

Chem Demo 2

The Arsenic group, which consisted of myself, Alexandra Virgets, Jonathan Hartman, and Leon Flettrich visited Zachary Elementary School on February 26, 2010. We did the Acids and Bases demonstration for Ms. Maegan Laborde and Ms. Breigh Rainey and their classes of 2nd and 3rd grade students.



Our group continued with the tradition of carpooling to Zachary and stopping by my parents' house to prepare, which proved to be vital to our demo. After leaving the Sprite out overnight, it was still distinctly carbonated and we had to heat it in microwave for 3 minute intervals. For this second round of demos, we stayed with the division of labor and each group member was assigned a different procedure in the experiment. Jonathan had the vinegar rocket, Leon had the magnesium airplane dissolving in sprite, I had the voice activated color change, and Alex had the acid/base color change with dry ice.

When we first started talking to students, we knew we were in trouble because they had no idea what acids and bases were. It seems like they had only heard the two words floating around somewhere without truly understanding what they meant. I stuck with the buzz word technique, which finally worked at end of demo. It was so amazing to see them start to really understand what we assumed was a basic concept and it gave us all a real sense of accomplishment. This is what we focused on: acids have H components while bases have OH components. Water is in the middle and considered neutral. We talked about examples of everyday acids and bases and showed them examples via the demos. We even went so far as to say that everyone has a balancing system in our body that keeps our body close to neutral, even though we drink acids (like soda) daily. (This was incorporated later)

Jonathan tried the vinegar rocket first. It failed to pop off the top. So he explained it away, saying things like this happen in science; things don't always go as planned and sometimes it's even more fun when something unexpected happens. We showed that the reaction was still occurring because of the bubbles, but that there wasn't enough buildup to make the top shoot violently away. We then quickly moved on to second task.

I did the voice-changing thing and got all the kids to say random things into the jar. Lots of them seemed to like Alex and said things like, "Alex is awesome," or "The Saints rule." Since there were so many kids, it didn't take more than one quick round to completely change the jar from pink to clear. I asked them how two clear liquids could make a pink liquid, and they all seemed to think it was pretty cool. I talked about how I put a small amount of indicator that showed how the liquid in the jar changed its pH.





Alex then did her dry ice section. The kids really thought it was cool how the dry ice made the jar bubble. We explained that the bubbling was a trigger for a reaction they could see by the color change. Again, we focused on really basic, main concepts and repeated them often. The kids were responding more and more with enthusiastically correct answers as a class rather than one confident kid blurting out an answer.

After mine, Jonathan tried doing the vinegar rocket again. It failed to go off for a second time. I got a little nervous thinking that these kids could not stand to see the rocket fail a third time. I shook up the bottle slowly and the reaction started to fizz and the top finally popped off. Jonathan explained that sometimes a reaction needs a little push to get started. In this case, he wrapped the tissue paper around the baking

soda too tightly, and shaking it up was the push it needed to react. We later popped the top off the rocket correctly and without touching it.

Leon did the magnesium dissolving, and drank some of the liquid after the metal strips had completely dissolved. We revealed the “mysterious acid” as flat Sprite at the end of his section, which had most of the class really surprised. We reminded them about everyday acids like lemon juice and they were much more enthusiastic and confident about this than the first time.

In retrospect, I think we were much better prepared for the second demo, and thus have learned the importance of structure and planning when teaching smaller kids. I assumed that having more group members than last time would help reinforce order in the classroom. However, it seems that no one wanted to stand idly, and some group members were talking to random students or answering good questions while others were passing around presentations. The group dynamic was thrown off by a much larger class, and everyone was too caught up in the enthusiasm for science and the visual aspect of the demos to concentrate on keeping structure, which is important for these kids to learn as much as possible from the lecture portion.

We all had a lot of fun with the students and I would enjoy doing another demo for them again sometime. The buzz word technique definitely helped, almost like both a visual and verbal organization of our demo. The second demo showed me that it is also much easier to do a demonstration in smaller groups. It would have been a better strategy if we had divided the class into two or four groups and simply switched the groups between us, the presenters, giving a rowdy class the opportunity to get active and move around more.

