

## Tasks

1. Read through the events in the boxes, highlighting any key words and information.
2. Use the date axis below to plot two living graphs; one for the development of anaesthetics, one the development of antiseptic surgery.

Doctors had been experimenting with pain relief for their patients for many centuries. Whilst they'd had some success, most of their ideas used herbs which created side effects.	<b>1795</b> Humphry Davy, a dentist's assistant, tried inhaling nitrous oxide, or 'laughing gas'. He discovered that it numbed pain.	<b>1842</b> William E. Clarke, an American chemist and doctor, successfully used ether to anaesthetise a patient to remove a tooth.	<b>1846</b> Robert Liston, a famous London surgeon, successfully anaesthetised a patient with ether and then amputated his leg.	<b>1847</b> James Simpson, a surgical professor discovered chloroform.	<b>1848</b> Hannah Greener, a 14 year old girl became the first person to die from an overdose of chloroform whilst having a toenail operation. Many others also died from infection ...	<b>1850s</b> Despite the negative side effects some patients suffered, chloroform began to be widely used to solve the problem of pain during surgery.	<b>1853</b> Queen Victoria used chloroform during the birth of Prince Leopold and spoke favourably of it - other women became keen to use it!	<b>1860</b> James Simpson became the first person to be knighted for his services to medicine. This was because of the positive impact anaesthesia was now having on surgery for everybody.
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Pre 1800	1795	1842	1846	1847	1848	1850s	1853	1860
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Pre 1800	1850s	1860s	1865	1866	Late 1860s	1890s	1890s
<p><b>Historically</b>, a lack of understanding about germs had meant that surgeons did not make an effort to keep their surroundings clean - blood stains on aprons showed how effective surgeons were!</p>	<p>Simpson’ s contributions to anaesthetics made deeper, more intricate surgery possible, but this actually made infection and bleeding a <b>bigger</b> problem.</p>	<p><b>1860s</b> An English surgeon, Joseph Lister studied infected wounds and realised, using Pasteur’ s theory that microbes might be causing infection.</p>	<p><b>1865</b> Lister started to look for a chemical that would clear bacteria from wounds. Using a treatment for sewage (carbolic acid), he operated on a patient with a broken leg using and the wound healed cleanly.</p>	<p><b>1866</b> Lister than started spraying carbolic acid in the air during all of his operations and published his success in a medical journal <i>The Lancet</i>, meaning other scientists learned of his work.</p>	<p><b>1860s</b> Although people are more receptive to Lister’ s message than they are to germ theory, not all surgeons agree to use carbolic spray as they don’ t believe in germs.</p>	<p><b>1890s</b> In the long term, attitudes changed. New antiseptic methods were developed and introduced to improve surgery.</p>	<p><b>1900</b> Surgeons began to look for different methods of preventing infection. By 1900, instruments were steam cleaned, operating theatres were scrubbed spotless and surgical gowns were introduced.</p>

3. Write how you would describe the development of each area (rapid/slow etc.) and which developments you think were most important for each area:

**Development of anaesthetics**

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**Development of antiseptic surgery**

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4. Explain the opposition to change that both developments experienced.

**Success criteria:** Include the reactions of different groups of people, explaining ‘The Black Period’ in surgery.

**Challenge:** When you’ve finished, categorise opposition into; scientific problems, practical problems and people who simply did not like change.