

Name: _____

Date: _____ Period: _____

Review: Exploring the Oceans

Voyages of Discovery:

- The first sailing vessels (3000 B.C.) were powered by wind
- Sails were an important discovery because they allowed for faster and further travel offshore and opened oceans and seas for trade
- The Phoenicians (2000 B.C.)
 - Earliest skilled ocean traders
 - By 700 B.C. they sailed around Africa
 - By 150 B.C. sailed north as far as Great Britain
 - Accurate maps were created by Ptolemy based on Phoenician's observations
- The Vikings (700 -1200 A.D.)
 - Extremely successful even during the dark ages
 - Origin was present day Norway, Sweden, and Denmark
 - Plundered much of Europe and sailed as far as North Africa and North America
 - Ship design was far superior to anything else afloat at the time
 - Ships were 45-90 feet in length and powered by sail and oar
 - Flattened bottoms which allowed them access to shallow waters
 - Exploration for the Vikings ended with the dark ages when a rebirth in ocean exploration began
- Columbus (1451 - 1506)
 - Italian explorer who was thought to be the first explorer to discover the America
 - Columbus is now credited as the explorer to establish permanent settlements in the America with his four voyage across the Atlantic Ocean
- Balboa (1475 - 1519)
 - Spanish explorer (Conquistador) who was the first to crossed the isthmus of Panama (by land) and see the Pacific Ocean
 - Isthmus- small stretch of land that separates two large bodies of water
- Magellan (1480 - 1521)
 - Portuguese explorer who was the first to circumnavigate the world
 - Circumnavigate- to sail all the way around
 - Sailed west with five ships and 290 men
 - Three years later one ship and 18 men returned to Spain
 - Magellan was killed in the Philippines and did not return
 - Most of the crew was killed during mutinies or died from disease or shipwrecks
- Verrazano (1485 - 1528)
 - Italian explorer who explored the coast of North America from Massachusetts to Georgia
- Cartier (1491 - 1557)
 - French explorer that raveled along the St. Lawrence River and the eastern coast of Canada
- Hudson (1565 - 1611)
 - English explorer that traveled and mapped the Hudson River

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Scientific Exploration:

- Ocean scientists continued in the wake of early explorers and navigators by investigating the oceans in a quest for scientific knowledge and a much deeper understanding of our oceans (71% coverage of Earth)
- Benjamin Franklin (1706 - 1790)
 - First to map the warm water current (Gulf Stream) that runs north the east coast of North America
- James Cook (1728 - 1779)
 - British explorer who mapped the South Pacific in search of Australia Discovered the importance of vitamin C to prevent scurvy
 - Scurvy - a disease resulting from a deficiency of vitamin C
 - Excellent celestial navigator and understood latitude and longitude Created many detailed maps Killed while exploring Hawaii
- Matthew Fontaine Maury (1806 - 1873)
 - American naval officer and Father of Oceanography
 - Published "The Physical Geography of the Sea" and "Wind and Current Chart of the North Atlantic"
- H.M.S. Challenger (1873-1876)
 - A refitted British warship which crossed all the major oceans collecting samples
 - 50 volumes worth of data included: 4700 new species discovered, temperature and pressure reading at different depths, ocean-floor sediments and tide data

Exploring the Depths:

- Early Exploration
 - Glass was developed and crude face masks allowing one to see under water (2500 BC)
 - Persian divers would recover treasures from their own ships after being sunk (400 BC)
 - Edward Haley developed the diving chamber which held larger amounts of air in a reserve barrel (1700s)
 - The diving suit, which was made of watertight canvas and a heavy metal helmet, had an air supply that was pumped from the surface through a tube to supply oxygen (1850 - 1950)
- Modern Exploration
 - Bathysphere was developed by William Beebe and consisted of a steel hulled chamber attached to a ship by a steel cable
 - Self Contained Underwater Breathing Apparatus (SCUBA) was invented by Jacques Cousteau and allowed for dives of up to 150 meters (1943)
 - Alvin is an untethered and manned submersible that was developed at the Woods Hole Oceanographic Institute that was used to find the Titanic and is still being used to explore the ocean bottom
 - Remote operated vehicle (ROV) are used to explore deep ocean depths that are unsafe for humans
 - Jason was used to enter and explore Titanic's interior and discover new life forms
 - Autonomous underwater vehicles (AUV) are unmanned and untethered that gather data
 - The Jim Suit is a carbon fiber and reinforced plastic dive suit that is used in dives of up to 600 meters to extended the working range of undersea exploration and work