

The Nature of STEM Assignment

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My elementary (k-5 g.) art curriculum treats the nature of science more like a “condiment” and a fun added connection. Because I teach art, I spend most of my time on my art curriculum, the Elements and Principles of Art, the different types of art, art mediums, techniques, and learning about past and current artists who had and have impacted our world. As I teach these, I always try to incorporate Science or math into my lessons whenever possible. The reading, “The Nature of Science,” states, “The integration of scientific and engineering practices, disciplinary core ideas, and crosscutting concepts sets the stage for teaching and learning about the nature of science. This said, learning about the nature of science requires more than engaging in activities and conducting investigations.”

I don’t know that I have the knowledge or time to go too deep into that definition of what “Nature of Science” truly is, but the fact that I try and add it in ways that work for the time and amount of kids I have puts me above a lot of elementary school's art teachers. A simple example of incorporating some science into a unit would be for my color lesson. I talk about and show a video on the science behind how the eye sees color. We also learn who Isaac Newton was and make Newton’s Wheel to pair with my main art project. I would love to do more hands-on science-related activities that show this, but I just don’t have the time or the resources to work at two Title 1 schools. The minimal budget I have doesn’t even allow me enough money to purchase the supplies and consumables needed.

The reading, “The Nature of Science” states, “In designing instruction, deliberate choices will need to be made about when it is sufficient to build students’ understanding of the scientific enterprise through reflection on their investigations, and when it is necessary and productive to

have students analyze historical case studies.” So, I used this statement as a guide to help me add the true definition of the “nature of science” to my color lesson example I stated in question a.

Suppose students observe how they can see rainbows in and around different places or in various weather conditions, such as when it rains or even through rock crystals. One can have them observe patterns and propose explanations of cause-effect. Then, the students can develop a project using the rainbow colors on the color wheel and based on their proposed description. Next, they design an investigation to test how mixing specific colors relate or changes into new colors. In creating the study, they have to gather data and analyze data. Next, they construct an explanation using an evidence-based argument. These experiences allow students to use their knowledge of color, rainbows, art techniques, and practices, allowing experimentation and using concepts to understand the nature of science.

Applying more of the tenets of science to my color unit displayed how the “nature of” was more dynamic and will make a more significant impact on learning the art side and the science behind it. There is a lot of content overlap with art and the study of color on the science side, such as how our eyes perceive color light and how light is needed to see color, reflection, observation, experimentation, explanation of natural phenomena, uses various methods, tools, and techniques, and explanation of cause and effect.

It has been a long time since I have had to re-learn about science as a student and the first time learning how to teach it as a specials teacher. I appreciate how the tenets make my lesson more dynamic and adds more depth to my color lesson, and I hope it creates even more connections for those students who may be weaker in art or on the science side. I also like the personal challenge of incorporating more of the science tenets into my art units.

References

Schwartz, R. (2007). What's in a Word? How Word Choice Can Develop (Mis) conceptions about the Nature of Science. *Science Scope*, 31(2), 42-47.