



Otázka: Science and technology

Jazyk: Angličtina

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Science and technology are really important parts of our lives. I think no one can imagine living without technologies we have now. But it wasn't easy and quick to have life this easy because of technology and science. The development of science and technology is as old as mankind.

Contributions of science and technology

- Make people's lives easier
- Help us to learn more about our planet and universe
- Help us cure diseases
- There are many fields that contribute to science and technology (like biology, chemistry, engineering, etc.)

Development timeline

The birth of technology

- The birth of technology was about 2 million years before Christ when Homo habilis made sharp cutting edges from stone. Then Homo neanderthals made and used more weapons and useful tools.
- Then the metals were a big discovery. 6500 years BC lead (Pb) was found and then 3000 years later copper (Cu).



- The wheel became the most important, useful invention. It made a lot of things easier. Wheels had really rapid development and they are considered as the longest used invention and had the biggest influence on the development of technology.

The first industrial revolution (1760 - 1840)

- In this era, the steam power was a major technological progress. The inventor is James Watt, he made and improved steam engines. Then George Stephenson constructed a steam locomotive called Rocket. It was the first locomotive which could ride long distances and this led to building more railways.

The second industrial revolution (to 1945)

- In the 19th century, Thomas Edison improved electric light bulbs. A lot of people think he invented it but he only perfected it. His light bulbs lasted for hundreds of hours, which was much longer than other ones. They were also cheaper.
- In 1876 the device used for talking to someone who is practically anywhere was invented. Now, we know this device under the name telephone.
- In this era, big accomplishments were rockets and space flights. The earliest rockets were invented in China in the 11th century but in the 19th century the rockets were much improved. Knowledge of astronomy really helped to make good rockets like these. Konstantin Tsiolkovsky was the first person to think about space stations and he even drew their plans. He figured out how to and how quick to leave the atmosphere. The first Russians put a man into orbit. It was Yuri Gagarin in 1961. Then NASA accomplished landing on the moon in 1969.

The third technical and scientific revolution (1945 to nowadays)

- After the Second World War, many new discoveries and accomplishments in science and technology were made. In 1945 the first electronic computer was invented and it could solve mathematical problems. But the computer did not look



like we are used to. It fitted into one whole room. In the 1960s microprocessors were invented so computers could be a lot smaller.

- The World Wide Web was created and it makes our lives much easier every day. We have access to billions of documents, images, information, we can shop online and even communicate all the time. Mobile phones became smaller and more powerful.
- It is amazing what science and technology gave us. It makes our lives easier and I think even much freer. When I look back at what mankind could invent and make, I am looking forward to the next incredible inventions.

Nobel Prize

- Founded by Alfred Nobel
- Most famous and prestigious scientific award
- Awarded in 5 fields (chemistry, physics, medicine or physiology, peace, literature)
- 1968 - added prize in economic sciences (in memory of Alfred Nobel) - not exactly Nobel prize (not paid from his money)
- 10th December: ceremony day (anniversary of Nobel's death)
- Prize handed by Swedish king
- Prize contains: golden medal, diploma, money
- Can't be awarded to more than three people
- Can't be awarded after the person dies
- Marie Curie - the first woman who awarded Nobel prize

Important personalities and their contribution

Alfred Nobel

- Swedish chemist
- Most famous invention: dynamite
- in 1888 French newspaper wrote article titled The merchant of death is dead (was called like this because he invented such a deadly weapon)



- It was an error (It was Alfred's brother Ludwig who had died)
- Nobel wasn't happy that this is the way he will be remembered
- He changed his last will (It said that his fortune will be used to create a series of prizes for the greatest minds)

There are of course more scientists with loads of interesting and important inventions. I choose those who I consider most famous or interesting.

BRITISH

- **Isaac Newton** - formulated the laws of motion and gravitation (there's no record that an apple fell on his head, he just observed how apples were falling on the ground)
- **Charles Darwin** - founder of evolutionary biology, he thought evolution (development of species) is caused by natural selection. Never said that humans developed directly from monkeys. He said we have common ancestor.
- **Alexander Fleming** - discovered first effective antibiotics (named penicilin)
- **Stephen Hawking** - theoretical physicist. He is most known for his black holes research

CZECH

- **Johann Gregor Mendel** - Founder of genetics, established many of the rules of heredity based on his pea plant experiments (he bred different pea plants and observed which trait the new plant inherited from its parents)
- **Jan Janský** - sorted blood into 4 blood types (I, II, III, IV) He actually wasn't first who did that. The first was Karl Landsteiner (Austrian, Nobel prize, blood types A, B, AB, 0). Janský was unaware of his work.
- **Jaroslav Heyrovský** - inventor of the polarographic method (analytics) for which he got Nobel prize



AMERICAN

- **Kary Banks Mullis** - discovered PCR method (Polymerase chain reaction - used to rapidly make copies of a DNA sample (just a part of it) - this large amount of copies can be used to further examination or research)
- **Nikola Tesla** - Serbian-American. He was electrical and mechanical engineer.
- **Thomas Alva Edison** - inventor and businessman, most known for his invention of lightbulb

War of the currents

- It was a fight over what method of electricity generation will be used in America.
- Tesla and Edison made huge progress in electrification of the world.
- It was basically Edison's company with direct current vs. George Westinghouse's company (and Nicola Tesla) with alternating current.
- Tesla and alternating current won.