

# James Watt

James Watt was a Scottish inventor who kicked off the Industrial Revolution. He designed a more efficient steam engine that became popular in factories, and which helped many businesses produce more goods.

The first useable steam engine was made in 1712, about 25 years before Watt was born. It was called a Newcomen engine, and it used vacuum pressure to work. However, the vacuum could only be made by condensing the steam in the cylinder back into water. In order to do this, the steam had to be cooled so that it could condense. To do so, the engine would be cooled with cold water after each stroke of the machine's piston. While it was the best option at the time, it took a long time to work.

James Watt was interested in science and technology for most of his life. Born in Scotland in 1736, Watt took after his father, a successful shipbuilder, and became a talented craftsman as a young man. After going to London to learn how to make mathematical instruments, he moved back to Glasgow and opened up his own shop. After repairing some equipment at Glasgow University, the staff offered him a workshop on the campus. He earned his living making and selling both mathematical and musical instruments from his workshop.

One day in 1763, he was given a Newcomen engine to repair. He saw how much time it took to work properly and the amount of resources it used up, and wondered if there was a better, faster way for it to work. He created a new design that had a separate space for the steam to condense in so more steam stayed inside the machine. He patented the invention in 1769.

However, Watt didn't stop there! Together with his business partner, Matthew Boulton, Watt also found a way to make a steam engine move in a rotary motion, rather than in the up-and-down style of Newcomen engines, making them useful for industries that hadn't had much use for a steam engine before. Rotary engines became popular with businesses like textile mills, foundries, flour mills, paper factories and more.

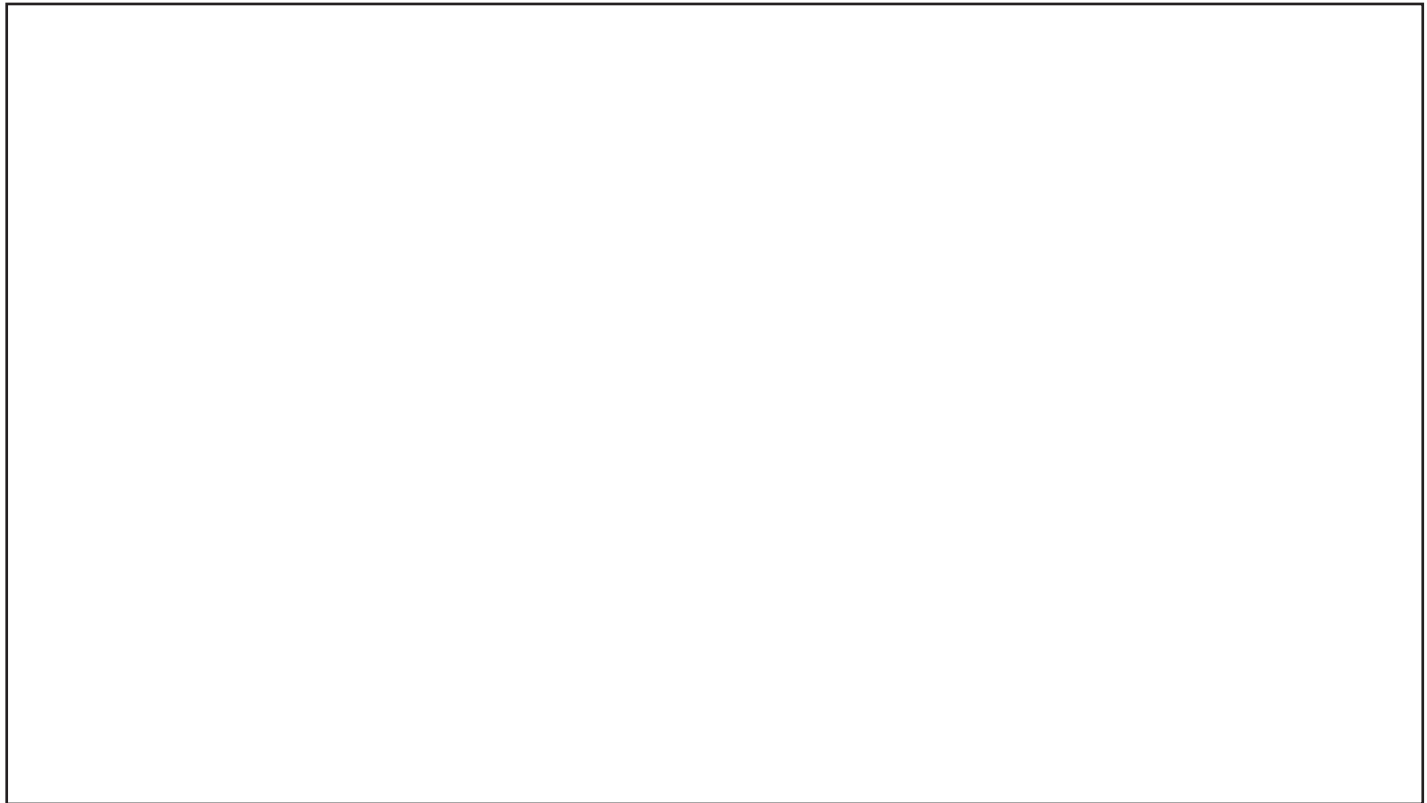
Though he worked in science for his entire life, he devoted most of his study to the steam engine, and he never stopped thinking of ways to improve it.



# Improve a Design

James Watt didn't invent the steam engine, but he had the existing design easier for more people to use. Think of a toy you have that you think could be made more fun or easier to use.

**Draw a picture of your new design for it in the box below.**



**Why do you think your idea is better?**

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