



## Ancient Sailing and Seafarers

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This project looks at how and why seafaring peoples ventured out to the deep blue, whether for trade, adventure, or conquest. Students look at how environments and situations influenced technological advances, navigation methods and more. To experience firsthand the difficulties facing ancient seafarers, the students spend days learning to sail and paddle an outrigger canoe. They examine the technology and physics of sailing while building their own sail cars that can move upwind. They consider how different societies solved problems common to water travel: stability, buoyancy, movement, and direction.

Project deliverables included the sail car, scale maps requiring trigonometry, and demonstrations explaining buoyancy, balance, and propulsion. Students exhibited these at our spring exhibition, where they also performed original plays.

### Teacher Reflection

Students create their maps on separate quadrants of wood, which are then assembled. No one is allowed to touch another student's piece of the map. This rule sets a high standard, since individual mistakes in the math, plotting, or painting become obvious when the boards are assembled. Students help each other to do the work correctly, because all four pieces are necessary to exhibit their maps.

### Student Reflection

Many components came together in a visual presentation of the journeys of ancient seafarers. Everyone learned the fundamentals of cartography, the importance of meticulous calculation, and trigonometric functions behind every scaled map. We had to work efficiently in teams with people we had never talked to before, creating a professional piece for display. Making a map from scratch was a magnificent way to learn about real world math connections and the seafarers that traveled the ancient world.

—Christiane Pham, 9<sup>th</sup> grade

To learn more about this project and others visit [www.hightechhigh.org](http://www.hightechhigh.org) and Juli Ruff's digital portfolio at <http://dp.hightechhigh.org/~jruff>

