



Olympics of the Mind

The Stars Challenge at Monmouth University 2010

As always, I am so impressed with how well all of you faced each challenge. Each week we learned a new physics principle and then used that principle to win a competition, the winning teams receiving the sweet taste of victory donuts!

All of us were winners as we all learned so much. We started the class learning about Bernoulli's principle by designing slow descent helicopters and guiding ping-pong balls through hoops. We then studied inertia as we guided bowling balls around a course and weighted wooden dowels balanced on our fingertips around a course. We continued our study of inertia by trying to get the most pennies stacked on top of a hoop to fall into a bottle. We studied structures by experimenting with beams and tubes. Then we put our knowledge to work by designing paper and spaghetti gun-drop towers. We didn't stop there. We tried our hand at designing paper cup windmills that would lift the most weight. We investigated energy by designing slow descent marble roller coasters built from cardboard. We finally finished the class, as we began, by applying Bernoulli's principle to design the longest gliding paper airplane.

As I stated earlier, we were all winners in these competitions because we competed with the goal of learning new things and to have fun!

Mr. Valente



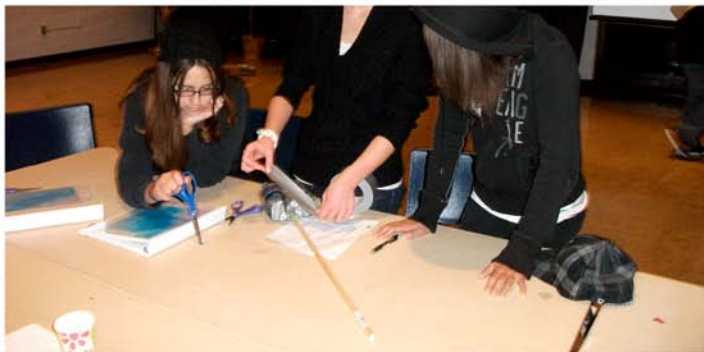
Connor test his slow descent helicopter. Sam and Tyler plan on using balloons to slow the descent of his helicopter while Alex plans on enlarging the wings. Which design works best?



The class tries their luck using Bernoulli's principle to guide the ball through the hoops. Both Cori and Jouke succeed. Will the others?



Allie and Bryan practice the course. Allie is thrilled with her performance! Mr. Valente demonstrates the inertial dollar bill challenge (center picture) while the class watches and plans their strategies to win.



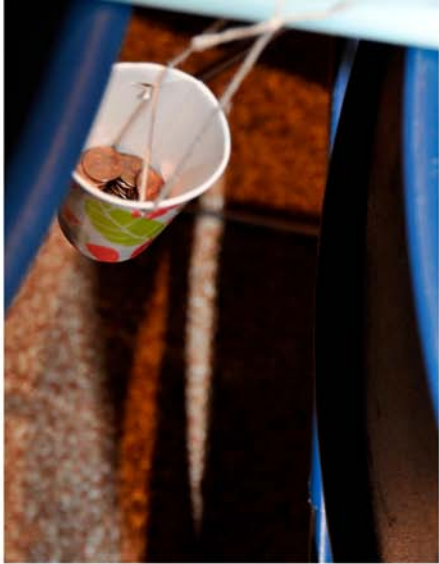
Mr. Valente cheers Emma on as she guides the bowling ball through the course.

The class watches as Mr. Valente demonstrates the inertial water bottle competition. Kayla cheers Alex as she tackles this challenge. GiAnna is trying her best to keep the bottles balanced. Both girls succeed!





Evan and Tyler are given some last minute coaching for the inertial water bottle competition. Mary Kate, Bryan and Jouke laugh at the competition.



Emma and Tyler prove that a tube is stronger than a beam. GiAnna and Mary Kate experiment with rotational inertia.



Alex tries her hand at the inertial penny competition. Emma and Kayla are having way too much fun. Bryan nails it!



Connor and Eric go for the record-over 60 pennies straight into the bottle!! The thrill of victory and the sweet taste of donuts!



Skyler coaches the teams on how to build the tallest paper tower.



Are Allie, Alex and Kayla building the tallest paper tower?



Eric is praying that his team's paper tower is the tallest. As Skyler measures, Emma knows that it is. Bryan is just happy that his team's tower stands.



Bryan and Tyler think they have the tallest spaghetti gum drop tower. Wait! Are they holding the tower up? Good try but no donuts!



Jouke, Eric and Sam build their spaghetti gumdrop tower while Emma, Alex and Cori build theirs in the battle between the guys and girls. The girls think they have the boys beat!



Allie doesn't like the competition. While Eric and Evan think their paper cup windmill will lift the most weight, Jooke is excited with his team's design. Cori is not so sure.



Connor thinks about how to proceed to the next step. While Emma adds more pennies to her team's paper cup windmill. Skyler does some coaching. Mary Kate and Tyler test their team's design.





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