

**Web of causes and consequences**

**Consequence**

Long term

Coal became the main fuel source in Britain. It would go on to fuel the rest of the Revolution.

Steam engines were used to power factories and mills due to their high power output.

It became versatile for use in a variety of industries. It was even used in early locomotives.

Short Term

When using a steam engine, production of coal was made easier and cheaper because mines would no longer flood.

The new steam engine was able to produce way more power than the previous model.

The new steam engine was much smaller and more portable than the previous model.

**Event:**

**James Watt's Steam Engine**

**Cause**

Human Action

James Watt created a steam engine that had a separate steam condenser, allowing the steam cylinder to create steam without the need to cool down.

James Watt created a steam engine that would efficiently remove the water from mines and create energy without the need for much coal.

James Watt invented a steam engine that was small and portable, so that it was easily transportable and more versatile with where it can be used.

Underlying Conditions

The previous steam engine needed to be heated and cooled repeatedly. Because of this, the engine required to much coal to be practical when pumping water out of mines.

Coal mines would flood, leading to less coal that could be mined, and occasional shut downs of the mines. The previous steam engine tried to solve this problem, but failed to do so efficiently.

The previous steam engine was large and bulky. There was no way to transport it from one place to another without taking it apart.