



## COMMENTARY: New Delaware science standards turn students into thinkers

February 19, 2016 · by Megan Szabo · 0 Comments

"But Mrs. Szabo," my sixth-grade student Jessica whined, "why can't you just tell us what materials you're going to give us to build the tower? That way, I can just do a Google image search and look up a picture of a design someone else made."

My students were doing online research about the design structure of skyscrapers. They were going to use this background information to design and construct their own skyscraper models out of spaghetti and tape to see which group could build the tallest, freestanding structure. Although they knew they were going to have to build a tower model, I had not told them what materials would be available to them, and they were getting frustrated.

Unfortunately, this was not the first time my students practically begged me to give them an answer as soon as they started to feel frustrated. It was something that happened all the time.

One student raised his hand to ask a question before he even tried to figure out the answer on his own. Another wanted me to draw an example of what the graph of her data should look like on the board, so she could copy it down. A lab group wanted me to develop their procedure instead of using their brainpower to design it on their own.

Students have become so focused on getting the "right" answer that they do not care if it is spoon-fed to them by the teacher, even if that means they do not have to think for themselves.

The Next Generation Science Standards, Delaware's new K-12 science standards, are empowering me to change that. The new standards are being implemented in districts across Delaware.

What I love about the NGSS, and how they are moving science education in this country, is that the focus is no longer on just teaching students science, but rather, teaching them how to think like scientists. Instead of just focusing on a list of standards and vocabulary words that students should know, these new science standards focus on teaching students how to be thinkers, how to be problem-solvers, and to use what they learn in science class to explain how the world around them works.

As a NGSS lead teacher, it is my job to facilitate this learning and help my students push through when they feel frustrated and unsure of themselves. It is imperative that we teach students how to be analytical thinkers by providing them with the tools they need to be able to discover answers on their own.

I must admit, when I first started attending NGSS lead teacher meetings, I was a bit apprehensive. Sure, in a room full of science educators, these NGSS-aligned lessons were successful, but how would this look in my classroom with middle-school students?

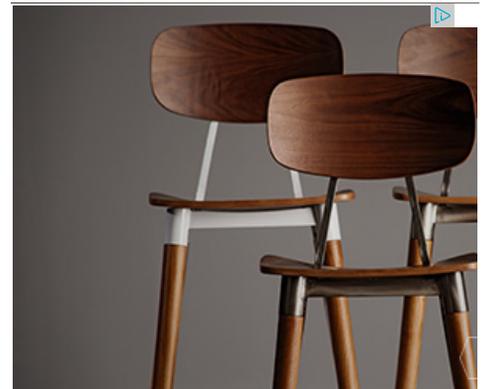
As my students dug into building their spaghetti skyscrapers, they struggled at their first attempts and were unable to build a tall, freestanding tower. But they persevered and used the knowledge gained from their research and learned from what went wrong the first time to rebuild, and ultimately create amazing towers. They learned from their mistakes, which is infinitely more valuable than simply doing what I tell them to do.

In just a short amount of time, I have witnessed my students make unbelievable strides that I would not have

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Megan Szabo

thought possible a year ago. The feedback I hear from my students is that the class is challenging because they're using their brains in a different way from before.

The scientific conversations I overhear and the solutions to real-world problems I see my students design on a daily basis have left me astounded. More so, what I see happening in my classroom makes me excited and gives me hope for the future of science education in Delaware.

*EDITOR'S NOTE: Megan Szabo, a teacher at Postlethwait Middle School in the Caesar Rodney School District, is the Delaware State Teacher of the Year 2015.*

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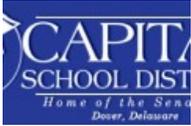
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