



Explore the Universe

The Stars Challenge at Monmouth University 2010

The universe is vast beyond our comprehension. Where do we fit in? How have events far away in time and space driven the evolution of life and permitted our existence? Is the Earth the only planet with life? Or is life common on the worlds orbiting other stars? How can we use science and technology to begin to answer such profound questions?

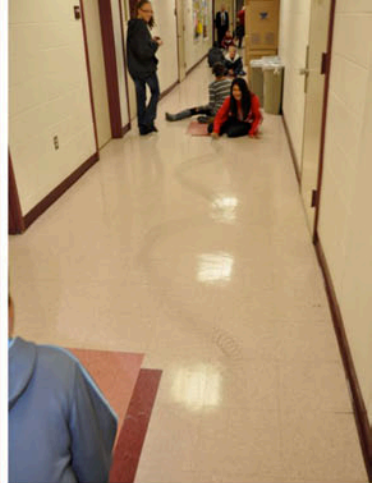
We made star wheels and learned to identify some of the 10,000 stars visible on a clear night. We'll never get lost again, now that we know how to use the Big Dipper and Cassiopeia to find North. We mastered the skills required to operate a telescope, and were rewarded with views of the moon, Jupiter, Mars and the Orion Nebula that took our breath away.

Waves and light were investigated. An understanding of both is required 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 our future. Finally, we constructed rockets, the only vehicle we have (so far) to leave the Earth. Of course, we had to solve problems of symmetry and balance to get our rockets to travel at all.

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.

It's been a pleasure working with you.

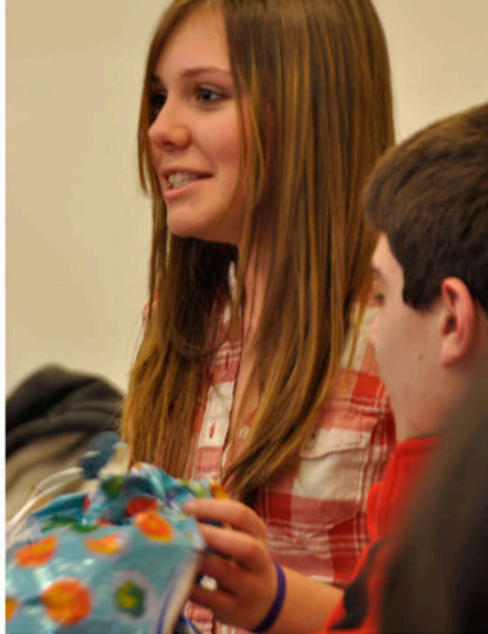
E. Marc Coe



Look at those slinkies fly! A variety of waves were constructed and studied. We made standing waves and investigated nodes. We also modeled compressional and longitudinal waves.



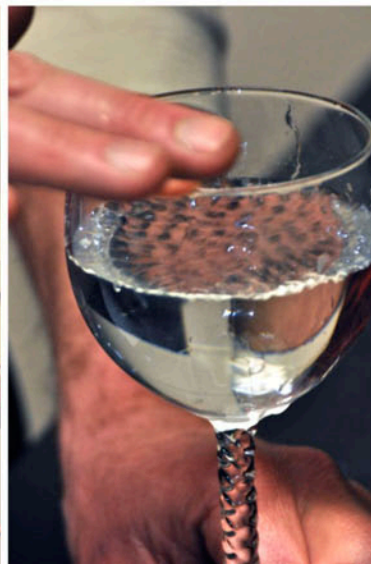
On one of the very few clear evenings, we were dazzled by the king of the planets, Jupiter, complete with its procession of moons.



Talking like chipmunks was the high point of this class. We explored how the properties of waves influence the sounds you hear.

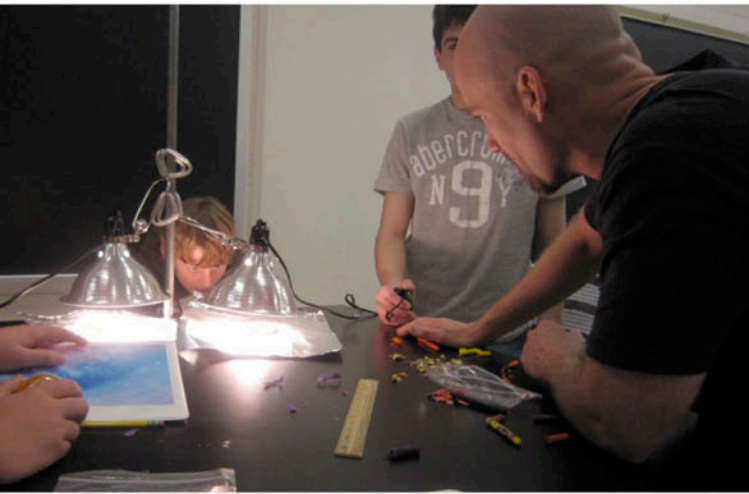


By varying the level of water in wine glasses, we were able to vary the pitch of the sound waves and make music.





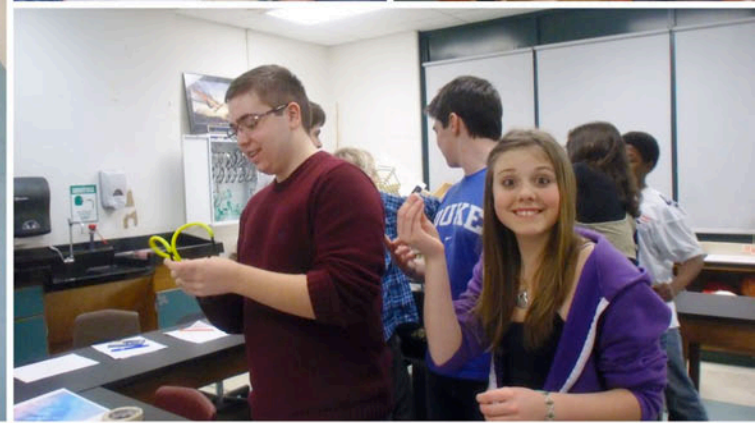
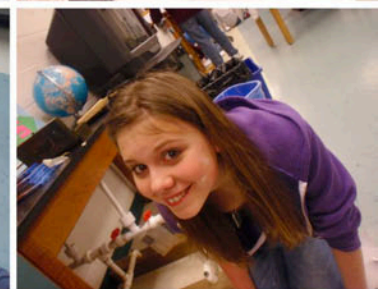
Some of us were better musicians than others.



We studied how colors effect heat absorption. Dark colors melt faster, which may explain why darker worlds are hotter than lighter ones.

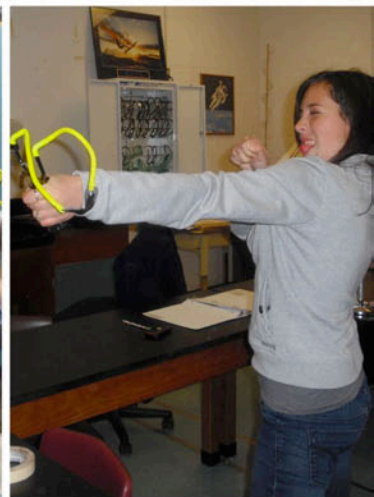
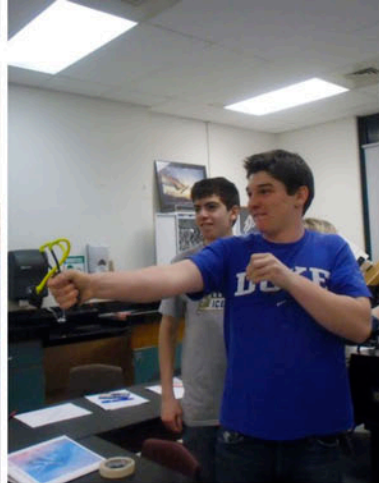
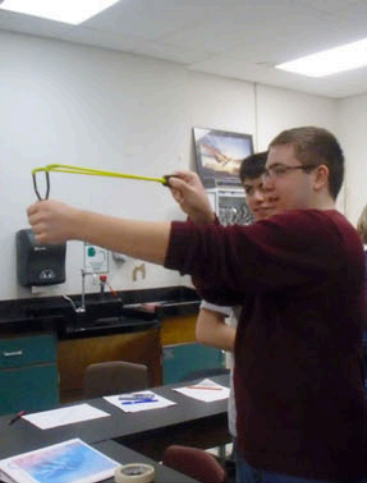


Who would have thought melting crayons would be so much fun!



Flour and slingshots were used to study impact events. Also to make a tremendous mess!



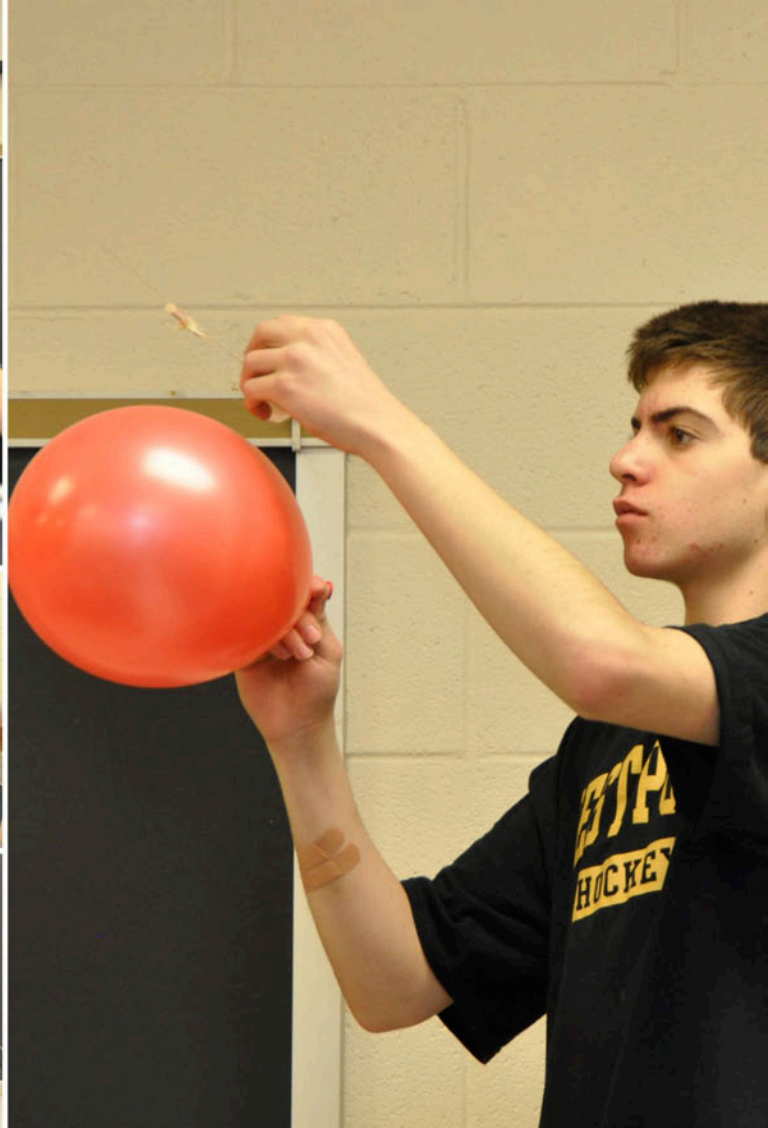
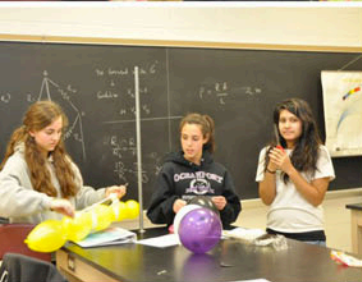


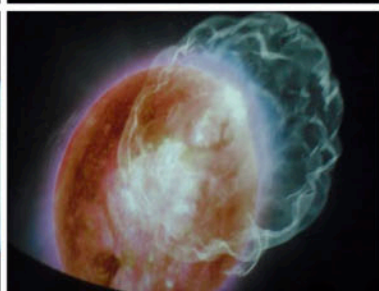
Tom Sawyer would have been proud of our slingshot skills.





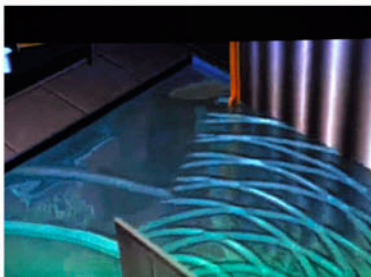
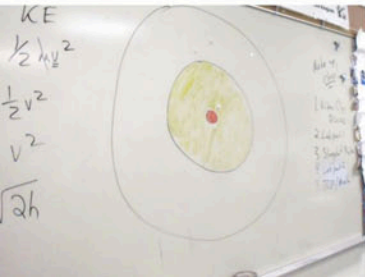
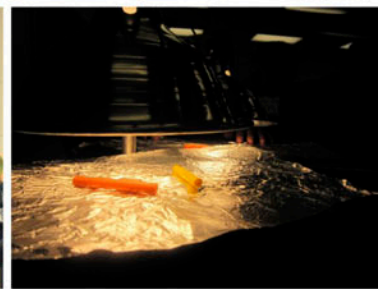
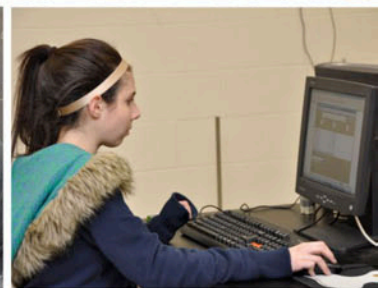
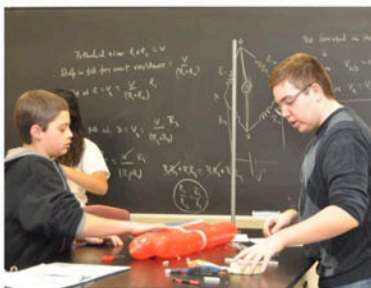
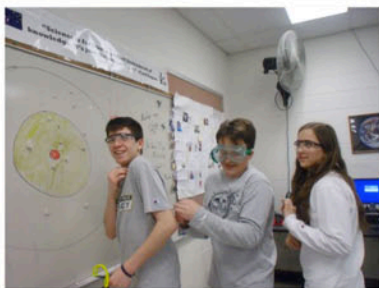
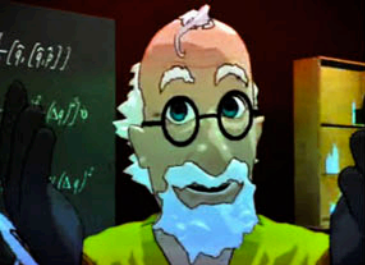
We used balloons to construct rockets. We learned that simpler designs tend to be more effective than complicated ones.





The Star Lab was extraordinary! A planetarium and IMAX theatre rolled into one.







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Made on a Mac