Special Interest

Christopher Columbus: A Geographical Model Activity for his Transatlantic Concept

By Al M. Rocca

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Astronomer Neil de Grasse Tyson concedes that the Columbus voyage is unique; the single greatest event in human history.[1] Columbus's new global geography reunited two huge continents (North and South America) formerly isolated by the last great Ice Age. Before Columbus, and despite the brief Viking visits of the 11th century, there were in essence two worlds, one "old" and one "new." The Old World was comprised of the tri-continental cradle of humankind—Africa, Europe, and Asia. Separate from them, millions of peoples in the New World lived and died for thousands of years, developing their own cultures in complete ignorance of the Old World. Columbus would change that.

A change came quickly, to both the Old and New World, emigrating and immigrating new social and cultural experiences to and from both worlds. The Age of Exploration began by so many cultures worldwide including the Phoenicians and Portuguese, climaxed with Christopher Columbus's 1492 voyage. Before Columbus, with only a few exceptions, the planet Earth remained an intra-continental human experience with some forays into dual and tri-continental military conquests (Rome, Persia, etc). After Columbus, Europeans envisioned huge new geographic regions opening, generating enormous economic interest in vast oceanic stretches and two relatively physically undeveloped continents. A rush for lands and riches, from the Old World, created, by either design or accident, a new transoceanic form

of human domination in the New World, colonialism. The age of economic globalism had begun.

Teachers might consider having their classes investigate a key essential question, how did Columbus formulate his ideas for a transatlantic voyage? Scholars for several centuries have pondered and argued this question without achieving consensus. We are not even sure when the concept came to fruition in his mind. Geography provides an investigation tool to formulate possible answers to both questions. When completing the activities shown below, students may better understand the transition from medieval separatism to Renaissance globalism and Old World to New World geographic thinking.

One important source, his practical sailing experience, allowed him to visualize a geographic world linked globally. For this article, we will focus on his practical sailing experience in the Mediterranean Sea and the Eastern Atlantic Ocean. Thinking globally was not a new idea, as Marco Polo and others demonstrated with their west to the east overland trip to Cathay (China) and India. Chinese mariner, Zheng He sailed extensively throughout the Pacific and Indian Oceans even reaching the Arabian Peninsula.

Columbus' practical pre-1492 sailing experience is not usually mentioned in most textbooks and rarely investigated in elementary and secondary classrooms. If however, one compares the various maritime regions he sailed, one can see how he compiled geographic knowledge that allowed him to formulate his transatlantic concept. New scholarship reveals that Columbus sailed extensively in the Mediterranean Sea and the Eastern Atlantic Ocean prior to 1492. In successive geographic steps, Columbus learned, through practical experience, the major systems of winds and currents. A system of winds and currents that circulates in a cyclonic (circular) pattern is called a gyre. In the following activity, students will:

- Use Google MyMaps to outline all of the oceanic and sea regions visited by Columbus as a young mariner.
- Locate and label key islands and cities, using Add Markers, where he lived and visited in each region.
- Research the prevailing winds and currents in each zone and
- Synthesizing this information, students will be able to understand the relationship between the Mediterranean gyre and the larger North Atlantic gyre. The final step has students mapping Columbus' first voyage and explaining how Columbus used the prevailing winds to go and return on his 1492 voyage.

Note: Students can work alone or in groups.

Steps to Complete Columbus' Atlantic Zones

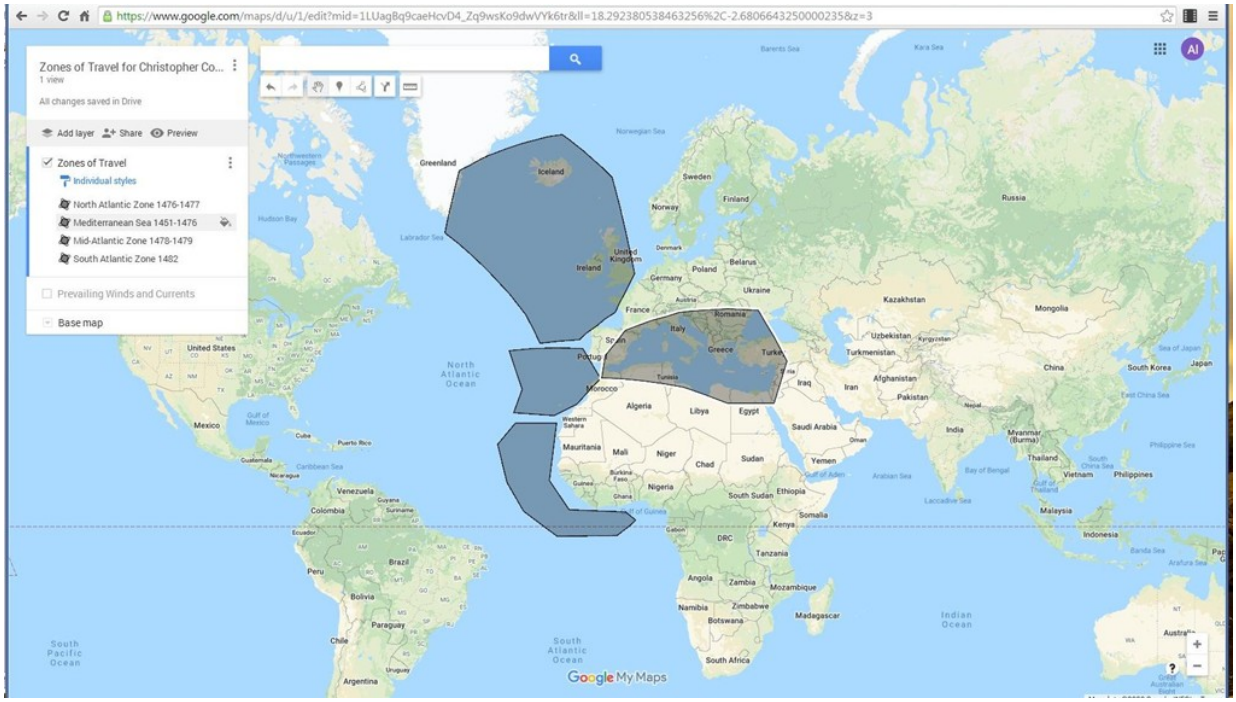
Students go to the Google MyMaps home page (click here) https://www.google.com/maps

- Use the drawing tool to outline a polygon of the entire Mediterranean Sea (from Portugal to

Syria). Label this polygon: Mediterranean Sea 1451-1476.

- Draw a polygon outline for the North Atlantic Zone: start from Portugal and move north to Northern France then move from United Kingdom to Iceland to the coast of Greenland west almost to the tip of southern Greenland. Finally, bring your line back to Portugal—the point where you started. Label this as North Atlantic Zone 1476-1477.
- Draw a polygon from southern Portugal west to the Azores Islands. Then continue the line south the Canary Islands. Finally, come north along the African coast back to the point of origin in southern Portugal. Label this polygon: Mid-Atlantic Zone 1478-1479
- For your last polygon, start from just below the Canary Islands and go 600 to 700 miles west (use your measurement tool). Next, head south, staying about 600 miles away from the African coast following the coastline. As the African coast turns east, follow it, staying 400-600 miles out. When you get to the country of Ghana, turn the line toward the coast until it just touches the country. Now follow the African coast north all the way to the point of origin just south of the Canary Islands. Label this polygon: South Atlantic Zone 1482.

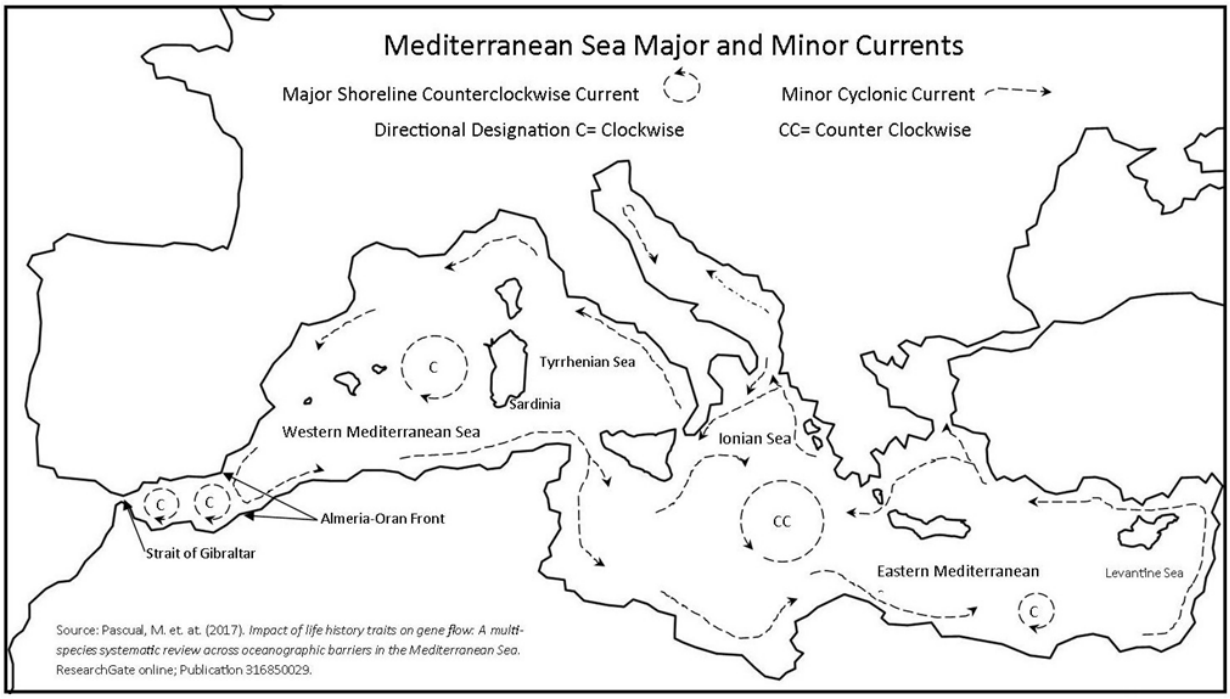
Sample completed map of Atlantic Zones Columbus sailed



Steps to Complete the Prevailing Winds and Currents

Before moving on, explain that ships in the 15th century depended on following prevailing winds and currents. Students should know that winds touch the water and create surface

currents. Then explain that Columbus, by sailing in each of the zones students just completed, began to put together a system of winds and currents for the Atlantic Ocean. Initially, as a young man, Columbus well understood the Mediterranean Sea gyre. The following map highlights that system; share this with students. Make sure students follow the dashed line that follows the coastline; this is the major Mediterranean gyre.



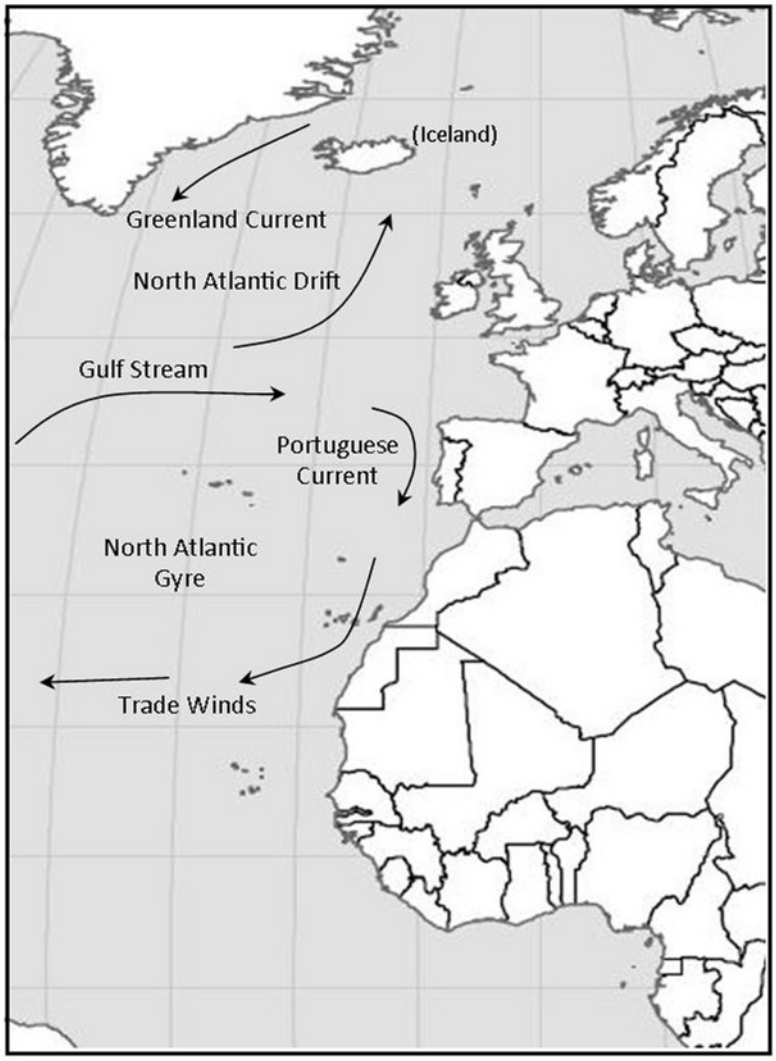
Steps for Mapping Prevailing Winds and Currents

Have students open up their Google MyMap and have them "Add Layer." This will allow them to place in the lines for winds and currents.

Mediterranean Prevailing Winds and Currents: Using the map above, students move forward and use the line tool to add short lines along the Mediterranean coastline. Turn the line into a directional arrow by simply adding a short line

⟶ to one or both sides of the main line.

Next have students use the North Atlantic Gyre map below to trace the major currents on their map.



Map Analysis: Pause here and have students notice that the Mediterranean Current flows counter-clockwise in a cyclonic shape. Sailors can use this knowledge to plan their sea voyage route. Then have them consider that Columbus, later, after sailing in the different Atlantic zones, understood that the Mediterranean currents were a small version of the Atlantic—except the flow is in the clockwise direction.

Conceptual Preloading: Columbus thought the size of the Earth was smaller than it actually is. His goal was to sail to the Indies, Cathay (China), and Japan (Cipangu). So when he reached land, North America (Bahama Islands), he thought it was the Indies.

Essential Question: If Columbus only sailed in the zones shown on your maps then how did he come to the conclusion that he could sail west from Spain to the Indies and then return safely?

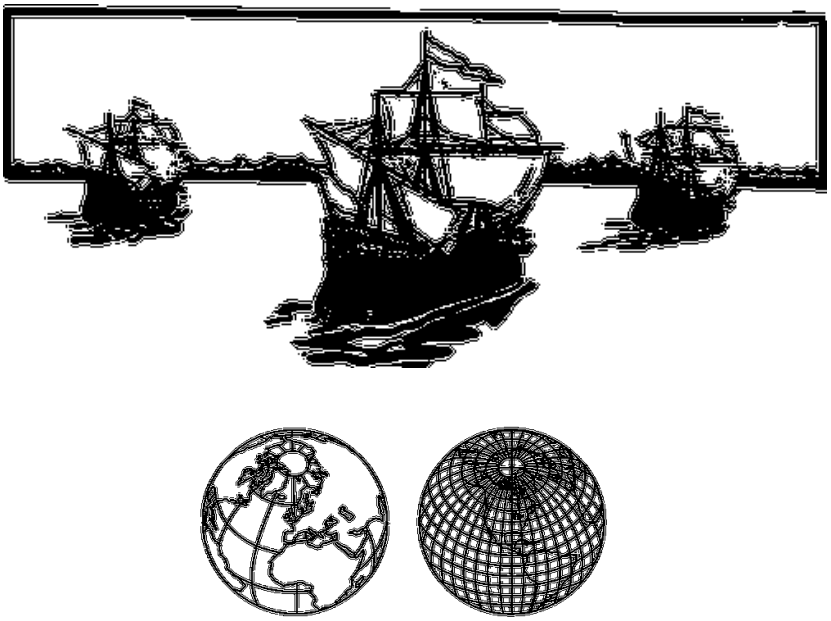
Suggested activity: In groups of three or four, have students consider the essential question. Students can project one of their maps for the class to see as they offer an answer.

Activity debriefing

Students should be able to think geographically to see that Columbus believed that the Atlantic Ocean consisted of a similar wind and current system (gyre) as he had experienced in the Mediterranean Sea. In his mind, the Trade Winds would provide the perfect winds and currents to get him to the Indies. Then he would sail north along Cathay (China) to catch the returning wind and current flow (Gulf Stream). From here, he knew he would pick-up the Portuguese Current as he returned close to Europe.

When Columbus returned to huge acclimation and honors, he felt his Atlantic gyre concept had been validated. In his subsequent three voyages and all Spanish and Portuguese thereafter, used the sea route that Columbus pioneered. With the ongoing use of this wind and the current system, European countries sent one expedition after another to explore, conquer, and settle the "New World."

With the later Ferdinand Magellan voyage into and across the Pacific Ocean, mariners learned of prevailing winds and currents. This continued with exploration into the Indian Ocean. By the mid-16th century, a comprehensive understanding of gyres resulted in a desire to link the entire world—globalism had begun.



[1]Interview, Columbus Discovering American was a Great Achievement, Joe Rogan show, August, 22, 2018. (Viewed on YouTube)