ASSIGNMENT

Nature of Science & Math: Analyzing the presence in Everyday Communication

by

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Sea ice tracking low in both hemispheres

PART A: *Select 3 of the tenets of Nature of Science discussed in NGSS and write a brief analysis of how the article meets each tenet.*

1. Scientific investigations use a variety of methods

New technologies advance scientific knowledge

What makes this article rich, is the support for the investigation that has been done by using advance technologies and equipment; which otherwise, would have made it difficult to understand the phenomena and reasoning behind the natural process. The colored high resolution satellite images help us understand the changes in ice levels in both, Arctic and Antarctica regions.

2. Science knowledge is based on empirical evidence

Science includes the process of coordinating patterns of evidence with current theory

The article *Sea ice tracking low in both hemispheres* supports this theory with patterns extensively observed over the years by various scientists at multiple locations in both, Arctic and Antarctica. The scientists use evidence gathered using satellite data, geologic record and proxy data.

3. Science models, laws, mechanisms, and theories explain natural phenomena

Models, mechanisms, and explanations collectively serve as tools in the development of a scientific theory

The author of the article has used explanations given by a number of scientists, who have been observing the phenomena of decline in ice levels in Arctic and Antarctica. The article also shows how *science theories are based on a body of evidence*- satellite images and mathematical data *developed over time.*

PART B: *Select 3 of the practices in* [Common Core Mathematics Practices a](#)*nd write a brief analysis of how the article meets the math practice*

1. Construct viable arguments and critique the reasoning of others

Justify conclusions with mathematical ideas

The article analyzes the problem of ice depletion at Arctic and Antarctica using mathematical data. The argument is very well supported by variety of graphical representations of mathematical evidence gathered over the years.

2. Model with mathematics

Represent mathematics to describe a situation either with an equation or a diagram and interpret the results of a mathematical situation.

The article *Sea ice tracking low in both hemisphere* contains relevant and realistic content that provides an opportunity to learn and apply different quantities and their relationships. It can be used to teach how to compare and graph and interpret relation between two given quantities/data. There are different measurements that are used in the article such as, temperatures, years, area and percentage. This article shows how the application of mathematical concepts to real-world situations allows us to explain relations that are impossible to describe effectively otherwise.

3. Use appropriate tools strategically

The article uses various maps, plots and graphs to visualize, represent and analyze the information. Different kinds of graphs are used in the article to explain how level of ice is changing in both Arctic and Antarctica. This article allows students to explain their mathematical thinking using estimation strategies and statistical data.

Reference:

Beitler, J. (2017). 2017 Ushers in record low extent. *National Snow and Ice Data Center*.

Retrieved from http://nsidc.org/arcticseaicenews/author/jbeitler/

http://www.corestandards.org/Math/Practice/

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