

The 16<sup>th</sup> century was a time of unprecedented change, the very beginning of the modern era of science, a time of great exploration, religious and political turmoil, and extraordinary literature.

In 1543, Copernicus published his theory that the Earth was not the center of the universe, rather, the Earth and the other planets orbited around the Sun. Called the Copernican Revolution, his theory forever changed astronomy, and ultimately changed all of science.

During 16<sup>th</sup> century, advancements were made in the theories of mathematics, cosmography, geography and natural history. 16<sup>th</sup> century inventions related to the fields of engineering, mining, navigation and the military arts were prominent.

1500

- Wheel-lock musket invented.
- The first flush toilets appeared.

1510

- Leonardo Da Vinci designs a horizontal water wheel.
- Pocket watch invented by Peter Henlein.

1513

- Urs Graf invents etching.

1565

- A graphite pencil invented by Conrad Gesner.

1568

- Bottled beer invented in London.

1569

- Gerard Mercator invents Mercator map projection.

1589

- Englishmen, William Lee invents a knitting machine called the stocking frame.

1590

- Dutchmen, Zacharias Janssen invents the compound microscope.

1593

- Galileo Galilei invents a water thermometer.

1. Arrange the list of the most important inventions. Justify your choice.
2. Discuss in the concrete examples how the new inventions influenced the historical progress.

During the 17th century major changes in philosophy and science took place. Before the 17th century began, science and scientists were not truly recognized. In fact, at first people like the 17th century genius Isaac Newton were called natural philosophers, since there was no concept of the word scientist for most of the 17th century.

The intrusion of newly invented machines became part of the daily and economic lives of 17th century folk. During the 17th century, the science of chemistry developed from medieval alchemy, and the 17th century science of astronomy evolved from astrology.

By the end of the 17th century, a scientific revolution had occurred and science had become an established mathematical, mechanical, and empirical body of knowledge. Galileo Galilei, René Descartes, Blaise Pascal, Isaac Newton, and others had become noted scientists.

1608

- Hans Lippershey invents the first refracting telescope.

1620

- The earliest human-powered submarine invented by Cornelis Drebbel.

1624

- William Oughtred invents a slide rule.

1625

- Frenchmen, Jean-Baptiste Denys invents a method for blood transfusion.

1629

- Giovanni Branca invents a steam turbine.

1636

- W. Gascoigne invents the micrometer.

1642

- Frenchmen, Blaise Pascal invents an adding machine.

1643

- Evangelista Torricelli invents the barometer.

1650

- Otto von Guericke invents an air pump.
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  2. Discuss in the concrete examples how the new inventions influenced the historical progress and life of the people

The 18<sup>th</sup> century (also referred to as the 1700s) began the first Industrial Revolution. Modern manufacturing began with steam engines replacing animal labor. The 18<sup>th</sup> century saw the widespread replacement of manual labor by new inventions and machinery.

The 18<sup>th</sup> century was also part of the "The Age of Enlightenment", a historical period characterized by a change away from traditional religious sources of authority, and a move towards science and rational thought.

The effects of 18<sup>th</sup> century enlightenment led to the American Revolutionary War and the French Revolution. The 18<sup>th</sup> century saw the spread of capitalism and the increased availability of printed materials.

1701

- Jethro Tull invents the seed drill.

1709

- Bartolomeo Cristofori invents the piano.

1711

- Englishmen, John Shore invents the tuning fork.

1712

- Thomas Newcomen patents the atmospheric steam engine.

1717

- Edmond Halley invents the diving bell.

1722

- French C. Hopffer patents the fire extinguisher.

1724

- Gabriel Fahrenheit invents the first mercury thermometer.

1733

- John Kay invents the flying shuttle.

1745

- E.G. von Kleist invents the first electrical capacitor.

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