



the stars  
challenge

**Patterns in Nature**  
Winter 2015



If a child is to keep alive his inborn sense of wonder, he needs the companionship of at least one adult who can share it, rediscovering with him the joy, excitement, and mystery of the world we live in."- Rachel Carson

Rachel Carson mentions the need for one adult- we found seven. :)

It was our pleasure to direct this spring's interdisciplinary Stars Challenge enrichment course. We welcomed the opportunity to network and coordinate the talents and expertise of many extraordinary teachers such as Mr. Marc Coe, Mr. David Fusco, Ms. Erin Colfax, Mr. John Bartlett, and Ms. Aimee Babbin. We were also lucky to have an enthusiastic group of students, even though the snow tried to dampen our enthusiasm a few times. Most people think of the classroom with the flow being from teacher to student. In our case, the classroom became a positive feedback loop (a pattern we didn't teach you!). We all learned from each other and walked away each evening looking forward to the next week's gathering.

Thanks for being so much fun!  
Mr. Roche and Ms. Gross



Opening night began with introductions and the start of friendships as the students tried to outwit and outlive each other in the natural selection challenge.



A fine looking crew! Especially our new TA, Katie, who has no idea what the future may bring :-)



How can we use patterns to contribute to citizen science? Mrs. Gross led us through a role-playing debate on ways to save the monarch butterfly migration...



and then we studied the tragedy of the commons, a pattern that humans control. Plus, we got to eat candy hearts!



Mr. Fusco helped us create dandy candy models of DNA. It was hard to put them together without taking a bite out of the delicious sweets but the final product was delectable!



The second part of the night centered around an awesome experiment where we extracted nucleic acid from strawberries and bananas. It was messy and wet and tons of fun!





Using the slow motion features of some student smart phones helped with visualization of transverse and longitudinal waves.



Ms. Babbin shared diffraction gratings that were quickly combined with smart phones to capture some dazzling patterns of light.



Ms. Babbin also helped the students explore patterns involved with the chemistry of water on molecular and macro levels.



Do not try this at home: We made our own tie dye!



How can a pineapple know about the Fibonacci series if I don't ????



The students also created tessellations with Mr. Bartlett and discovered a ratio common to human anatomy.



Poricy Park provided a perfect setting for our final session that challenged powers of observation, creativity, perception...



... interpretation, artistic expression in the form of eco-art and a solar challenge that had one team heat air to over 100 F in under 5 minutes!









