



# Explore the Universe

The Stars Challenge at Monmouth University 2008



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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?). 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.

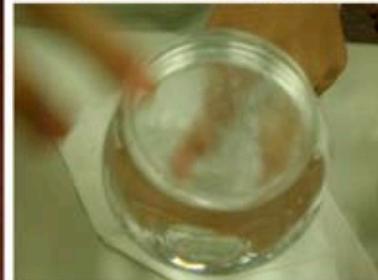
Look at the stars whenever you can. Exhale with wonder. Feel the shiver run down your spine as the grandeur sinks in. Smile. Curiosity about our place in the universe is part of what makes us human.      Mr. Coe



Studying standing waves using a slinky. And having fun doing it!



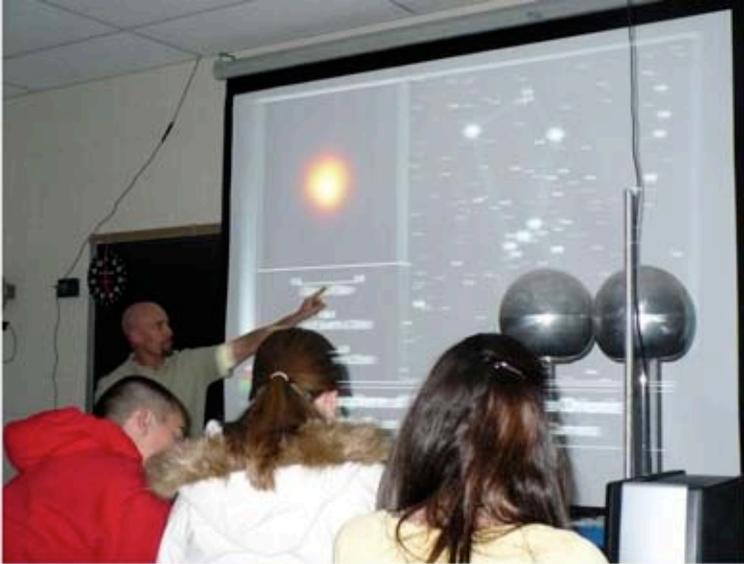
Understanding why Helium makes you "talk like a duck". Is it because Helium is less dense than air?



Investigating waves and sound using "singing glasses". How does the amount of water change the frequency?



A convection experiment to illustrate the flow of gasses on the surface of the sun or a planet.



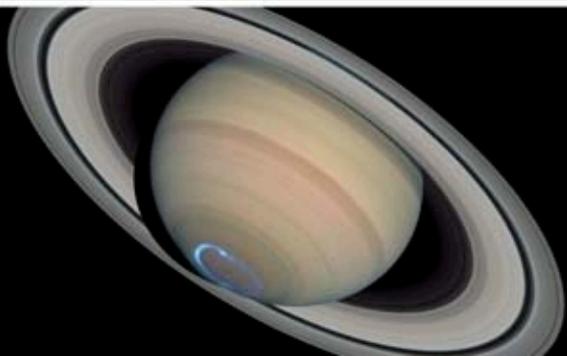
The physics lab at Monmouth University has all sorts of interesting equipment.



We used Moodle to store information and communicate between classes.



Making star wheels so we have a map of the night sky for any given location, date, and time.





Getting ready to head outside with the telescopes. Our first really clear night!



We experimented with both reflecting and refracting telescopes -- on a very cold night.







The sky was very clear at Cedar Drive School. There was very little light pollution.





We experimented with the melting time for various color crayons. And for chocolate silver bells. Which must, of course, be sampled.



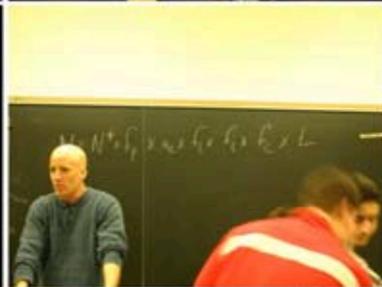
**Erin, Nikki, Emma**  
**Maple Place School**



**Elise**  
**High Technology High School**



**Emily, Casey, Rob, Kevin, Talga  
Craig, Joe, Julia, Jessalyn, and Aileen  
Cedar Drive School**





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Made on a Mac