

THE Kp INDEX AND THE AURORA

Lesson Summary:

Students read magnetometer Kp index graphs and compare a current Kp index calculation to a current prediction of aurora. Through this process, students learn that there are many factors in predicting the aurora. See “Infusing Native Language in the Science Curriculum” to incorporate Native language into this lesson.

Objectives:

The student will:

- interpret charts and graphs related to magnetometer readings;
- average Kp indices over a three-day period;
- compare a current Kp index calculation to a current aurora prediction; and
- discover that the Kp index is just one of many factors examined in forecasting the aurora.

GLEs Addressed:

Science

- [5-8] SA1.1 The student demonstrates an understanding of the processes of science by asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.
- [11] SD3.2 The student demonstrates an understanding of cycles influenced by energy from the sun and by Earth’s position and motion in our solar system by exploring causes and effects related to phenomena (e.g., the aurora, solar winds, Coriolis Effect).

Math

- [6] S&P-3 The student demonstrates an ability to analyze data (comparing, explaining, interpreting, evaluating; drawing or justifying conclusions) by using mean, median, mode, or range (M6.2.3).
- [7] S&P-3 The student demonstrates an ability to analyze data (comparing, explaining, interpreting, evaluating, making predictions; drawing or justifying conclusions) by determining mean, median, mode, or range (M6.3.3).
- [7] PS-5 The student demonstrates the ability to apply mathematical skills and processes across the content strands by using real-world contexts such as science, humanities, peers, and community (M10.3.1 & M10.3.2).
- [8] PS-5 The student demonstrates the ability to apply mathematical skills and processes across the content strands by using real-world contexts such as science, humanities, peers, community, and careers (M10.3.1 & M10.4.2).

Search Terms:

- Kp Index
- magnetometer
- graphs
- prediction
- aurora
- Northern Lights