Angela Wilson
Methods of STEM- Elementary
NOS and CCMP Analysis of Article
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My article for NOS and CCMP analysis is "Yeah, the Forecast for Hurricane Dorian is a Mess" by Eric Berger for Ars Technica. It was written August 29, 2019 when all the spaghetti models were predicting a direct hit on Florida's central coast. Berger (2019) states, "But don't believe it. To get a better idea of where Dorian is likely to go over the next week or so, a better practice is to look at ensemble forecasts from the global models." As we now know, his theory was supported by the actual track of Hurricane Dorian which had it brushing the coast of Florida. All forecasts gave a large cone of uncertainty, but he used a 12z ensemble model to give a better range of where Dorian could go. (2019) Follow this link to the article: Yeah, the forecast for Hurricane Dorian is a Mess

This article addresses several overlapping standards between the Nature of Science (NOS) and the Common Core Mathematics Practice (CCMP). For example, the NOS practice of developing and using models to analyze and interpret ("The Nature of Science" 2013) data mirrors the CCSS.Math.Practice. MP4, Model with mathematics and MP5, Use appropriate tools strategically. ("Standards for Math 2019) Berger (2019) utilizes several hurricane tracking models beginning with the official forecast from the National Hurricane Center which shows that Dorian is heading for central Florida. That forecast uses computer programs to construct spaghetti models of the possible tracks of the Hurricane. He then shows the 12z ensemble output from the European model to refute that evidence. (2019) Finally, he utilizes another model from

the Twitter feed of Jack Sillin, a Cornell University student of Meteorology and Atmospheric Science and forecaster at weather.us. (Sillin 2019) to support his theory. Thus employing the NOS practice of engaging an argument from evidence and constructing new explanations and the CCSS.Math.Practice.MP3 Construct viable arguments and critique the reasoning of others. ("Standards for Math 2019) To arrive at his conclusions he must analyze and interpret data from several sources. He uses mathematical algorithms in computer programs to obtain and make sense of this data. He effectively uses solid NGSS and CCMP practices to write his article.

By using those same three models, Becker (2019) also includes the crosscutting concepts of utilizing system models and patterns that complement the NOS practices. Again, this overlaps with CCSS.Math.Practice.MP7, Look for and make use of structure. He achieves this through the use of several models including the Twitter feed from Jack Sillin, who uses an easy to understand explanation of the possible tracks of Dorian. Tracking hurricanes fulfills the Nature of Science and humans' need to understand the world around them, and, in this case, to protect them from the dangers.

In summary, NOS practices and CCMP easily align. The Standards for Mathematical Content are more than procedures just as the Nature of Science is more than memorizing facts. Both sets of standards seek to develop understanding and critical thinking while using the tools and procedures and facts as a platform to achieve.

References

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