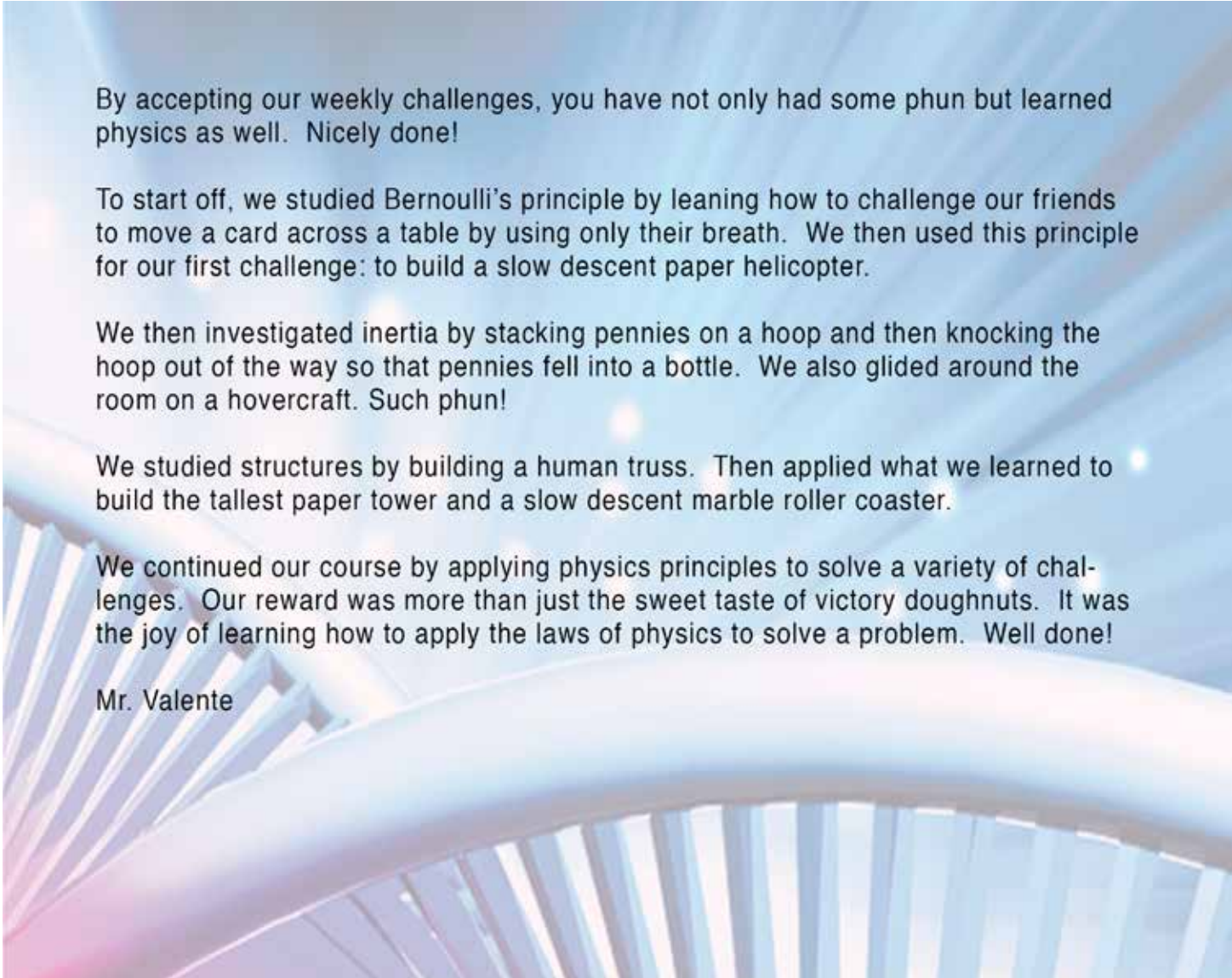




the stars  
challenge

Olympics of the Mind  
Fall 2017





By accepting our weekly challenges, you have not only had some phun but learned physics as well. Nicely done!

To start off, we studied Bernoulli's principle by leaning how to challenge our friends to move a card across a table by using only their breath. We then used this principle for our first challenge: to build a slow descent paper helicopter.

We then investigated inertia by stacking pennies on a hoop and then knocking the hoop out of the way so that pennies fell into a bottle. We also glided around the room on a hovercraft. Such phun!

We studied structures by building a human truss. Then applied what we learned to build the tallest paper tower and a slow descent marble roller coaster.

We continued our course by applying physics principles to solve a variety of challenges. Our reward was more than just the sweet taste of victory doughnuts. It was the joy of learning how to apply the laws of physics to solve a problem. Well done!

Mr. Valente





The students accept the challenge to design and build the slowest descent helicopter.



Proudly showing off their helicopter designs.





Eagerly learning about Bernoulli's principle...



...and then applying this principle to guide a ping pong ball, using the air stream from a hair dryer, through hoops to win the challenge.





The students continue to apply Bernoulli's principle to design a windmill to lift the most pennies in the least amount of time.



Designing their windmill.





We studied inertia by stacking the most pennies on a hoop and then knocking the hoop out of the way so that the pennies fell into a bottle.



Practice makes perfect. Winning number of pennies, 40. Wow!





Guiding a bowling ball around with a broom may seem strange but not if you are studying inertia.



We then studied structures by designing the tallest freestanding paper tower.





Continuing our studies of structures, we designed and built the longest cantilever structure.



Demonstrating how cantilever bridges are designed, the students build a human cantilever and then use this engineering design to build their cantilever structure.





The class accepts the challenge to design and build the tallest tower capable of supporting a marshmallow out of only 30 strands of spaghetti.



We ended our design challenges by building a slow descent marble roller coaster as a study of potential and kinetic energy.





Designing their roller coasters.



The students enjoy the victory of their success by enjoying the sweet taste of doughnuts.



