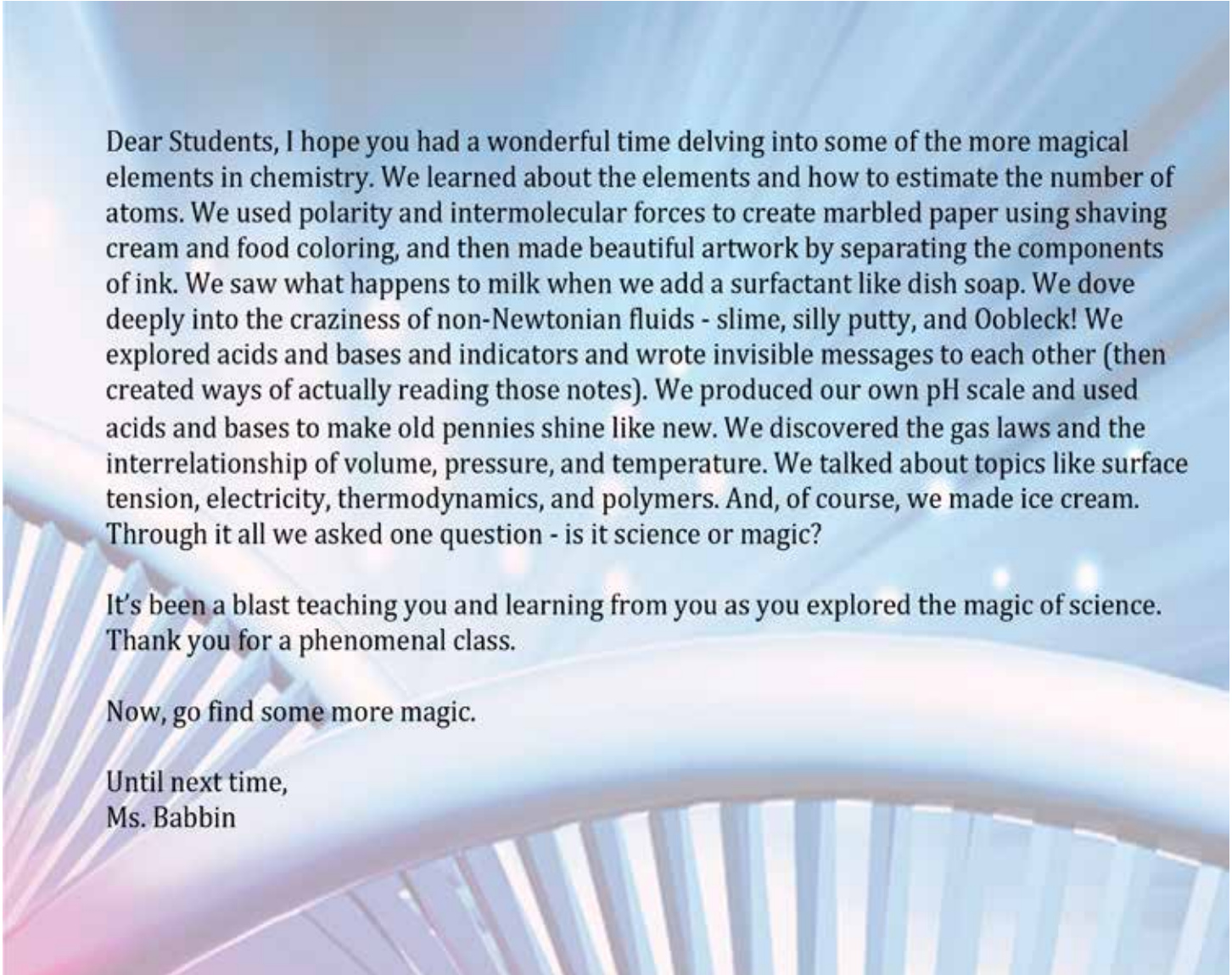




the stars  
challenge

**Is it Science or Magic?**  
Fall 2017





Dear Students, I hope you had a wonderful time delving into some of the more magical elements in chemistry. We learned about the elements and how to estimate the number of atoms. We used polarity and intermolecular forces to create marbled paper using shaving cream and food coloring, and then made beautiful artwork by separating the components of ink. We saw what happens to milk when we add a surfactant like dish soap. We dove deeply into the craziness of non-Newtonian fluids - slime, silly putty, and Oobleck! We explored acids and bases and indicators and wrote invisible messages to each other (then created ways of actually reading those notes). We produced our own pH scale and used acids and bases to make old pennies shine like new. We discovered the gas laws and the interrelationship of volume, pressure, and temperature. We talked about topics like surface tension, electricity, thermodynamics, and polymers. And, of course, we made ice cream. Through it all we asked one question - is it science or magic?

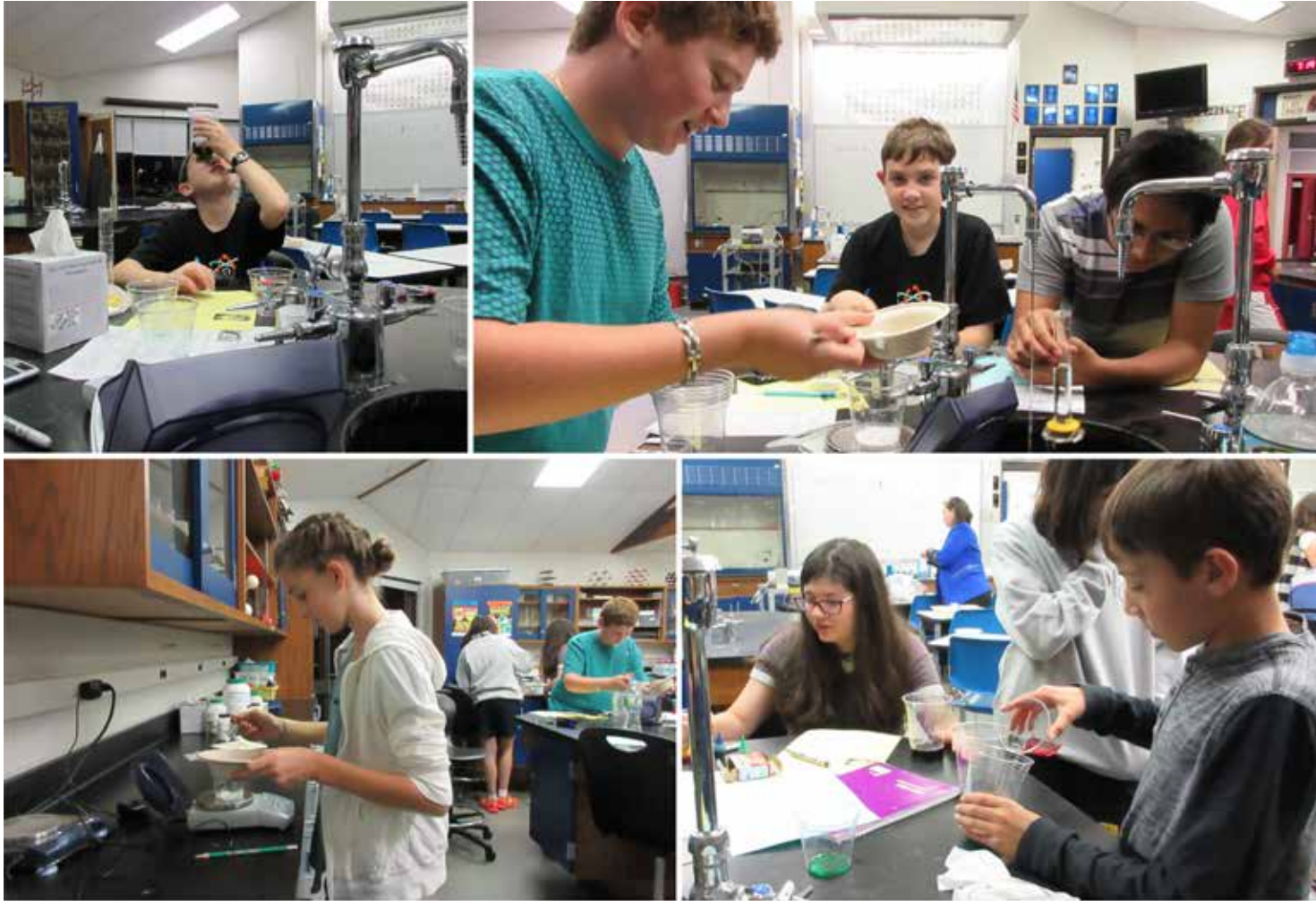
It's been a blast teaching you and learning from you as you explored the magic of science. Thank you for a phenomenal class.

Now, go find some more magic.

Until next time,  
Ms. Babbitt



Practicing lab techniques!



Measuring out salt and making different density solutions.



Analyzing intermolecular forces and polarity. What happens when we try to mix polar and nonpolar molecules?



Look at these amazing examples of milk kaleidoscopes!



More work on intermolecular forces. We went outside to try to minimize the mess!



How many drops of water were you able to fit on the penny? What property allows the drops to stick together on the surface?





Polymer time: silly putty, Ooblek, and super-absorbent materials.



It's time for slime!



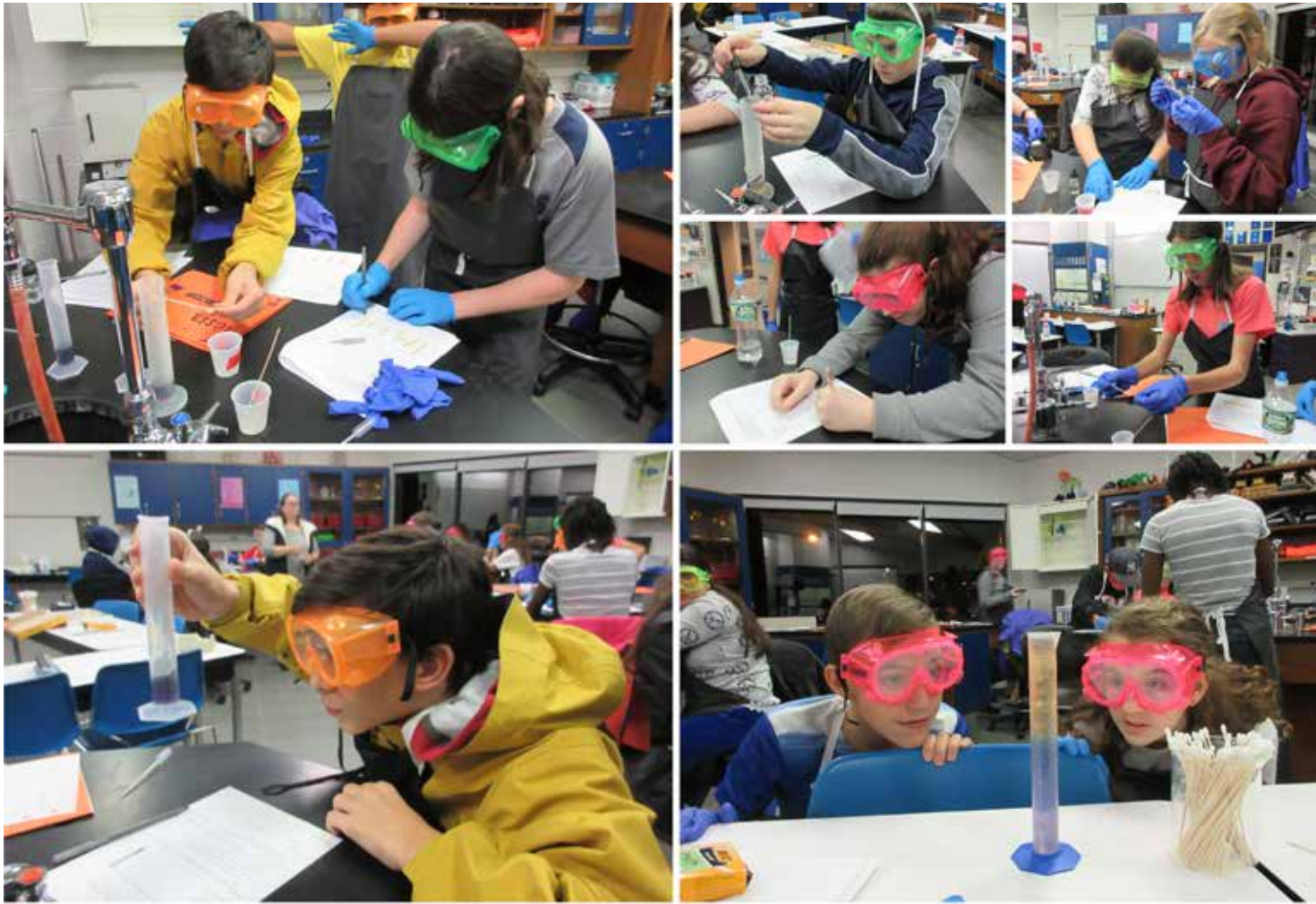
How far could you stretch your slime? What happened in the pool of Oobleck when we pressed on it?



Amazing, color-changing slime!



Simulating acid rain by blowing carbon dioxide into water. What happened to the pH of the water in your cups?



Acids, bases, and density



The "magic" of acid/base indicators. We watched a solution change colors and made our own indicators from cabbage. What was the difference in color between acidic and basic solutions?



Exploring the various gas laws. What happened to the can when we put it in cold water?





Creating invisible messages and devising ways to read them. What secret messages would you send?



What affects the rate of a reaction? We analyzed three factors: catalysts, temperature, and surface area. And the oxygen gas bubbles were pretty cool, too!



