

Explosions at Bluffview!

The morning of October 7th started out with a bang as Bluffview Erdkinder students were treated to some explosive science demonstrations put on by Dr. Jon Mauser from the Winona State University Chemistry department assisted by chemistry majors Nate and Makaylan. In previous years Jon conducted DNA related investigations with Erdkinder and STEM after school activities with younger students.



The science demonstrations were a culminating activity for Erdkinder's study of chemistry where students had worked in class to understand the structure of atoms, elements, molecules, mixtures, compounds, physical and chemical properties and had completed a reaction exploration themselves to fulfill academic standards. While the classroom lab was exciting due to generation of heat and a baggie getting filled with gas, it was nothing compared to the size and excitement of the demonstrations shown outside.



Above: Dr. Jon explains the reactants.

The first demonstration started out with Dr. Jon mixing iron oxide and aluminum to create thermite. Each step of the process was explained and students were asked questions to check for understanding and provide relevance.



Dr. Jon and Nate check for safety.



Did you know chlorine makes flames green? That's pretty neat. As the process evolved and magnesium was involved, things got really exciting! Standing back to watch from a safe distance, students observed as temperatures reached 1500°F and the iron liquified, cracking the pot it was contained in. Talk about a blast!

Left: Students observe and discuss the results.

A second demonstration involved elephant's aquafresh: hydrogen peroxide, soap, coloring and potassium iodide. This time students watched as a catalyst sped up the process of oxygen release from the peroxide, in part made visible through the addition of soap. Although it looked like aquafresh toothpaste for elephants, the reaction was hot and the oxygen off gassing could be identified. How? Based on the fact that it ignited.



Dr. Jon explains demonstration aspects



Students check the 'toothpaste' Maria Montessori emphasized the need at the Erdkinder level for "meaningful, purposeful work that helps students realize their place in the world." One aspect of the Erdkinder program at Bluffview is that we strive to get students out into the community and have community experts come into the classroom. These opportunities enhance our learning by adding relevance to our activities and helping to make meaningful connections. By deepening our understanding of our broader community resources, students gain a better sense of their place in, as well as their responsibilities to and opportunities available in the greater community. Community resources can provide experiences otherwise not available or not attainable by middle schools.

A huge "thank you" to Dr. Jon, Nate and Makaylan for another great experience from Winona State Chemistry Department, and for enhancing a greater community connection.

Interested in experiencing the demonstrations yourself but not sure how?

No problem. The solution is element-ary.

These reactions (on a bigger scale) as well as others, including a liquid nitrogen pumpkin drop, will be highlighted at the WSU STEM Club's *Pumpkin Drop and STEM Carnival* in the Science Laboratory Center Atrium at Winona State from 11:00 -1:00 on October 26th! There will be various demonstrations as well as STEM themed activities. See the flier at school or the News listing on the website for details. Stop by to check things out before you head out to the Bluffview Fall Festival at the Briggs Farm!

It will be a great day to be involved with and in the Bluffview and Greater Community.