SOUTHERN LIGHTS

Lesson Summary:

To conceptualize the presence of an aurora oval above the South Pole, students use a globe to determine locations where the aurora is likely to be visible. Students determine locations where the aurora might be visible when strong solar winds cause the oval to expand northward.

Objectives:

The student will:
- approximate the location of the southern aurora oval based on data about the northern aurora oval;
- use a scale to measure distance on a map;
- understand the global placement of Antarctica, and what it means in terms of weather and seasonal differences; and
- identify the best time of year to view the aurora australis.

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.

[9] 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 explaining the phenomena of the aurora.

Math

[7] S&P-1   The student demonstrates an ability to classify and organize data by [collecting, L] displaying, organizing, or explaining the classification of data in real-world problems (e.g., science or humanities, peers or community), using circle graphs, frequency distributions, stem and leaf, [or scatter plots L] with appropriate scale (M6.3.1).

[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:

- aurora oval
- South Pole
- globe
- Antarctica
- aurora australis