# Key Points- Discussion2 [Nature of Science / Nature of Math- Sept 9](#)

Luckily, in GA, we began adopting and using NGSS standards and practices when it became a tested area in the state-mandated assessments. Many of the teachers were not on board, but our principal was determined to create or shift to a STEM school. I was moved from the Gifted dept. to a role as STEM Coordinator. In this position, I learned & then trained the staff monthly in best practices in STEM. I also mentored other schools with some projects. I began a STEM Lab, based my lessons on NGSS, using the crosscutting concepts and phenomena to enrich the core practices being taught. After adding the STEM component our school's CCRPI and all other test scores rose several points. It was eye-opening for the reluctant staff members. The excitement around math and science among the students was extremely evident. They became masters of questioning!

I then led the school through the process of becoming a certified STEM School through AdvancEd. This process taught me so much but made me want more. I yearned for full immersion, so I moved to Silicon Valley to be in the thick of it all. I now teach in a STEAM charter school as a Makerspace(K-5) and FabLab(6-8) instructor, integrating all subjects into the application of knowledge, using NGSS and Engineering Design principals from Stanford dSchool and the Buck Institute. I am now creating future artists, engineers, & scientists and feel so lucky to be a part of the students' journeys.

We also have an ecological strand and themes that begin in kindergarten and go through eighth grade where the students learn and share across grade levels, as well as, with real scientists. We work with the Leatherback Trust, taking middle school students to Costa Rica, after years of learning throughout elementary, to actually work with real scientists and real turtles, seeing actual egg-laying and hatchings, collecting data, then trying to figure ways to be of service.

I loved the cooking and recipe analogy, I think this visual alone will help many struggling educators "get it", thanks for sharing that , it clarified my understanding a bit more, also.

In my classroom, I do have the scientific method posted, but I have added the design components where they may be most likely found, as a way for students to understand that it is a cyclical process that may bounce around a bit, as

well.

I now know that I need to add where the five Es come into play. I want to connect as many concepts as possible to strengthen all students' understandings. I am now more aware of the usage of "Dead words", which is a hard habit to break...but I will persevere! I now realize how those words and phrases lead to dead-end discussions and thought processes.

The media is now so divided. Politics rule the road. There is so much false information and opinion-based commentary, that it has become difficult for students who may not know the intricacies of how politics flood into our classrooms and media to differentiate between valid or invalid information. It is up to us to teach them how to validate, not just accept what is being fed to them. We have to ensure that empathy is taught, since it isn't often what is shown in media, so better decisions can be made in the future leaders.