To many of the seniors of Flowing Wells High School, Pre-Calculus is their last endeavor in mathematics before graduation. Whether it shows through, or is guised by claims of “Senioritis”, each and every student in the classroom has an eagerness to learn. Our mission as teachers is not only to convince ourselves of this, but to convince them as well. Sometimes it takes a little persistence, but every “Aha!” and “Oh, I get it!” is a sign that we are on the right track.

One way of showing students that mathematics is relevant in the world outside the classroom is through hands on projects. When mathematical concepts are rooted in a physical setting, abstract ideas become tangible.

A truck has a fuel tank which is a 20 inch diameter cylinder resting on its rounded side. The driver notices that his fuel gauge is no longer giving the correct readings, so he has to improvise. He places a measuring stick from the top of the tank, through the center of the cylinder and down to the bottom. He pulls the measuring stick out and finds that the height of the fuel is 6 inches. What fraction of a full tank is left?

Using period as a function of length, students were able to calculate the period of the pendulum in “Big Ben”. By changing the parameters in the problem, the students determined what the period would be if a pendulum was sent to the moon. The function also provided an example of a square root scaling in physics.

The students used their knowledge of inverse functions to write length as a function of the period of a pendulum. By setting the period to be one second, the students were able to find the length necessary for the pendulum to function as a clock. Using a weighted string and a stopwatch, they were able to verify their calculations.