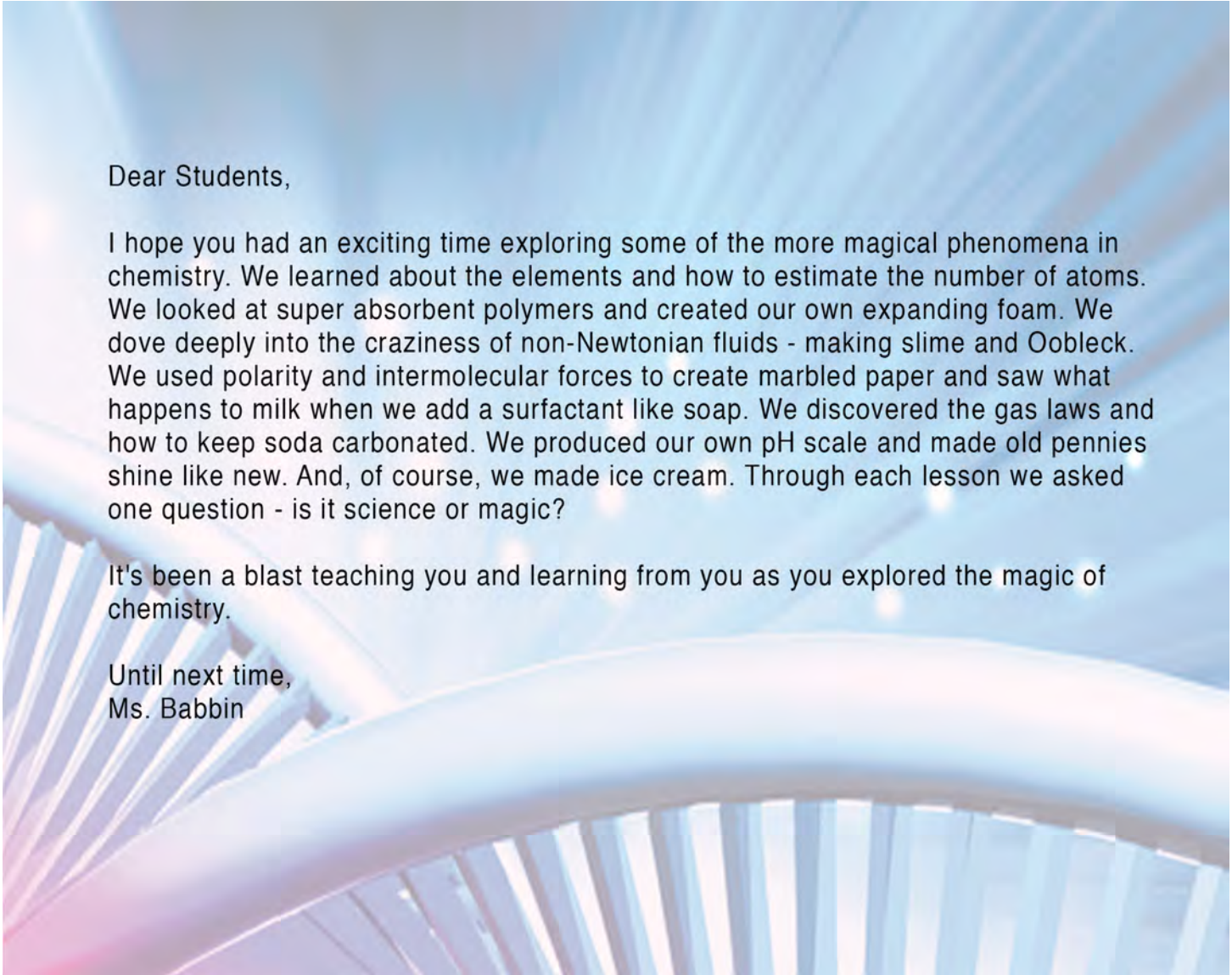




the stars
challenge

Is it Science or Magic?
Fall 2019





Dear Students,

I hope you had an exciting time exploring some of the more magical phenomena in chemistry. We learned about the elements and how to estimate the number of atoms. We looked at super absorbent polymers and created our own expanding foam. We dove deeply into the craziness of non-Newtonian fluids - making slime and Oobleck. We used polarity and intermolecular forces to create marbled paper and saw what happens to milk when we add a surfactant like soap. We discovered the gas laws and how to keep soda carbonated. We produced our own pH scale and made old pennies shine like new. And, of course, we made ice cream. Through each lesson 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 chemistry.

Until next time,
Ms. Babbin



Calculating the number of "atoms" of beans using average mass. It's much easier than counting the total number of beans!





Investigating polymers and all the cool things they can do. A newborn-sized diaper was able to hold an entire liter of water! Super absorbent polymers are also really great props for a magic trick!





Is it Science
or
Magic?

Polyurethane foam - two liquids are mixed together and they expand into a foam. When the polymer hardens it can be used in a variety of applications, such as insulation for homes.



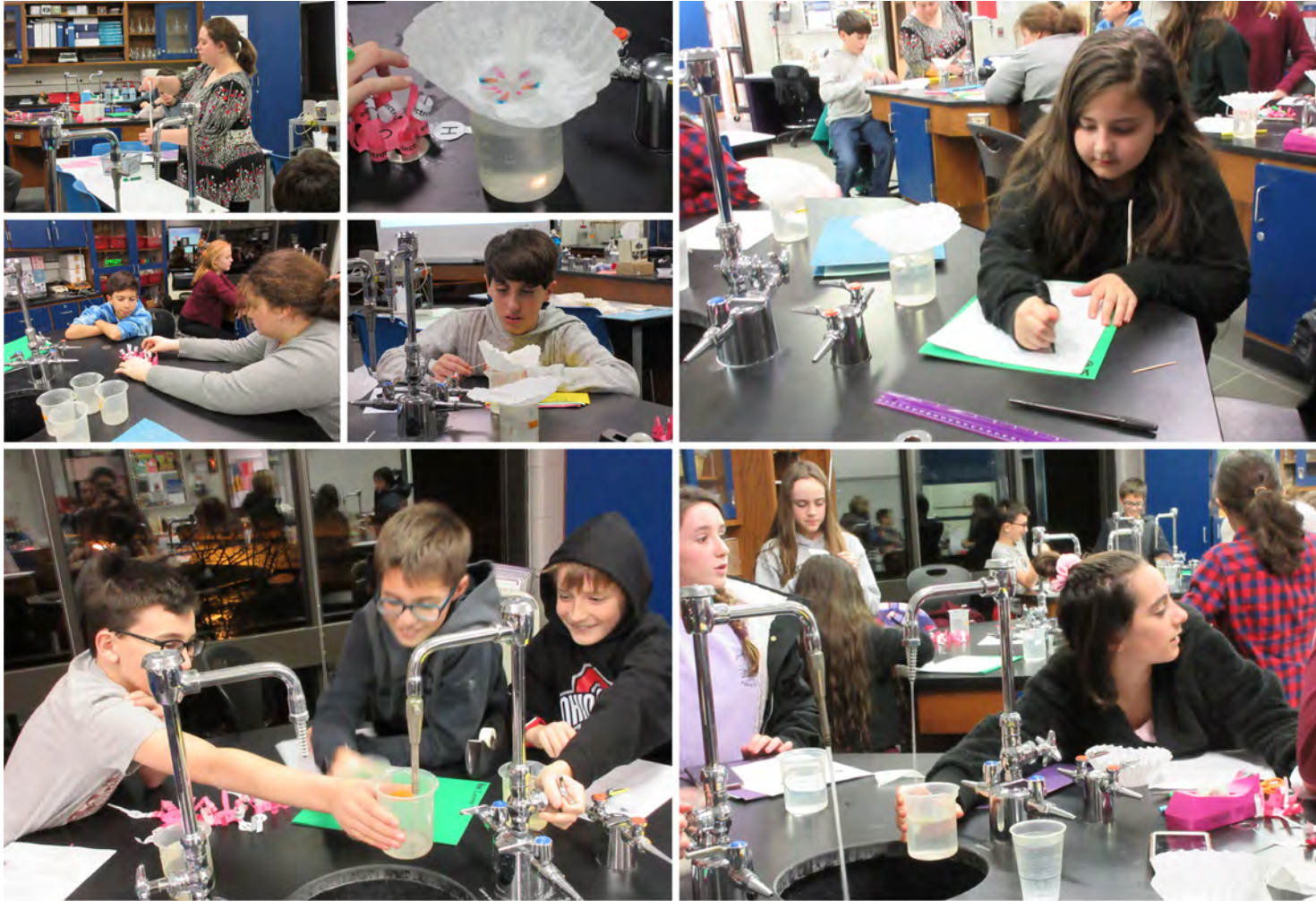
SLIME!!!



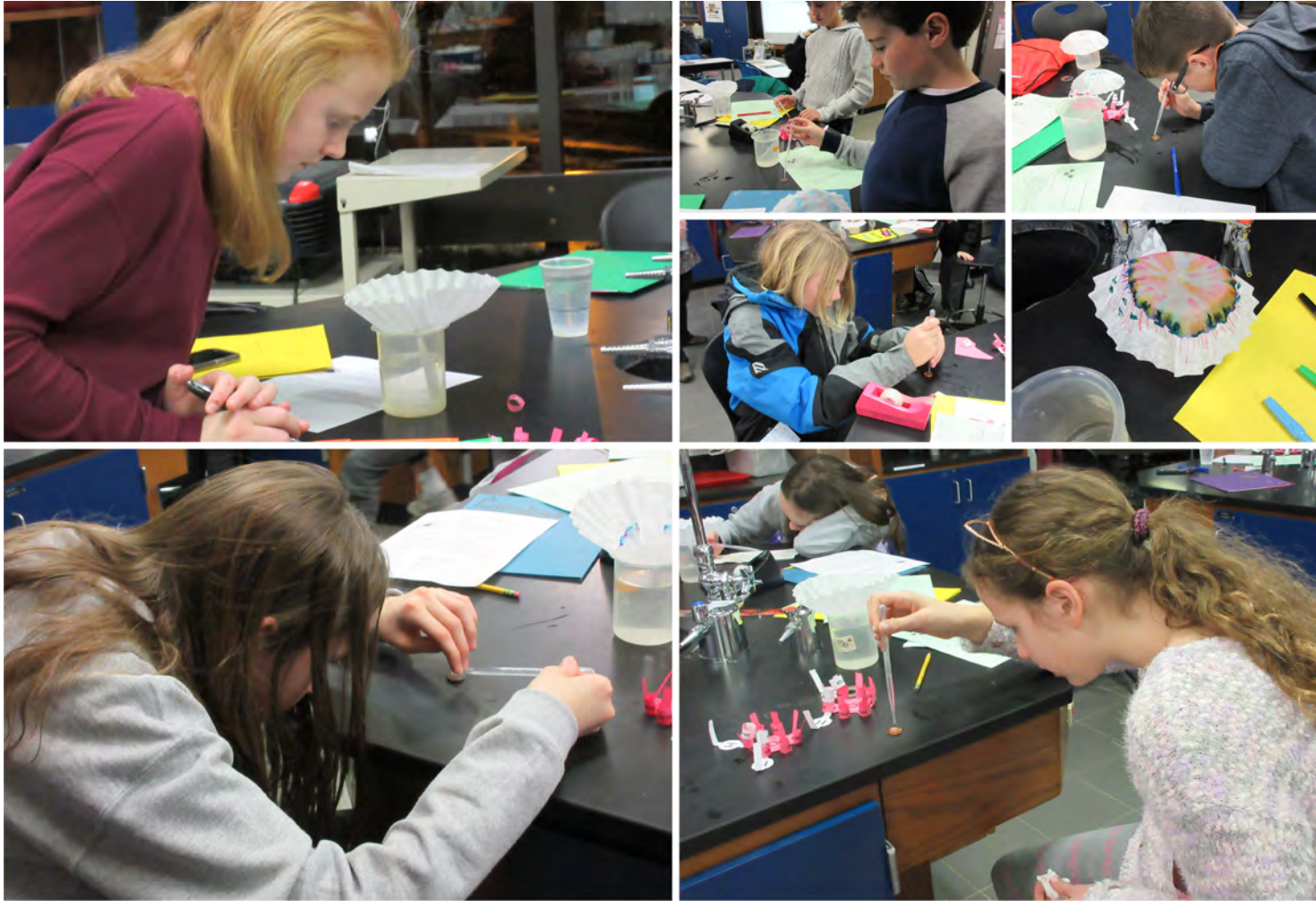
We love our non-Newtonian fluids - liquids that act like solids when pressed on by a force!
Can you name the practical applications we discussed of these substances?



Making oobleck (and a mess). When the right amounts of cornstarch and water are mixed together, we can create the coolest substance (we also cleaned the lab from top to bottom)!



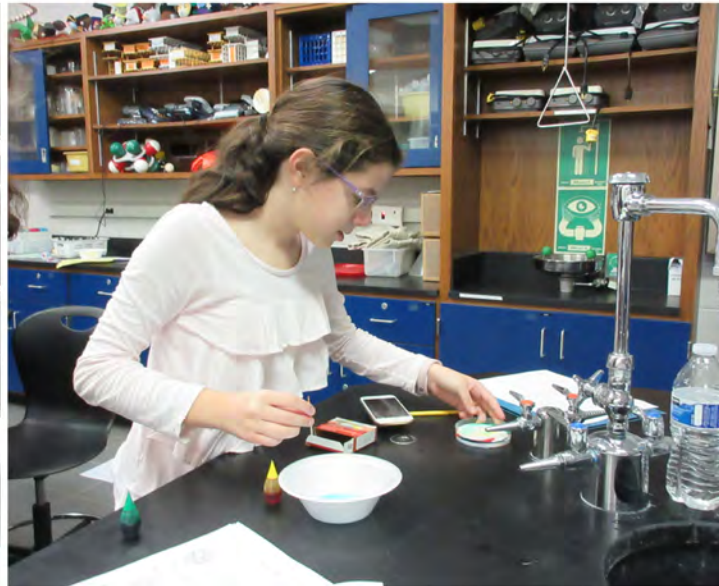
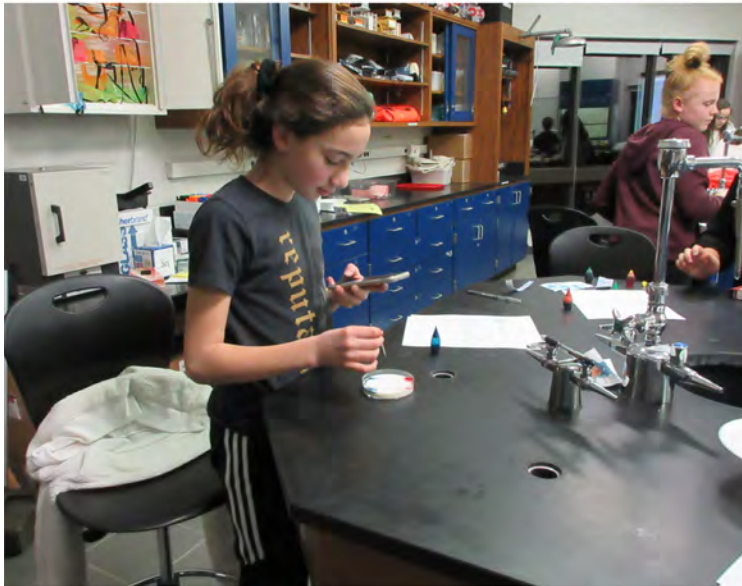
The wonderful world of water. Here we explored polarity and how different ink components can be separated based on their molecular properties. Art and science go together perfectly!



How many drops of water were you able to get on the penny? What property of water allows this to happen?



Furthering our knowledge of the properties of water! We watched food dye react to soap in milk and created our own marbled paper using shaving cream and food coloring.





How are gases dissolved in water? What temperature condition is better - hot or cold water?



Creating and presenting our own recipes for the perfect lemon soda. We had to decide the order in which to mix the ingredients to get the flavor but not let it go flat! (flavor was theoretical - no one drank the sodas)



Continuing our exploration into the chemistry of gases. What gas was inflating the balloon?



Testing what happens when water is heated then cooled quickly. Unfortunately, environmental conditions prevented our activity from working perfectly but we had a lot of fun figuring out what went wrong!



We found the pH of a number of household items. Can you name some acids and bases found in your home? We also learned how to test for the aroma of a chemical - we never smell in chemistry, we "waft!"



Look at some of those messages we wrote in invisible ink! Heating up our messages allowed us to read them!



We learned a quick and easy way to make dirty pennies shine like new - salt and vinegar! Can you recall what the job of each chemical was?



Red cabbage juice is a natural indicator - it changes color based on the pH of the solution! Do you remember what happened when we added lemon juice? How about baking soda?



Ms. Babbin's favorite party trick! Push sharpened pencils through a plastic bag of water and nothing spills - thanks to the adhesion of water! (Izzy was so brave)

