per hour, but it was more expensive to use than horses.

In 1821, parliament decided to pay for a 40-kilometre metal railway line for coal-carts pulled by horses. Stephenson asked the government to build a railway line for locomotives, not horses. Then he and his son, Robert, helped to design it. After that, the Stephensons started

a company to make the steam locomotives for the line. The Stockton and Darlington Railway opened in 1825. Stephenson drove the first train, *Locomotion*. It carried coal and flour and took two hours to go 15 kilometres.

Stephenson was now famous all over the world. He and his son got the job of designing the Liverpool and Manchester railway line and won a competition to build the locomotives for it. *Rocket*, their first locomotive for the line, was the most advanced steam engine of its day. You can see it today in the Science Museum in London.



2 1.08 Read the text again and listen. Circle T (true), F (false) or DK (don't know).

- 1 George Stephenson never learnt to read or write. T / F / DK
- 2 He never liked spending money. T / F / DK
- 3 He started working in the mines before he was 20. T / F / DK
- 4 Stephenson fixed pumps in the mines. T / F / DK
- 5 The machines for pumping water out of the mines were dangerous. T / F / DK
- 6 *Locomotion* was a coal-cart pulled by horses. T / F / DK
- 7 His first locomotive was called *Rocket*. T / F / DK

3 Find these words in the text and match them with the definitions.

- | | | | |
|----------|-------------------------------------|--------------|--------------------------|
| 1 tracks | <input checked="" type="checkbox"/> | 5 public | <input type="checkbox"/> |
| 2 coal | <input type="checkbox"/> | 6 locomotive | <input type="checkbox"/> |
| 3 pump | <input type="checkbox"/> | 7 government | <input type="checkbox"/> |
| 4 steam | <input type="checkbox"/> | | |

- a) the engine of a train
- b) the people who control a country
- c) a machine that pushes liquid up or down
- d) trains travel on these
- e) you burn this black mineral
- f) you get this gas when water is at 100°C
- g) for everyone to use