

# EUROPEAN INNOVATIONS



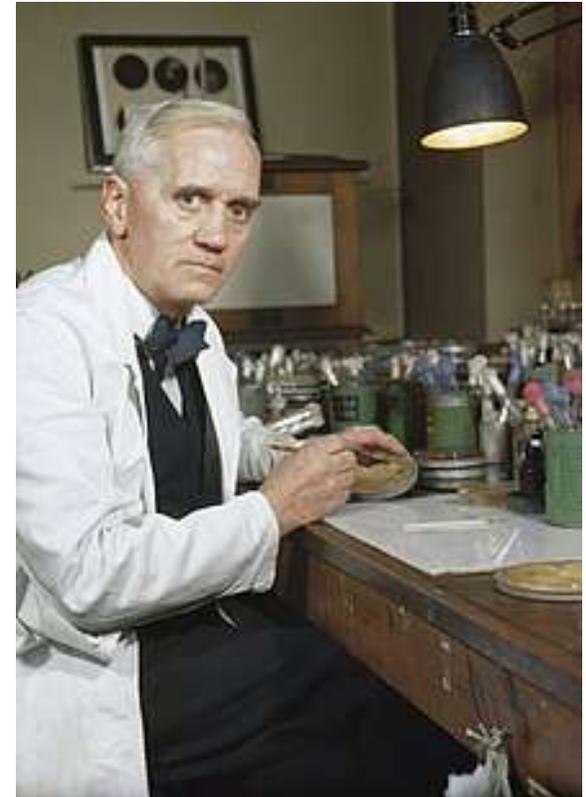
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Europe's contribution to world innovation is so big and great that I do not think one small presentation of a student from a foreign language high school can accurately illustrate it. That's why I decided to instead do a lot of research and highlight the **3 most important European innovations of all time!** So sit back, relax, and enjoy the vid- presentation!



# INNOVATION #1 - PENICILLIN

The days in which you'd die from an infection from a paper cut or the bubonic plague are long, long gone. The main reason is the discovery of antibiotics – with the first one being Penicillin, discovered by a Scott by the name of Alexander Flemind who found a Petri dish containing Staphylococci that had mould in it, which prevented the growth and spread of the bacteria anywhere near it. He deduced the mould released some sort of substance that repressed the growth of the bacteria. Once he made his discovery he grew a pure culture and found out it was a Penicillium mould, now known as Penicillium chrysogenum.



# INNOVATION #2 - VACCINES



While antibiotics are helpful indeed, they can only treat bacterial infections, and viral diseases require different means of treatment. A universal method that prevented someone from getting sick from a viral infection is getting vaccinated.

It all started with humanity trying to fight smallpox, one of the deadliest and most contagious diseases known to man. John Fewster, an English physician, noticed that people that have been sick of cowpox did not get infected by smallpox. Edward Jenner, another English physician, noticed that milkmaids were generally immune to smallpox, so he concluded that the pus in the blisters infected them with cowpox, which protected them from smallpox. On 14 May 1796, Jenner tested his hypothesis by inoculating James Phipps, an eight-year-old boy who was the son of Jenner's gardener. He got some pus from cowpox blisters on the hands of Sarah Nelmes, a milkmaid who had caught cowpox from a cow called Blossom, whose hide now hangs on the wall of the St George's medical school library (now in Tooting). He made some small cuts on both arms of the child and inserted the pus inside, so the child would get infected of cowpox. In the following days the child exhibited normal symptoms of cowpox, but no serious infection took place. After some days, Jenner exposed the boy to smallpox, and it did not get sick. He did so again later, and the child proved immune again.

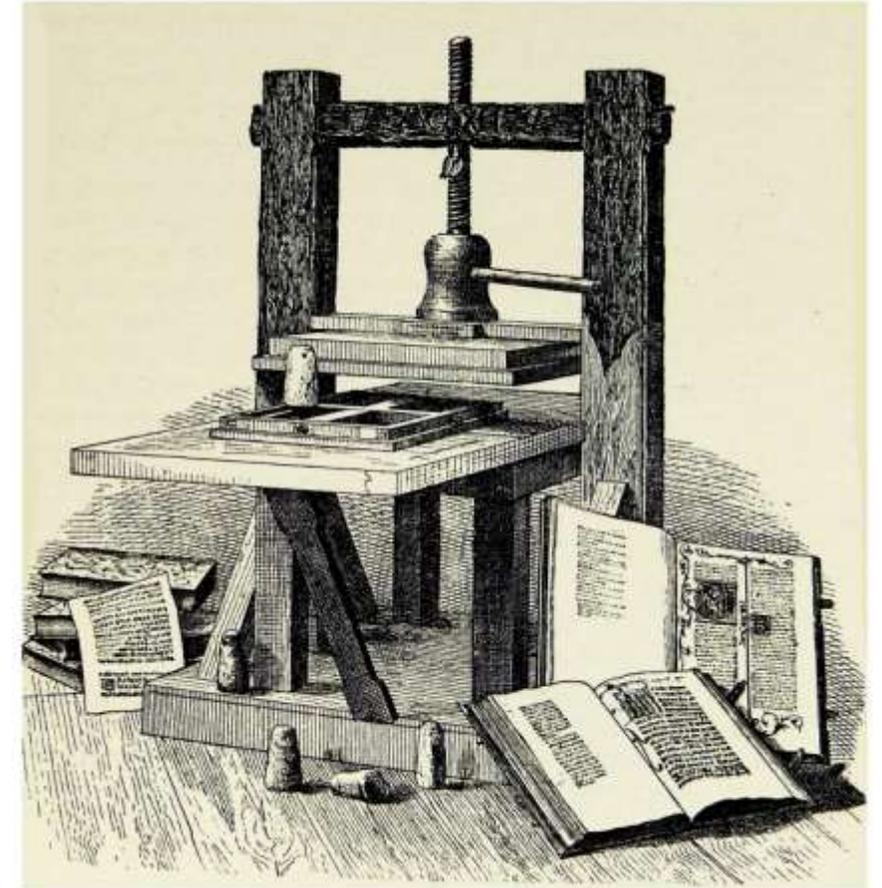
# INNOVATION #2 - VACCINES



- ▶ The success of his discovery soon spread around Europe and was used en masse in the Spanish Balmis Expedition (1803–1806), a three-year-long mission to the Americas, the Philippines, Macao, China, led by Dr. Francisco Javier de Balmis with the aim of giving thousands the smallpox vaccine. The expedition was successful, and Jenner wrote, "I don't imagine the annals of history furnish an example of philanthropy so noble, so extensive as this." Napoleon, who at the time was at war with Britain, had all his French troops vaccinated, awarded Jenner a medal, and at the request of Jenner he released two English prisoners of war and permitted their return home. Napoleon remarked he could not "refuse anything to one of the greatest benefactors of mankind."

# INNOVATION #3 – THE PRINTING PRESS

Prior to the rise of the Internet, no innovation did more for the spread and democratization of knowledge than Johannes Gutenberg's printing press. Developed around 1440 in Mainz, Germany, Gutenberg's machine improved on already existing presses through the use of a mould that allowed for the rapid production of lead alloy type pieces. This assembly line method of copying books enabled a single printing press to create as many as 3,600 pages per day. By 1500 over 1,000 Gutenberg presses were operating in Europe, and by 1600 they had created over 200 million new books. The printing press not only made books affordable for the lower classes, but it helped spark the Age of Enlightenment and facilitated the spread of new and often controversial ideas. In 1518 followers of the German monk Martin Luther used the printing press to copy and disseminate his seminal work "The Ninety-Five Theses," which jumpstarted the Protestant Reformation and spurred conflicts like the Thirty Years' War (1618-48). The printing press proved so influential in prompting revolutions, religious upheaval and scientific thought that Mark Twain would later write, "What the world is today, good and bad, it owes to Gutenberg."



THANK YOU  
FOR THE  
ATTENTION