

The Roots of Modern Science

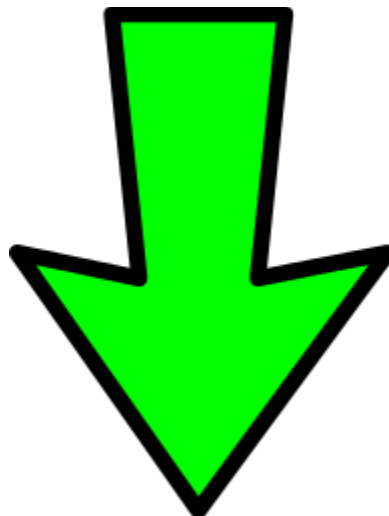
Before 1500, scholars generally decided what was true or false by referring to an ancient Greek or Roman author or to the Bible. Few European scholars challenged the scientific ideas of the ancient thinkers or the church by carefully observing nature for themselves.

The Medieval View During the Middle Ages, most scholars believed that the earth was an immovable object located at the center of the universe. According to that belief, the moon, the sun, and the planets all moved in perfectly circular paths around the earth. Common sense seemed to support this view. After all, the sun appeared to be moving around the earth as it rose in the morning and set in the evening.

This earth-centered view of the universe was called the **geocentric theory**. The idea came from Aristotle, the Greek philosopher of the fourth century B.C. The Greek astronomer Ptolemy (TOL•a•mee) expanded the theory in the second century A.D. In addition, Christianity taught that God had deliberately placed the earth at the center of the universe. Earth was thus a special place on which the great drama of life unfolded.

Question # 1: How did most scholars, and people in general, decide what is true or false before the year 1500? Did they carry out research or observations on their own?

Question # 2: During the Middle Ages, how did they believe that our universe functioned? Why would they believe that? Which astronomer is famous for his geocentric theory?



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How did modern science begin?

During the Middle Ages, few scholars questioned beliefs that had been long held. Europeans based their ideas on what ancient Greeks and Romans believed or on the Bible. People still thought that the earth was the center of the universe. They believed that the sun, moon, other planets, and stars moved around it.

In the mid-1500s, attitudes began to change. Scholars started what is called the Scientific Revolution. It was a new way of thinking about the natural world. It was based on careful observation and the willingness to question old beliefs. European voyages of exploration helped to bring about the Scientific Revolution. When Europeans explored new lands, they saw plants and animals that ancient writers had never seen. These discoveries led to new courses of study in the universities of Europe.

Question # 3: Using the above paragraph, write YOUR OWN definition for the Scientific Revolution.

A combination of discoveries and circumstances led to the Scientific Revolution and helped spread its impact. During the Renaissance, European explorers traveled to Africa, Asia, and the Americas. Such lands were inhabited by peoples and animals previously unknown in Europe. These discoveries opened Europeans to the possibility that there were new truths to be found. The invention of the printing press during this period helped spread challenging ideas—both old and new—more widely among Europe’s thinkers.

Question # 4: How did European explorers add to the Scientific Revolution? AND What invention that we have studied before played a role in spreading information during the Scientific Revolution?