

Data Integration in My Classroom
IPACOA: Explorer
<http://www.ipacoa.org/Explorer>

I am currently teaching using the Illinois NGSS Storylines (ilsience.org/storylines.) A group of Illinois life science teachers have integrated the NGSS into storylines that follow a phenomena. In the Homeostasis storyline that revolves around different groups of otters in the Pacific Northwest, this particular website has the students use real time data to determine the abiotic factors that are affecting the otters.

This website enhances the unit because it allows the students to track the real-time weather, ocean temperatures, salinity, dissolved oxygen and other variables that would affect their particular tribe of otters. (Students are divided into otter tribes at the beginning of the unit that actually correlate with a buoy in the Pacific Ocean.) This data is real. It is not something that I made up for them to use. They can see current conditions for their otters and this truly helps them buy into the storyline. This data allows me to delve deeper into the ecology standards by discussing some chemistry (dissolved CO₂ leads to higher acidity) and it allows the students to see how abiotic factors affect their otters.

I have seen that using real data in the classroom allows my students to make a connection to what we are studying. Just this week we have been looking at the data about COVID-19 and students are making connections between the virus and such things as the global economy, supply and demand, and pollution. If another classroom that is not science based wanted to look at the Corona virus, the teacher could even let the students discuss society and how epidemics and panic spread. Math classes could use the otter data from my website and have students determine averages for several years of data. They could also calculate the rate of transmission of COVID-19 or the death rate of this virus. The possibilities are endless!

As educators, we have to steer ourselves away from the old notion that data and math should only be taught in math class. My students use math every week in my science classes whether it be calculating probabilities with genetics, determining heart rate and blood pressure in BioMed, or even using the Pearson equation in my Medical Interventions class to discuss correlations between cancer treatments of two patients. Integrating contextual data into classes in which the students have to analyze and make predictions allows the opportunity for students to see real life mathematics at work.