

Science should be taught through the scientific method. Given that observation is the essential first step of appreciating and understanding the natural world, I frequently bring my students outdoors. There, they can combine the knowledge they have gained from previous experiences, published papers, and lessons with real observation and measurement. Taking students outside also seems to spark a fascination with our environment that can rarely be attained in the classroom. Being surrounded by life makes it easier to study life.

The interconnectedness of concepts, facts, and terms is unfortunately lost on students who do not apply them to real world problems. Problem solving skills can only be learned by solving problems. For this reason, I strongly believe in an interdisciplinary approach to teaching science. By intertwining art, technology and design thinking into my classes, students gain rich experiences, asking deeper and more relevant questions that enables them to form robust hypotheses, and design meaningful experiments that have a real impact on their families and communities. I also stress the importance of strong statistical analysis; I teach my students that mathematics is not something to fear, but to embrace as a tool. The language of math is how we as scientists test our questions and convey our results.

I explore a variety of methodologies in my teaching beyond experimentation. We listen to and analyze podcasts, read journal articles and chapters from best-sellers like "The Sixth Extinction" and "The Violinist's Thumb", utilize case studies, and discuss current events such as global epidemics and advances in gene editing. I deliver engaging and interactive lectures and my students perform numerous labs and activities in groups; brainstorming, debating and presenting. Every year, I begin class with a short video on scientific literacy. Throughout our year, especially when we focus on topics with significant political or social connections, we revisit the importance of increasing our scientific literacy as a means of empowerment.

Finally, as a trained evolutionary biologist, I am moved by Theodosius Dobzhansky's essay, "Nothing in Biology Makes Sense Except in the Light of Evolution." I purposefully weave evolutionary theory throughout my lessons on genetics, cellular biology, and ecology. As a teacher, I also evolve - albeit not in its formal biological sense - by constantly challenging myself to design new lessons, explore new techniques, and make full use of professional development opportunities that not only enhance my lessons, but enable me to adapt as an educator. Just as my science teachers inspired me to develop my wonder and appreciation for the natural world, so too do I wish to pass that tradition on to the next generation.