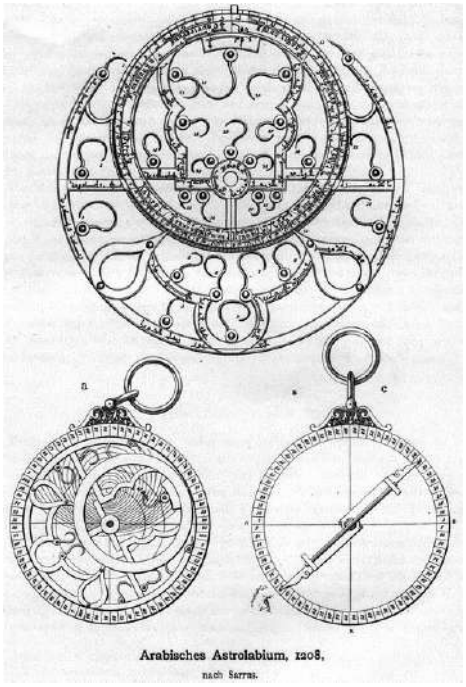
The Age of Exploration

By ReadWorks



For thousands of years, people have been fascinated with world exploration and discovering new places and cultures. Historically, one of the most efficient ways to navigate the world was traveling by sea. From the ancient Greeks to medieval Spanish kings, exploration was a major goal for governments because it offered the prospect of new commercial operations and trade routes. For example, Spanish ships could sail to China and bring back Chinese spices and silks (which were unavailable on mainland Europe) to sell to Spanish markets. Early explorers relied on a navigational system called "dead reckoning," or calculating their position based on previous positions (like landmasses) to make sure they did not veer off course; however, this method could be an

inexact science. As exploration became more important for Europe's economic interests, advanced devices that made exploration easier and more exact were developed.

The "age of exploration" marked a new frontier for sea navigation. This epoch began in the 15th century when Portugal and Spain started to expand their commercial interests and trade routes across the oceans, resulting in the exchange of goods and sometimes even traditions. Sailors used new technologies to navigate across the world, including a device called the quadrant, a fan-shaped magnetic object that predicted the altitude of stars, the moon, and the sun in order to determine where a ship was headed. Another device was the compass, which used Earth's magnetic poles to point navigators north, south, east, or west. Time-keeping devices, like hourglasses, were important in calculating how far a ship had sailed. Early navigators also used maps, although these were not always accurate and were often written during the course of the exploration. These maps were then improved upon with new explorations.

It was an exciting time to be an explorer. Governments would pay men to navigate ships across the open seas and discover new lands. One of the most famous explorers was Christopher Columbus, the Italian navigator who set out to find a more efficient route to India and stumbled upon North America instead. At the time of his sailing, Columbus only had a few navigational instruments available to him, including the compass, an astrolabe (a device that predicted the location of stars and helped explorers determine their latitudinal or vertical position on a globe), a quadrant, and incomplete maps. Columbus's incomplete knowledge of world geography and the imprecise navigational devices he brought with him caused him to inadvertently discover North America and all the rich natural resources available there.

You can imagine the difficulties explorers had with the available technologies during Columbus's time when you think about Columbus's experience. He meant to travel from Spain to India, which we now know would have required him to sail first west, then south, then north. Instead, Columbus traveled west and believed he had reached the farthest place from Spain, the complete opposite side of the world: India. On the one hand, the tools' inaccuracies made exploration by sea inconsistent and unpredictable; on the other, explorers at the time had limited knowledge of the world's geography, which also hindered exploration of unknown territory. These issues, along with the financial risks involved, made it difficult for some governments and kings to agree to fund explorations during which their navigators could become irretrievably lost.

As time went on, more European countries began to explore the world. In the late 17th century, the United Kingdom joined the navigational tool race, developing modern tools such as the sextant and the octant, which replaced tools used by the earliest explorers. The sextant was used to determine the moon's distance from other celestial bodies, which made it easier for navigators to figure out the ship's longitude and effectively replaced the need for primitive time-keeping devices. The octant made latitudinal calculations much more accurate and was used in lieu of quadrants. These modern inventions arrived after much of the world had already been explored, but allowed ship captains to cut down the length of time they were at sea, and improved accuracy in route planning.

Name: _____ Date: _____

1. According to the passage, what was historically one of the most efficient ways to navigate the world?

A traveling on foot
B traveling by sea
C traveling by horse
D traveling by air

2. The passage lists different navigational instruments available to explorers. Which of the following navigational instruments was not available to Christopher Columbus?

A the sextant
B the astrolabe
C the compass
D the quadrant

3. Limited knowledge of world geography was a problem for early exploration. What evidence from the passage supports this conclusion?

A Navigational maps were improved with each new exploration.
B Columbus set out to find a more efficient trade route to India.
C Instead of India, Columbus unintentionally sailed to North America.
D The compass used Earth's magnetic poles to direct navigators.

4. How did navigational tools change from the 15th century to the 17th century?

A They became larger.
B They became smaller.
C They became less accurate.
D They became more accurate.

5. What is this passage mostly about?

A Christopher Columbus's discovery of America
B the tools and challenges of exploration by sea travel
C tools made by the United Kingdom in the 17th century
D why governments were hesitant to fund explorations

6. Read the following sentence: "Columbus's incomplete knowledge of world geography and the imprecise navigational devices he brought with him caused him to **inadvertently** discover North America and all the rich natural resources available there."

As used in this sentence, what does "**inadvertently**" mean?

A happily
B purposefully
C accidentally
D fortunately

7. Choose the answer that best completes the sentence below.

Early navigational techniques such as "dead reckoning" were imprecise; _____, exploring uncharted seas was challenging and inconsistent.

A consequently
B otherwise
C ultimately
D especially

8. Why was exploration a major goal for governments?

_____

_____

_____

_____

9. What is an octant used for, and which earlier navigational tool did it replace?

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_____

10. Explain how newer navigational instruments aided and improved naval exploration.

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Teacher Guide & Answers

Passage Reading Level: Lexile 1340

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8. Why was exploration a major goal for governments?

Suggested answer: Exploration was a major goal for governments because it offered the prospect of new commercial operations and trade routes.

9. What is an octant used for, and which earlier navigational tool did it replace?

Suggested answer: An octant was used to make accurate latitudinal calculations, and it replaced the quadrant.

10. Explain how newer navigational instruments aided and improved naval exploration.

Suggested answer: Newer navigational instruments like the octant and sextant improved accuracy in route planning and allowed ship captains to cut down the length of time they were at sea. Because of this, explorations were more likely to be successful and less likely to become lost or go off-course.