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### **Nature of Science & Math: Analyzing the Presence in Everyday Communication**

I chose an article from Popular Science, *Hurricane Florence's slow creep across the Carolina is bad news*, By Dennis Mersereau, September 14, 2018. This article works well with the 3 tenets of Nature of Science of the Next Generation Science Standards including Scientific Investigations Use a Variety of Methods, Science is a Way of Knowing, and Science Addresses Questions About the Natural and Material World.

The premise of the article is to explain Hurricane Florence's landfall and what that means for North and South Carolina. To begin with the first tenet, Scientific Investigations Use a Variety of Methods this article meets the tenet in several ways. According to Appendix H – Understanding the Scientific Enterprise: The Nature of Science in the Next Generation Science Standards, "Science investigations use a variety of methods and tools to make measurements and observations," This article uses several methods including measurement of wind speed, forecast tracking through satellite, gauges measuring storm surge and inches of rain. Appendix H also states, "Science depends on evaluating proposed explanations." This is approached in using NOAA's Weather Prediction Center to detect possible threats to the surrounding areas based on our knowledge of previous storms and their rainfall.

In the category Science is a Way of Knowing, it states, "Science is both a body of knowledge and the processes and practices used to add to that body of knowledge." This article is a very good example of this with its explanation of what is happening with forecast tracking, the science behind it and how information is attained about Hurricane Florence with satellite imaging and forecast prediction. It also compares data taken from other Hurricanes and flooding along coastal parts of Texas and Louisiana and is used to predict potential threats. Another way "Science is a way of knowing used by many people, not just scientists" is how the article is written with plain understandable information. This article can be used by any person to understand the science of wind speed, catastrophe of what it means when it moves slowly inland, how storm surges occur and what that means for damage and human life.

The last tenet, "Science Addresses Questions About the Natural and Historical World," is also relevant in this article. In Appendix-H, "Science limits its explanations to systems that lend themselves to observation and empirical evidence," is applied to this article. This would be the information and speculation of what would have happened. The article says, "Forecasters expect Hurricane Florence to produce catastrophic flash flooding across North Carolina and South Carolina as the storm pushes inland through the weekend." This article speculates what will happen based on weather patterns and observations of previous knowledge about Hurricanes and their impact on land. It is limited in knowing exactly what will happen but gives outcomes understanding what could happen.

The Standards of Mathematical Practice can also be related to this article. I find that this article addresses making sense of problems and persevering in solving them, constructing viable arguments and critiquing the reasoning of others and using appropriate tools strategically. To begin with making sense of problems and persevering in solving them the author, Dennis Mersereau, identifies the problem with the hurricane moving slowly when making landfall and perseverance is the quest to figure out what will happen according to data and knowledge of what we know and how to stay safe. He constructs viable

arguments and critique of reasoning by using a comparison of previous hurricanes and their impact to coasts to argue what could have happened. With regards to using appropriate tools strategically he uses data from windspeeds, gauges to measure storm surge, rain fall measurements, and comparison to data of other hurricanes.

