

Question...

- What can this:



- Have to do with exploring the Atlantic and beyond?

- These are **herring**:



And Europeans in the 15th Century
loved to eat them!



They can be served in all sorts of interesting ways...



Rebecca Flint Marx



And if **salted**, herring last many weeks



Salt: One of the most sought after commodities of the Ancient and Medieval World's



- Salt is an excellent **preservative!** It sucks the moisture out of flesh (fish, beef or even mummified human remains!)
- Salt also kills microbes that lead to the decomposition of flesh.

Not long ago....



- As little as 100 years ago, workers were still salting meat and fish in barrels, for transportation and storage.

Why is this relevant?

- Much of the Renaissance economy was based on salt production.
- Salt, and salted and preserved foods, were transported all over the Mediterranean by merchant vessels.
- This sea trade was the backbone of the innovation that drove scientific and maritime exploration, and also astronomy.
- As mariners travelled to new markets, they began to push the boundaries of technology. New technologies allowed them to travel further and sail longer.
- Some merchants became explorers as they began to wonder at the possibilities...

Fishermen on the coast of Portugal had perfected the art of using salt to preserve herring. With the use of salt, their range **extended** far out into the Atlantic.



- Eventually, their ships found the American continent.

Portuguese Fishermen were not *Explorers*

- Although they sailed as far as the coast of Canada, these fishermen were primarily interested in catching fish.
- They established some isolated fishing camps, but nothing at all permanent.
- As it turned out, the famous Portuguese explorers who followed turned South around Africa or across the Atlantic to Brazil and South America.

The True Explorers

- Explorers are people who set out **purposefully** to find and travel in new lands.
- By the mid-late 1400's shipbuilding techniques and important advances had made it possible to **travel further** out to sea. However, it was a time of superstition and most sailors hugged the coast.



Astrolabe

The World is Round

- Since the early 200's B.C., the world was **known** to be a sphere. A Greek mathematician named *Eratosthenes* had worked it out quite accurately using nothing more than his feet and his brain. As such, the earliest World maps always show Earth as a sphere...



Chinese trade is nothing new

- In the Middle Ages and Renaissance periods, trade with china was as important as it is today, or perhaps even more.



- Products like silk and spices flowed from that region, and European traders paid **high prices** for these goods coming overland or by slow coastal craft.

Question?

- Was there another way to get the goods from China without having to undergo an arduous and expensive overland trek?

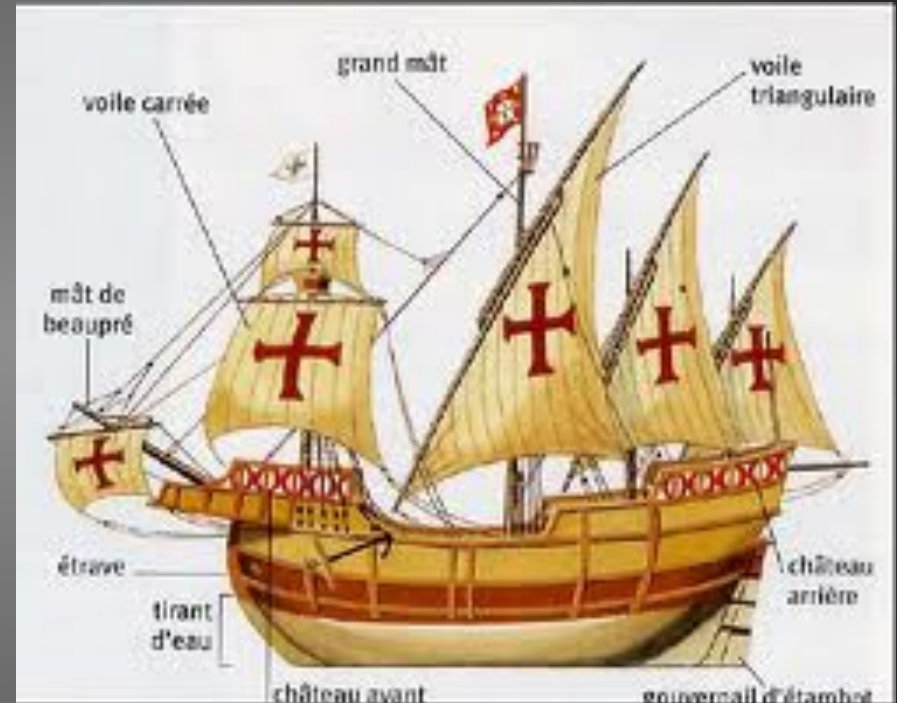
Answer...

- Perhaps a ship could sail all the way around the world and so end up in China...
- European explorers set out around the World's oceans in order to find the way to China.
- Some headed West, while others headed East...

EXPLORER TECHNOLOGY

CARAVELLE

- A newer design of ship that was more seaworthy than earlier vessels.
- Used by all the Renaissance Explorers!





EXPLORER TECHNOLOGY

MAPS

- Influenced by Chinese explorers, Portuguese fishermen and better map making (cartography), explorers had better maps !





Enter the Chinese...



large Chinese fleet, led by a great Chinese explorer, Zheng He, circumnavigated the globe sometime around 1419-21.

- Some argue that his maps sparked European exploration!
- It has been argued that the Chinese visited the shores of America in 1421.

The Maps of Zeng He



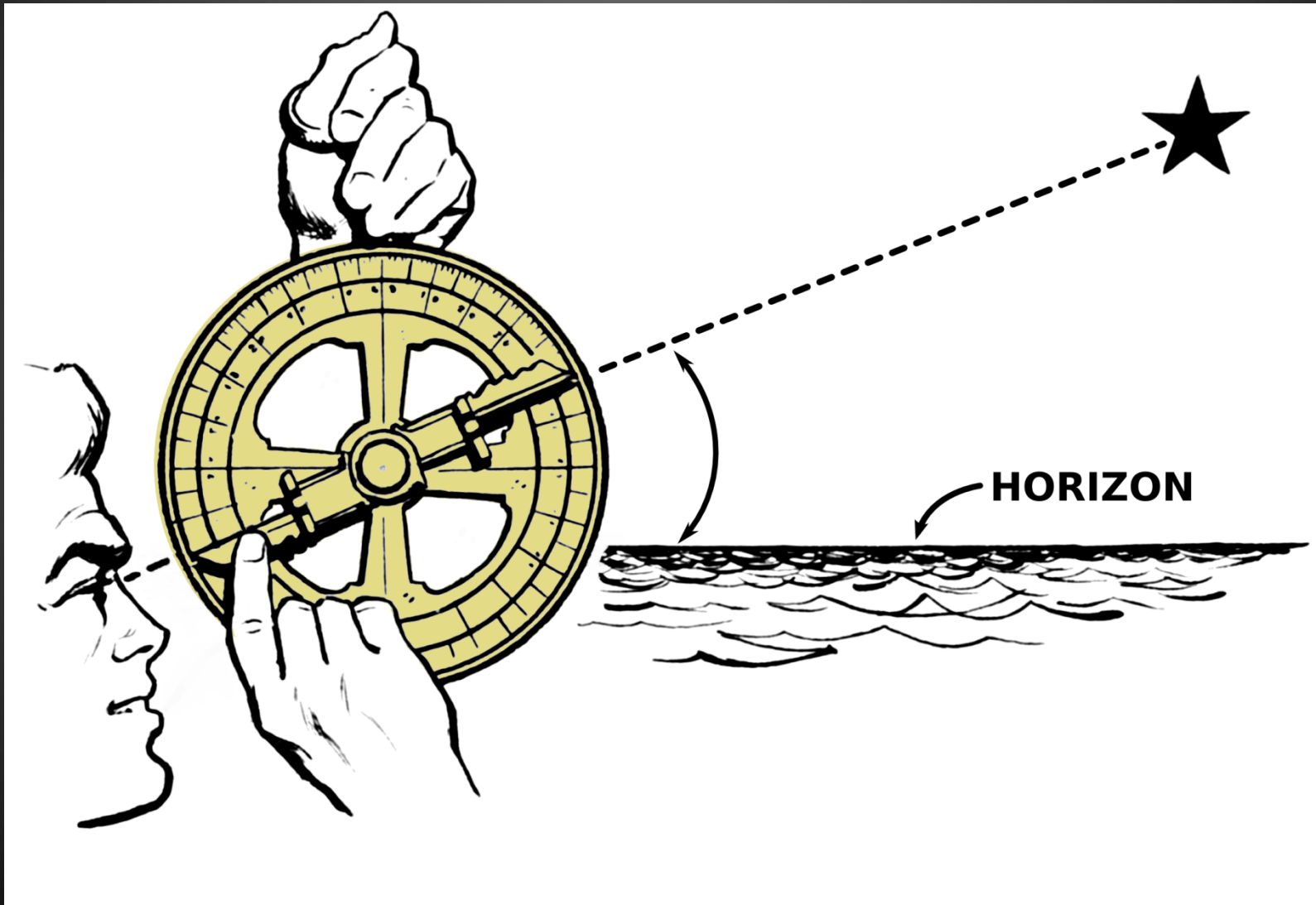
EXPLORER TECHNOLOGY

ASTROLABE

- A device invented by Arabian seafarers that enabled navigation by the sun.
- Enabled explorers to travel out of sight of land



Uses sun angle to determine latitude



EXPLORER TECHNOLOGY

MAGNETIC COMPASS

- A device that uses a magnetized iron pointer.
- Always points to magnetic North Pole!





EXPLORER TECHNOLOGY

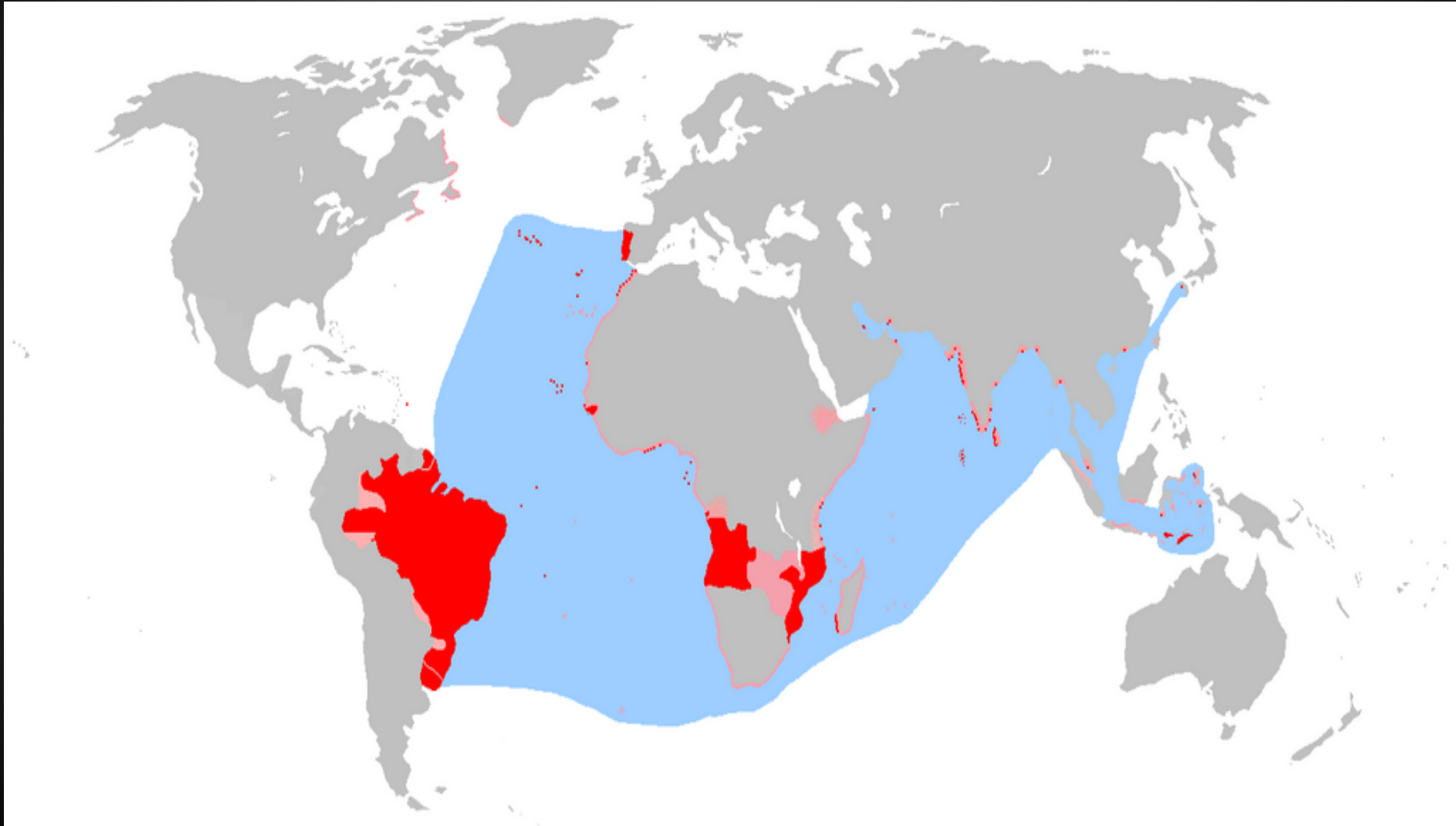
TELESCOPE

- Not invented until 1608, after much of the world had been explored.
- Enabled explorers to see further and avoid hazards





Portuguese Exploration



Consider...

- Which of these items of technology was most important for the explorers?