



# The Scientific Revolution

Until the mid-1500s, scientists agreed that the Earth was the unmoving center of the universe. The ancient Greek astronomer Ptolemy had come up with this theory in the second century A.D. His theory was accepted because it seemed like common sense and went along with the Church's views. The Church taught that God put Earth in the middle of the universe. However, scholars made discoveries in the 1500s and 1600s that changed the way people thought about science. This time in history is called the Scientific Revolution.



In 1543, Nicolaus Copernicus published a book that said Ptolemy's theory was wrong. Copernicus said that the Sun was the center of the universe, not the Earth. He also wrote that Earth was just one of several planets that revolved around the Sun. Most scholars did not believe Copernicus's theory. At that time, all scientific knowledge was based on ancient theories like Ptolemy's. If Ptolemy's theory was wrong, all scientific knowledge could be wrong!

Over the years, scientists looked for evidence of Copernicus's theory. In 1609, an Italian scientist named Galileo built a powerful telescope. It had a special lens that let him see things that had never been seen before. He saw mountains on the Moon, dark spots on the Sun, and four moons around Jupiter. The four moons revolved around Jupiter just like Copernicus said the Earth revolved around the Sun.

Galileo was not praised for his amazing discoveries. Instead, the Church was angry. Galileo's ideas clashed with the Church's belief that the heavens did not move. The Church did not want people to question its teachings. In 1633, Galileo was put on trial. Church officials told him to take back what he said or he would be put to death. Galileo agreed to say that he was wrong and that the Earth was the center of the universe. Legend says that Galileo muttered, "And yet Earth does move!" as he walked out of the court.

Scientists like Copernicus and Galileo started a new way of scientific thinking. Following their example, scholars like Sir Isaac Newton, Sir Francis Bacon, and René Descartes used a logical approach to solving problems. By the early 1600s, scientists used a process called the scientific method to study the natural world. Scientists collected and measured data and came up with a hypothesis, or possible explanation for the data. Then, they tested the hypothesis by observing or experimenting. Developed over many years, this step-by-step process is still used today.



# The Scientific Revolution

## Multiple Choice

Circle the best answer, and write the letter in the box.

1. Until the mid-1500s, scientists agreed that \_\_\_\_\_ was the unmoving center of the universe.

A. the Sun  
B. the Earth  
C. the Moon  
D. heaven

2. In 1543, \_\_\_\_\_ published a book that said the Sun was the center of the universe.

A. Ptolemy  
B. The Church  
C. Copernicus  
D. Galileo

3. Through his telescope, Galileo saw \_\_\_\_\_.

A. mountains on the Moon  
B. dark spots on the Sun  
C. four moons around Jupiter  
D. all of the above

4. When the Church heard about Galileo's discoveries, it \_\_\_\_\_.

A. praised Galileo for his work  
B. included Galileo's discoveries in its teachings  
C. put Galileo on trial  
D. agreed publicly with Galileo's findings

5. By the early 1600s, scientists used a process called the \_\_\_\_\_ to study the natural world.

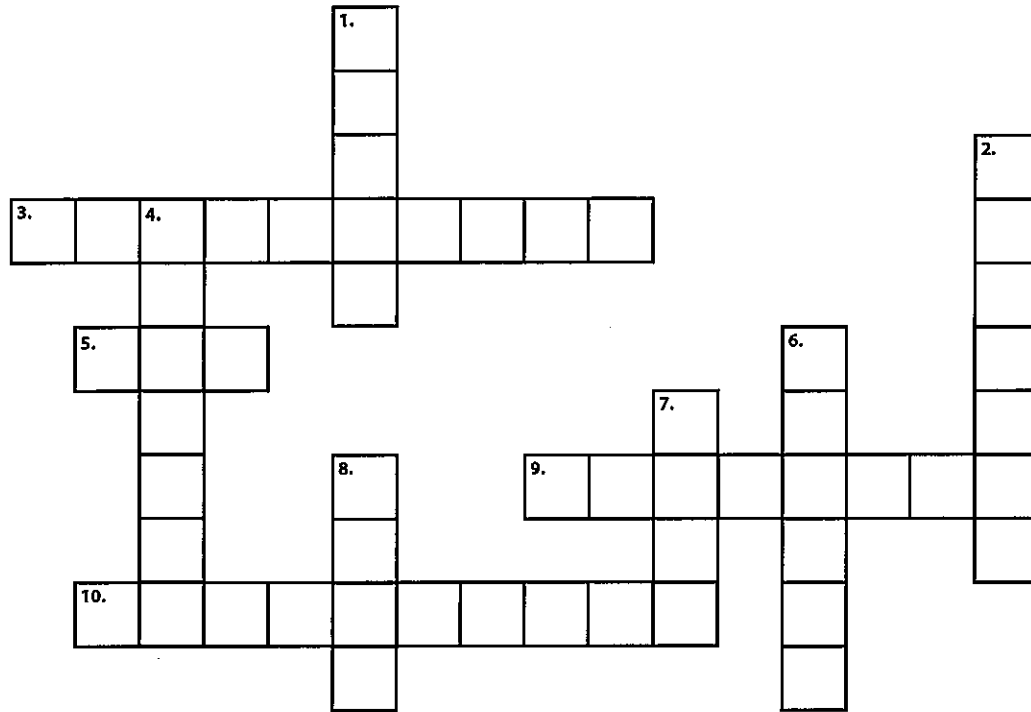
A. scientific method  
B. science fair  
C. Scientific Revolution  
D. international method



# The Scientific Revolution

## Crossword Puzzle

Write the best answer in each blank, and complete the crossword puzzle.



### ACROSS

3. \_\_\_\_\_ said that Earth was just one of several planets that revolved around the Sun.
5. The Church taught that \_\_\_\_\_ put Earth in the middle of the universe.
9. The Church did not want people to \_\_\_\_\_ its teachings.
10. A/an \_\_\_\_\_ is a possible explanation for measured data.

### DOWN

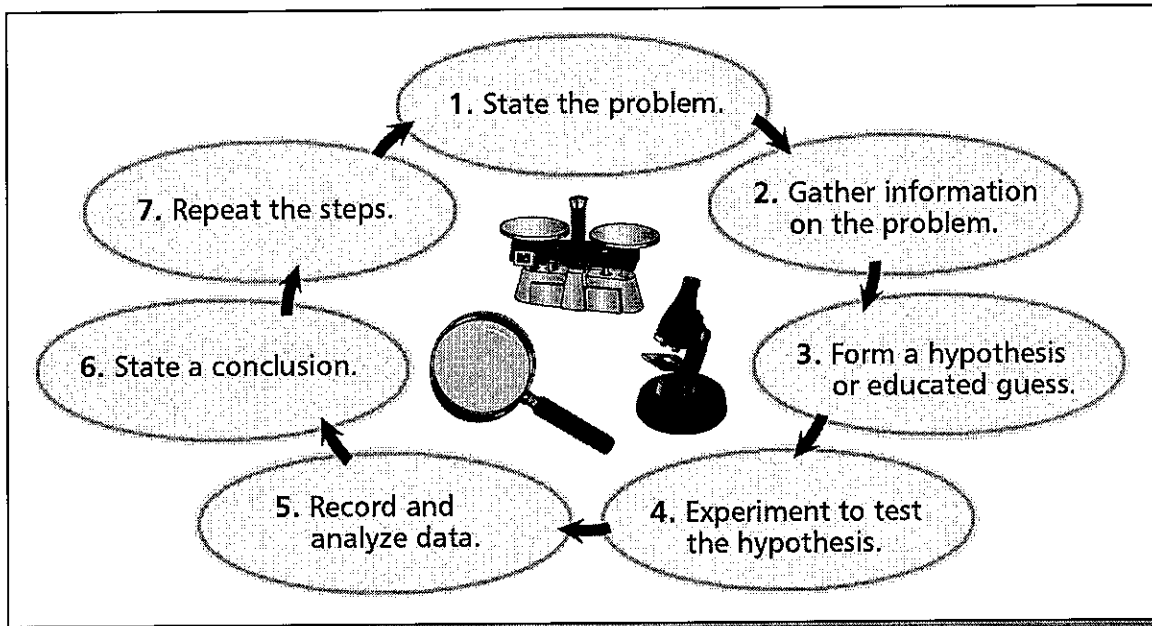
1. If Ptolemy's theory was \_\_\_\_\_, all scientific knowledge could be wrong!
2. The Church taught that the \_\_\_\_\_ did not move.
4. Before Copernicus's theory, all scientific knowledge was based on ancient theories like \_\_\_\_\_'s.
6. The scientific \_\_\_\_\_ is still used today.
7. Galileo's telescope had a special \_\_\_\_\_ that let him see things that had never been seen before.
8. Scientists collected and measured \_\_\_\_\_.



# The Scientific Revolution

## Diagram – The Scientific Method

Use the diagram to answer the following questions. Write the answers in complete sentences.



1. What should a scientist do before he or she forms a hypothesis?

---

---

2. What should a scientist do after he or she experiments?

---

---

3. Why do you think step 7 is included in the scientific method?

---

---



# **The Scientific Revolution**

## **Extension Activities**

*Choose one of the following activities to complete. Write the answer in complete sentences.*

1. Sir Isaac Newton made some important discoveries. Look in your textbook, on the Internet, or at the library to find out three facts about Sir Isaac Newton.
2. What would you have done if you were Galileo? Would you have taken back what you said or stood by your discoveries? Explain your answer.
3. How might the world be different today if the Scientific Revolution had never happened? Explain your answer.

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---



# Quiz: The Scientific Revolution

## True/False

Decide if each statement is true or false, and write "true" or "false" in the blank.

- \_\_\_\_\_ 1. Copernicus published a book that said the Earth was the center of the universe.
- \_\_\_\_\_ 2. By the early 1600s, scientists used a process called the scientific method to study the natural world.
- \_\_\_\_\_ 3. The Church praised Galileo for his discoveries.
- \_\_\_\_\_ 4. Ptolemy was an ancient Greek astronomer.
- \_\_\_\_\_ 5. The scientific method is still used today.

## Multiple Choice

Circle the best answer, and write the letter in the box.

6. A/an \_\_\_\_\_ is a possible explanation for measured data.
- A. question
  - B. method
  - C. experiment
  - D. hypothesis
7. The Church taught that God put the \_\_\_\_\_ in the center of the universe.
- A. Sun
  - B. Moon
  - C. Earth
  - D. Ocean

## Short Answer

Answer the following question in complete sentences.

8. List four of the steps in the scientific method.

---

---