# MATTHEW SMITH

*Bountiful Junior High School*


## How Does Science Help Students?

**My Vexation:** How can learning science in my classroom directly improve my students' future ability to learn and to live?

As a science teacher entering my fifth year in the profession I have come to learn that reflection in the form of asking myself what I'm doing in my classroom and why I'm doing it is an invaluable tool. Reflection helps me to remember why I started this journey of becoming a teacher and to maintain my focus on the days when my classroom seems to be on the edge of mutiny and nothing is going the way I planned. Reflection has also helped me to see that I could be doing a better job of teaching science and making sure that my lessons will be meaningful for my students throughout their lives.

Teaching appealed to me at an early age. In my eighth grade math class I realized helping others understand things was something that I really enjoyed doing. That was the first time I can remember thinking that becoming a teacher might be something I would like to do. This idea grew with time and really took hold when I got to college and could look back and see how much my teachers had helped me. They had truly changed my life. I knew then that education was the career for me.

I am a first generation college graduate. My parents always told me how important an education was and their influence made a difference. But if I had not had the teachers I did, helping me to see that I had potential and could accomplish my goals I would not be where I am today, nor would I have the plans that I have for my future. As a teacher I have the opportunity to change lives in this same way. I once had a professor disagree with the notion that changing one life would make all the struggles associated with teaching worth it. I believe that professor was right. I have the opportunity to directly influence over 200 adolescents every year. I interact with and am an example to these students during one of the most critical times in their lives. I want to reach all of them. Reaching only one would be a monumental disappointment. I have never believed that simply doing a good job of teaching the content mandated by the state would be enough to make a difference for my students, but as I become more comfortable in my role as a teacher I am finding that "teaching the core" is all that is expected of me and if I want to do more I have to keep myself motivated.

My teachers made a difference through the life lessons they taught me, not subjects they specialized in. I decided to teach science because I was good at it and I enjoyed it. It was later when I realized how well science lends itself to teaching valuable lessons for life. Science has the potential to teach students how to analyze and pick a course of action for many of the problems they will face throughout their lives. Problems and hurdles in life are things that never go away. It seems that the more problems an individual successfully navigates, the more challenging the next set will be that comes their way. Success can be measured by how big the problems are that a person is capable of overcoming. Learning the processes of science can prepare my students for success in problem solving regardless of what their future holds. It is exciting for me to think about how much I can help kids by teaching them something that I truly enjoy. Unfortunately teaching science this way is much easier said than done.

It is not anything new to say that students should learn what science is and how to do it. But it seems like when I try and do this in my classroom that I am swimming upstream. I feel like I have fallen into a trap where I teach too much about what science has done and far too little about the creativity, inventiveness, and struggle it took to do it. State assessments tell me that I am doing a good job because my students' test scores are above average but I know that I am shortchanging all stakeholders by not focusing enough time and energy on how science can be used in real life non-scientific situations.

My students come alive when they are given the opportunity to explore and test their own ideas. They need the freedom to try out an idea and learn from what goes right and what doesn't. Every

**MATTHEW SMITH**
*Bountiful Junior High School*

## How Does Science Help Students?

year that I have taught I have had my students build model rockets as a project to reinforce momentum conservation. It is always everyone's favorite project of the year. My students love it, my administrators love it, the community loves it, and it is my most relaxing and enjoyable week of the year. The project has been great P.R. tool. Unfortunately, I have never felt like I use this rocket project as the great teaching tool that it could be. It has only been a fun project to reinforce a scientific law. After we launch the rockets we move on to the next unit. I have never required students to analyze their rocket's flight to try and identify and fix problems with the design. I need to find a way to give them the time it takes to formulate a plan of attack for a given problem and see that plan through to fruition, analyzing and adapting along the way as they gain experience and information.

**My Venture:** Science Explorations

I know that I should be able to use the state core to teach the way I think teaching should be done. The problem is that it's not working for me. I haven't been able to balance between the products and processes of science and still feel like I'm properly preparing my students for their end of level tests. I have decided to take a step toward my goal in a way that gives me freedom from the constraints of the state core. I am starting a science elective class (Science Explorations) at my school that will be dedicated to teaching students how science can work for them no matter what career path they choose. The philosophy of the class is, "Students as problem solvers". I am hoping that through teaching a class dedicated to inquiry and the nature of science and by giving students time to learn from their mistakes that I can find ways to incorporate more of these concepts into my regular science class.

This year will be a learning experience for me. I have total freedom with the science explorations curriculum and I'm not exactly sure how I'm going to use it. I have two course goals. First, I want my students to understand at least a little about the nature of science. They need to know that science is more than a five step process that starts with an observation and ends with a conclusion. Second, I will give my students the opportunity to be scientists. They need to know that they possess the creativity and intelligence required to solve problems. I want my students to understand how the processes of science can benefit them no matter what career path they choose. The class will be project based and I have gotten many of my ideas from Science Olympiad. Having students design, build, test, and modify their creations will open the door for class discussion drawing parallels to how science works. I am interested in making my classroom the best it can be and in teaching my students how valuable science is for their lives. I want to hear what the ideal science classroom (on a three hundred dollar budget) would look like in the eyes of other educators. I am starting to think of myself not as a science teacher but someone who teaches kids. I want to know how to maximize myself in this role using science.