



MID VALLEY SCHOOL DISTRICT – A LEARNING COMMUNITY DEDICATED TO EXCELLENCE

CURRICULUM NEWS



APRIL 2016

The Importance of Science Education

According to the *Centre for Education in Science & Technology* in the United Kingdom, the teaching of science offers students the ability to access a wealth of knowledge and information which will contribute to an overall understanding of how and why things work like they do. Science is able to explain the mechanics and reasons behind the daily functioning of complex systems, which range from the human body to sophisticated modern methods of transport. Children and students are able to use this knowledge to understand new concepts, make well-informed decisions and pursue new interests. Science also helps to provide tactile or visible proof of many facts we read about in books or see on the television; this helps to increase understanding

and helps children and teenagers to retain that information.



Science is very exciting!

Many students find science extremely inspiring and interesting. Science instils a sense of intrigue and enables students to develop understanding and form questions based both on the knowledge they already have and the insight they wish to gain in the future. Students who excel in science lessons are likely to develop a strong ability to think critically.

This issue of *Curriculum News* features some of Mid Valley's science teachers and includes some of their ideas and updates on their practices.

Science knows no country, because knowledge belongs to humanity, and is the torch which illuminates the world. Science is the highest personification of the nation because that nation will remain the first which carries the furthest the works of thought and intelligence.

Louis Pasteur

What is *Oobleck*?

Mrs. Tomcho led her 6th grade students through the completion of an experiment called *Oobleck*. It is a non-Newtonian fluid whose density changes under certain conditions. The students have been studying solids, liquids and gasses, chemical and physical properties of change, etc.



Favorite Quote: *“Everything is theoretically impossible, until it is done.” -Robert A. Heinlein*

Meet Our Science Teachers



Mr. Smolley



Mr. Rebar

Mr. Rebar (left) is working collaboratively with colleagues in the Science Department to develop a “Space Program” after-school activity for the upcoming school year where students engage in role play and apply real world skills through an online space simulator.



Mrs. Kraky (left). Her favorite science saying is *“Science is everything. Everything is science.”*





Mr. Therkorn

One of Mr. Therkorn's favorite lessons involves students investigating how things are charged with static electricity. He leads students through a quick history lesson on how this is related to Benjamin Franklin's experiments with static electricity. The students are actively engaged the whole class, and it is shockingly fun! Favorite quote:

"If you can't explain something simply, you don't understand it."

Richard Feynman

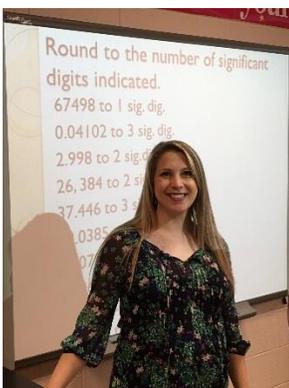


Mrs. Higgins

Class: Anatomy and Physiology
Idea: March Madness Competition

Every year, one of my favorite activities to complete with the students is the annual 'Anatomy and Physiology Skeletronix March Madness Competition'. The students create simple brackets by selecting names randomly and then use their knowledge of the skeletal system to play the Skeletronix game against one another. I use the last 10-15 minutes of class while students are completing independent work to hold the mini-competitions. There are four levels to the game so as the students advance, they need to play at a higher level. It is a different activity to break up the month of March which tends to be a very long month for the students.

Favorite Scientist: Louis Pasteur



Mrs. Forgione

As far as a teaching practice, I use group learning for all lab activities which the students really enjoy. The first two quarters I group the students homogeneously and then once they learn the expectations of group work, I allow them to choose their own groups in the 3rd and 4th quarters.

For a graduate class last year I evaluated the effectiveness of these groups. Often times when students work with their friends we feel they get off task more easily and do not work to their fullest potential because of the distractions. However, after reviewing data, I found that grades on labs were consistent throughout the year indicating that group composition had no effect on some students' achievement. Lower-level students had their grades improve while working in groups they had chosen. I uncovered the cause of such data when students expressed through a survey that they preferred working in groups they chose because they felt more comfortable asking questions of friends about the material. This is an aspect of group work I never considered!

At the end of the year when I surveyed students again, some recognized that working with friends is not always the best! Many of them commented that some of their group members weren't pulling their weight within the group but continue to work with them because they are friends! Food for thought!

As far as a quote: Albert Einstein had written a response to Thomas Edison after he claimed a college education was useless. I connect with this quote because I hear all the time that "I am never going to use this". I rebut with the philosophy that school (and chemistry) trains your brain to problem solve which you *will* use some day!

The quote is not verbatim but a derivative of Einstein's response:

"Education is not the learning of facts, but the training of minds to think!"



Mr. Rovinsky: Why do I teach? . . . I teach to provide students with skill-sets and abilities that will help them succeed in the 21st century.

Mr. Rovinsky would like to congratulate the students who participated in the Pennsylvania Junior Academy of Science competition in March that was held at Wilkes University. Seventeen students earned 1st place prizes. Three students presented two projects in different categories and won! The team will now go on to Penn State on May 15th! Go Spartans!



Mr. Buza

"Chance favors the prepared mind."

Louis Pasteur



Mr. Buza's AP Biology students working in a laboratory. Students obtained samples of bacteria from their teeth and are culturing them in a type of agar that will indicate if the species of bacteria produce acid that would break down tooth enamel.

Career and Transition Fairs



Mrs. Amy Capman did an outstanding job of organizing the Career Fair held on Friday, April 1st, and the Transition Fair on April 12th. Students were able to meet representatives for local employers, universities, and other agencies. Thank you to Mrs. Capman and everyone who helped make these events successful.