

Mankind Textbook: Age of Exploration- New Technology

Directions: Read the documents to answer the questions that follow. Remember to restate and use complete sentences.


THE COMPASS

At its most basic, the compass is a floating magnet.

All magnets have two poles, one north and one south. If you put two magnets together, they will either attract each other or repel each other, depending on how you line up the north and south poles.

The earth is the largest magnet of all. The center of the earth is a ball of iron, created when the earth was formed. As the earth spins on its axis, molten iron swirls around the core, creating an electric current and a magnetic field strong enough to affect all the other magnets on earth, including the magnetized needle in a compass.

When a compass needle points north, it points to "magnetic north," not "true north." This is because the magnet at earth's core is not perfectly lined up with the North and South Poles. The difference between true north and magnetic north is measured in degrees and varies depending where you are.




LATEEN SAIL

The triangular lateen sail, borrowed from Arab ships, was a key feature of the Portuguese caravel.

With a square sail, a ship could only sail before the wind. The lateen sail had a crossbar on its diagonal side that was bisected by a vertical mast. With its free corner secured near the stern, it could take the wind on either side, allowing a ship to tack into the wind in a zigzag fashion, creating forward momentum in any direction and allowing faster navigation in all weather conditions.

Because Dias's ship was rigged with lateen sails, he could sail into the wind, push out into the ocean and escape the rugged coastline, and navigate right around the southern tip of Africa. The combination of bravery and technology allowed him to pioneer a sea route to the riches of the East.

1. How do you think the use of a compass would help European explorers during the Age of Exploration?

2. According to the document, what advantage did the use of a lateen sail give to explorers?
