



Explore, Imagine, and Build

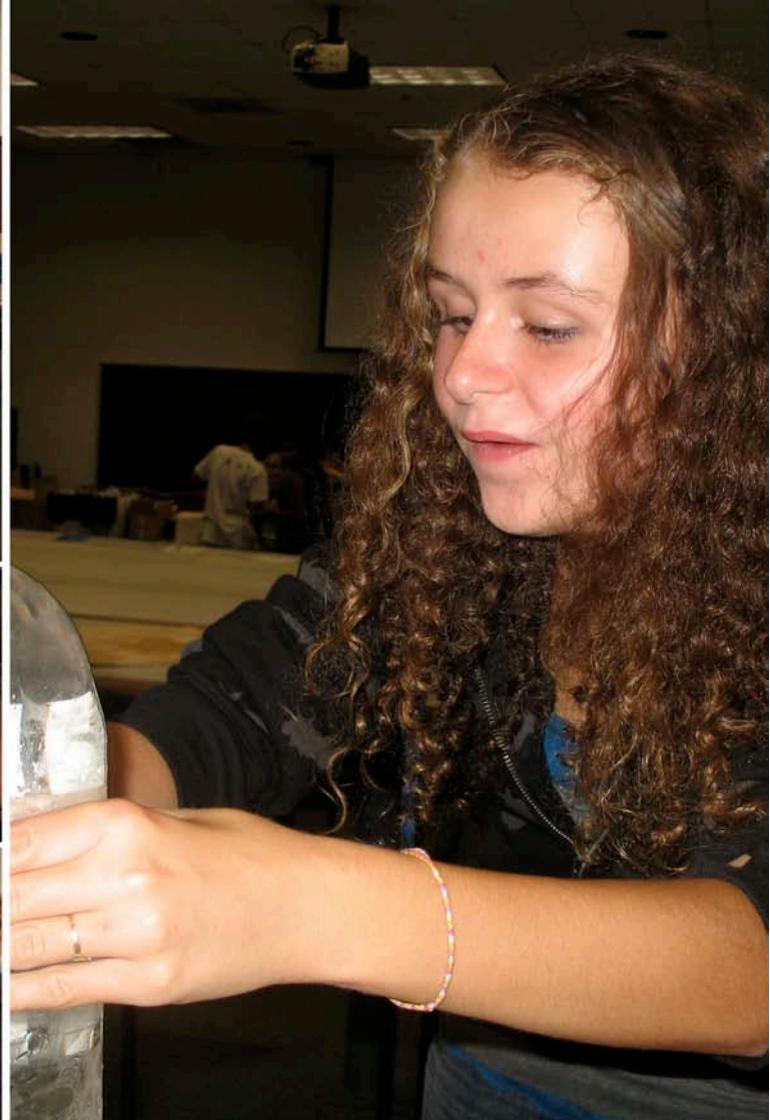
The Stars Challenge at Monmouth University



The Stars Challenge *Explore, Imagine, and Build* at Monmouth University Fall 2007



Students created Cartesian divers to illustrate both buoyancy and Archimedes's principle. Finesse and patience were required. Students were ecstatic when their designs finally worked.





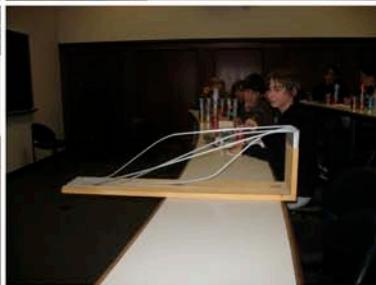
The students learned the difference between mass, volume, and weight through a series of interesting demonstrations and discussions.





By adding the right amount of sand, students were able to see what a can of soda would feel like on the moon and various planets.



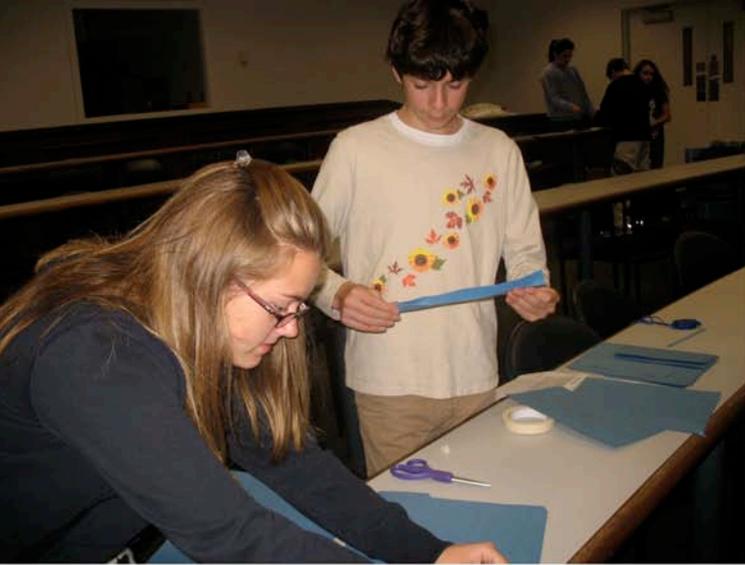


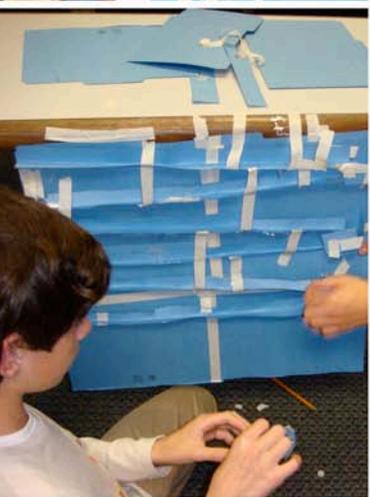
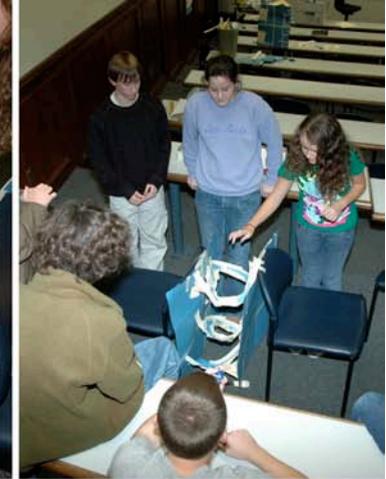
Students learned about potential energy and kinetic energy through experiments with balls rolling down ramps with various shapes.





Students used their knowledge of potential and kinetic energy to design roller coasters. The objective was to take the longest time for the ball to roll down the roller coaster.



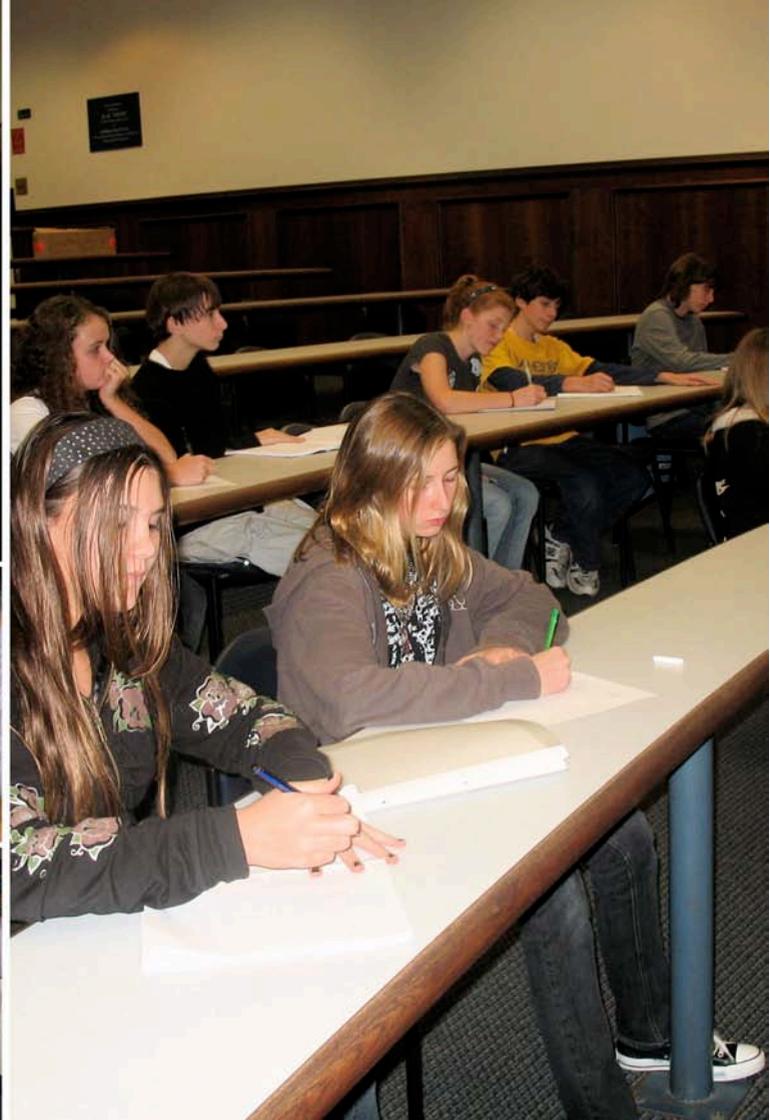


Students completed their innovative roller coaster designs. The "slowest" designs used a 3-dimensional roller coaster.





The students created wooden "bumper cars" with attached water bottles to demonstrate conservation of energy and energy transfer.





Students used their knowledge of electricity to create capacitors from aluminum foil and plastic cups. The results were quite shocking!





The students created simple electric motors from a battery, magnet, and coil of wire.