

Philosophy of Science Teaching
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I've been teaching 7th and 8th grade science for about 15 years now. One of the first questions people tend to ask me after the initial "What do you do?" is, "Why would you teach that age group?, you must be out of your mind!" I actually consider myself very lucky to teach adolescents. When they enter my classroom as 7th graders, it is the first time they have had science every single day, all year long. It becomes an official "core" subject for them. This is my opportunity to show them, as the famous poet Walt Whitman once said, that "Science is a limitless voyage of joyous exploration." With this age group I can tap into their inherent sense of curiosity about their world. I want them to see that science is not about knowing all of the answers, but that it's about the wonder of the questions and the process of searching for clues to the answers.

They come to understand science by being put into the role of scientists, which, at times, they can find very frustrating. For example, I have them interacting with new science vocabulary and processes by using these "Theory Toys" to form hypotheses, gathering information, test hypotheses and share their explanations with the class. If they feel their explanations are backed by enough evidence and they can build their own model to match the original, the class can give their hypothesis theory status. They never again will stand idly by when someone says "It's just a theory".

We also design many investigation based on science that's interesting and relevant to their lives. For example, as soon as I introduced them to these beads that quickly turn purple when exposed to UV light, the questions automatically started to fly. "Will they still turn purple with sunscreen?" "Will SPF 30 work better than 45?" "Will blue Jello block UV rays?"

I also want them to experience the fascination that comes with discovering the world of the unknown. With adolescents, this can be as simple as looking at a drop of pond water under the scope, or seeing the structure of their actual cheek cells for the first time.

The fact that these students come back to me as 8th graders is a gift. At this age they've started to shift from being concrete thinkers to thinking more in the abstract. We build on the knowledge base they've acquired and we apply what they've learned to the world that awaits them through debates, discussions, and problem based investigations.

When they leave me after two years, I hope I've instilled in them a love for science and a passion for life long learning; hoping they won't lose the sense of wonder and curiosity they came in with, because whether or not my students become doctors or engineers, dancers or designers, they will all be citizens of tomorrow. As they become members of greater society, their generation will be affected by many of the recent advancements in science, from stem cell research, to missions to Mars, to our role in global warming. In an ever changing world emphasizing the advancement of civilization, I want my students to be able to observe changes perceptively and reflect thoughtfully, making informed decisions based on evidence with the awareness that they are an integral part of a very natural world. A general understanding of scientific concepts as well as how science operates, will help these citizens of tomorrow make sense of the many events they will encounter in their everyday lives, and provide a basis for making educated choices that could shape the future of the world they will soon inherit.

