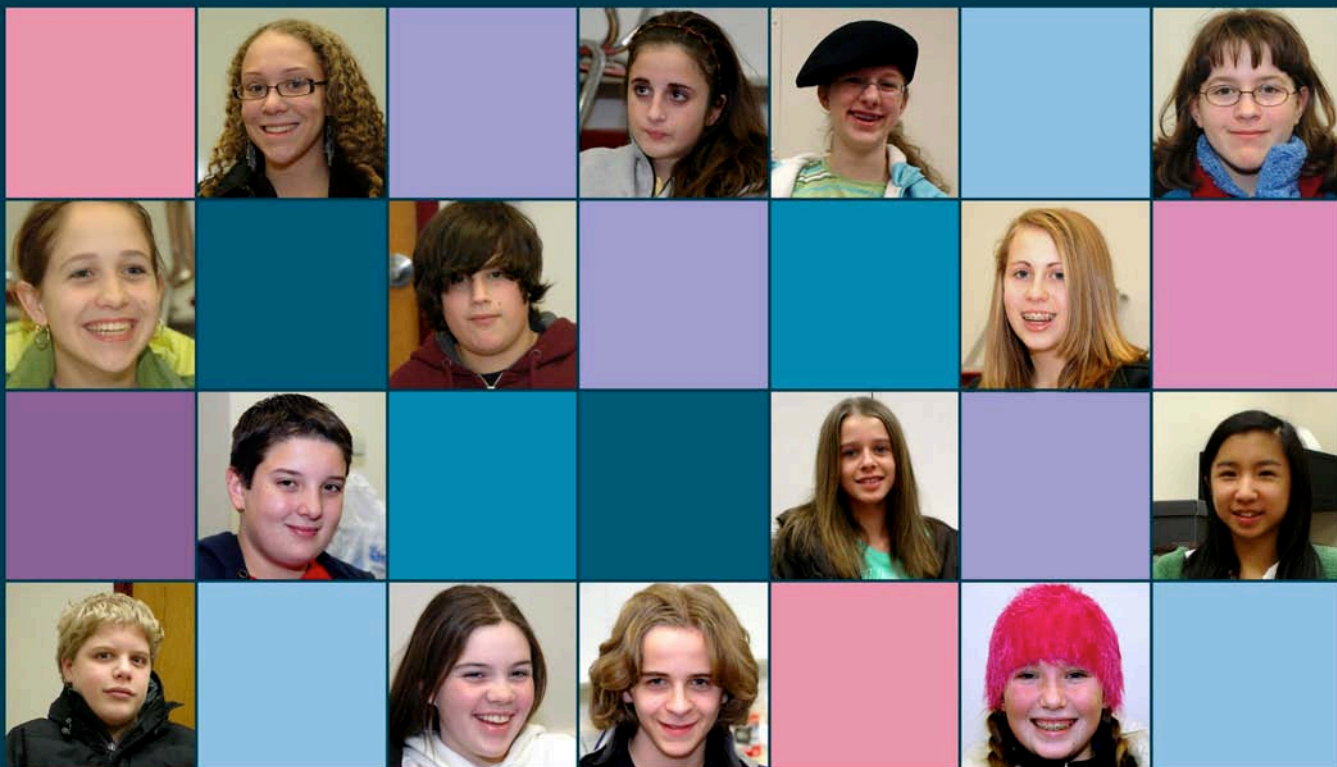




# Explore the Universe

The Stars Challenge at Monmouth University



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Winter 2007

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## The Stars Challenge

The universe is vast beyond our comprehension. Where do we fit in? Is the Earth the only planet with life? Or is the universe bustling with living beings? How can we use science and technology to find out what's "out there"? Students addressed these and other questions through a variety of hands-on activities.

We made star wheels and learned to identify some of the 10,000 stars visible on a clear night. We'll never get lost again, now that we know how to use the Big Dipper and other constellations to find North. We mastered the skills required to operate a telescope, and were rewarded with views of the moon that took our breath away (or was it the bitterly cold February air?). Moving inside, we investigated phenomena such as waves and light, tools that are essential to further our understanding of the Cosmos. We saw how cosmic collisions, when objects from space hit the Earth with devastating consequences, influenced our past and will impact the future of humanity. Finally, we "homesteaded", looking for places beyond the Earth where humans will live one day.

Look at the stars whenever you can. Exhale with wonder. Feel the shiver run down your spine as the grandeur sinks in. Smile. Curiosity about our place in the universe is part of what makes us human. Mr. Coe

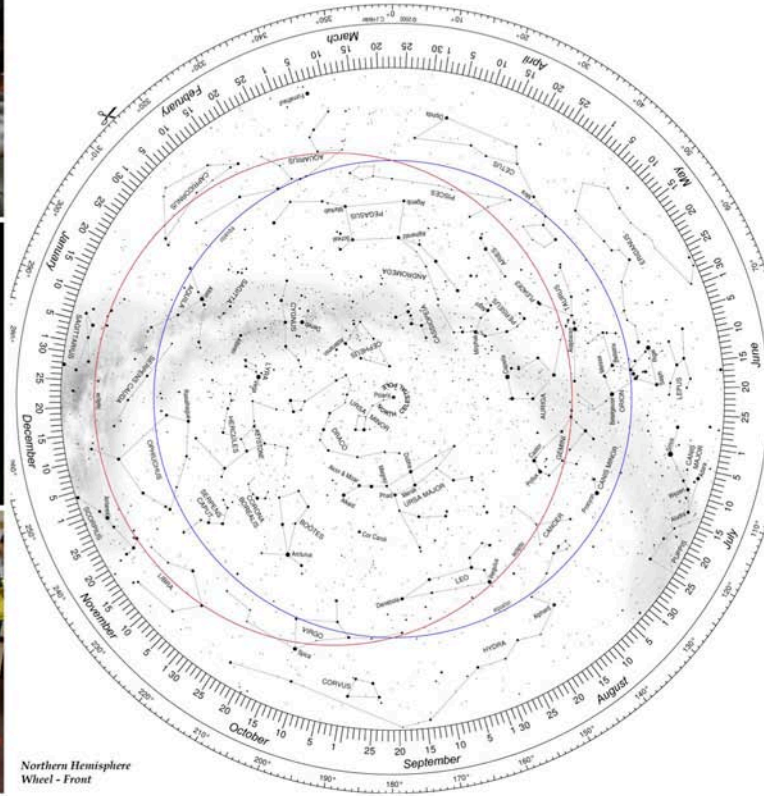


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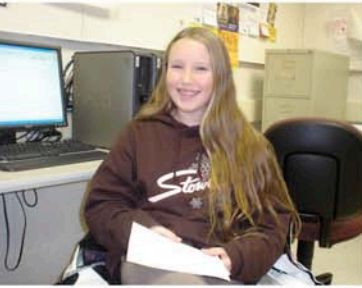
**Star Wheel**

*Northern Hemisphere Wheel - Front*  
(Use zone optimization: east side)

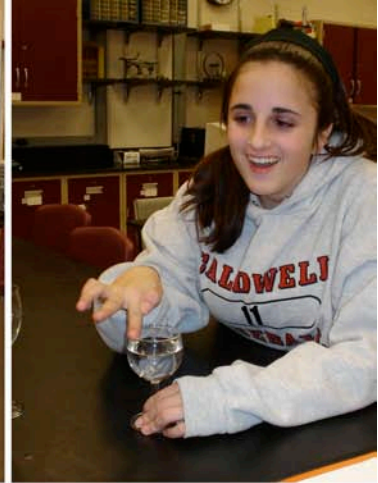
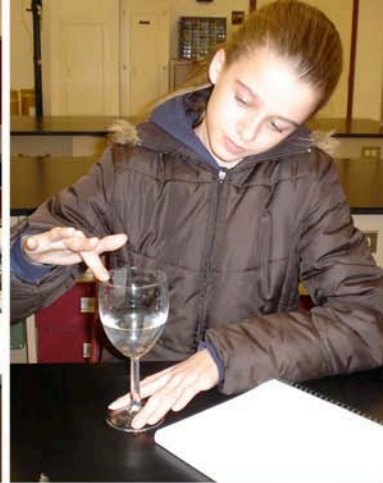
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We made a star wheel and used it to identify stars and constellations. Is that Eleanor or Santa Claus or a star wheel?



Nick and Jane used Moodle and the Internet for star maps. Then we went outside to find Polaris.



We learned about waves and that led us to the wave theory of light. Jessica, Brinley and Sophia make the wine glasses "sing". Danielle and Erica experiment with waves.



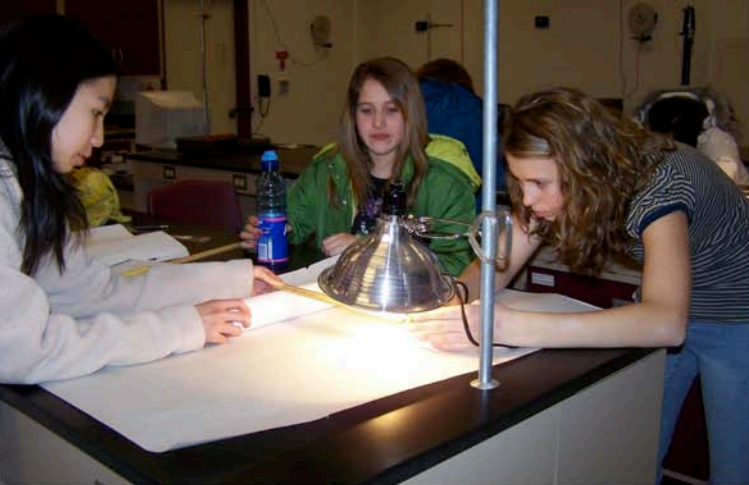
We learned about refracting and reflecting telescopes. We observed the mountains and craters of the moon. Matt and Erica try out the telescopes.







We studied light, the size of shadows, and why shadows have fuzzy edges. Ashley and Allison study shadow sizes while Morgan and Matt "conduct scientific research" on spoons.



Danielle, Brinley, and Erica measure the size of shadows. Sophia, Jane, Morgan, and Eleanor set up their experiment.

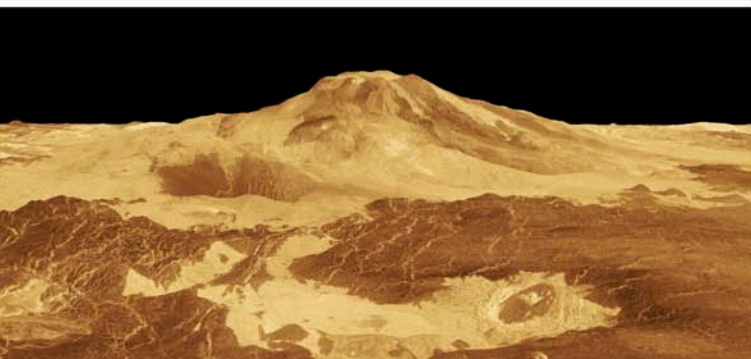
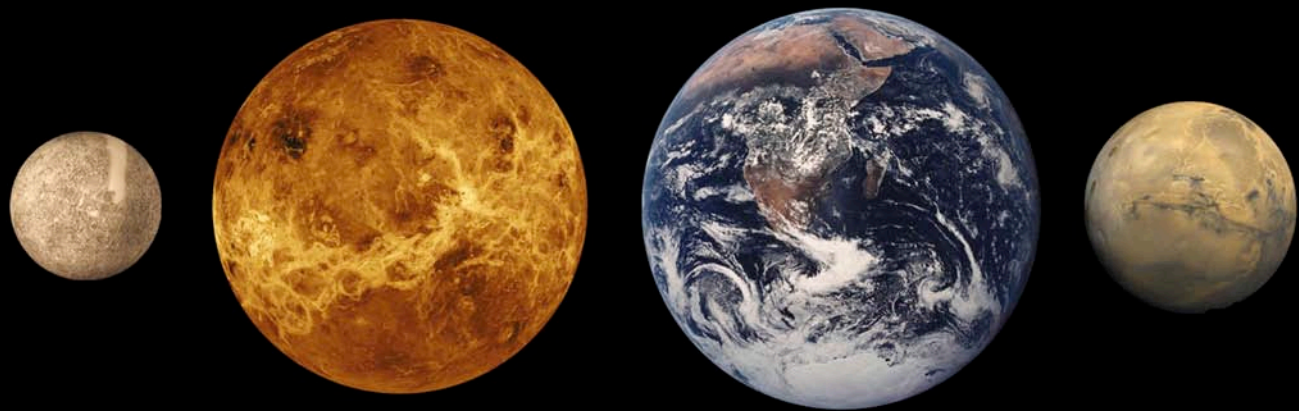


We discussed the possibility of other life in the universe. We developed the mathematical relationship between the number of reflections of a toy soldier and the angle of the mirror.





We discussed which planet or moon in our solar system would be best for a colony and began to research how to construct such a colony. Morgan and Eleanor find surprises.





We explored the impact of an asteroid hitting earth with sling shots, marbles, and flour. Jessica and Morgan confer with Mr. Coe.

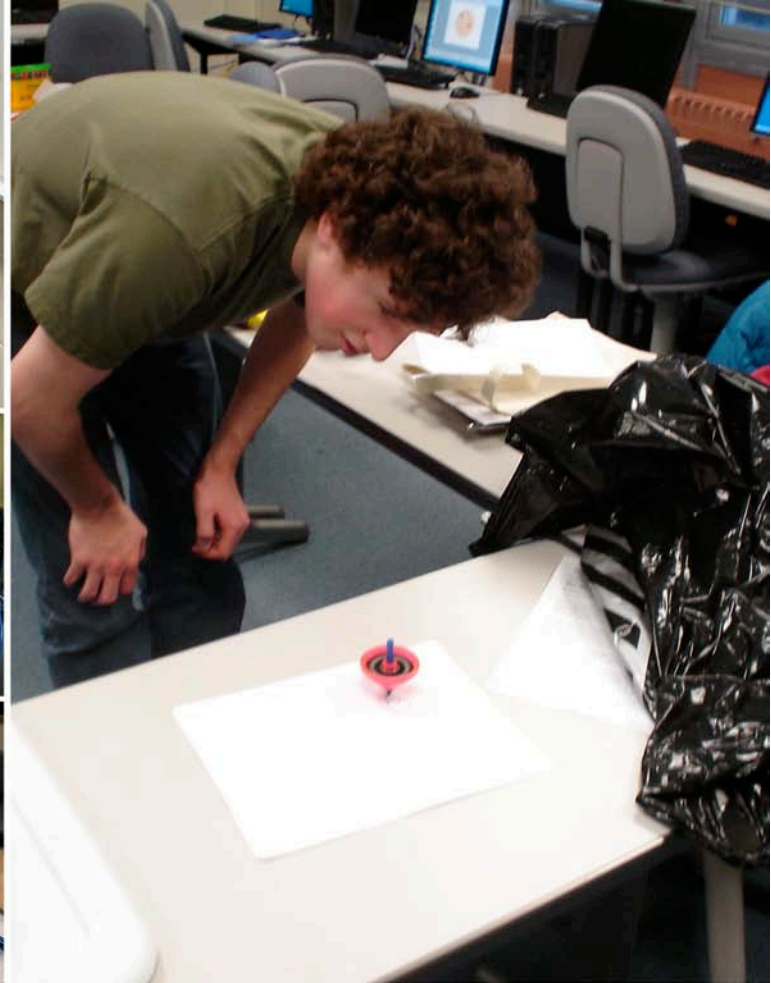


Morgan and Jane measure the simulated impact of a meteor hitting the earth. We made a wonderful mess.... that we cleaned up!





Ashley used Dan's sun telescope to observe jets from the sun and sunspots.



Chris and Nick begin to build their colony.

