RADIO AND AURORA

OVERVIEW

Lesson Summary:

When solar activity interacts with Earth's ionosphere, it can affect technology, including satellites and radio waves. Students complete a concept map to gain an understanding of the science behind radio waves and the influence the aurora has on radio communications.

Objectives:

The student will:

- differentiate between AM, FM, and shortwave radio;
- understand the relationship between increased solar activity and radio wave transmissions; and
- complete a concept map showing the relationships between solar activity and radio wave transmissions.

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.

[7] SB4.3 The student demonstrates an understanding of motions, forces, their characteristics, relationships, and effects by describing the characteristics of a wave (i.e., amplitude, wavelength, and frequency).

[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.

Reading

[5-6] 2.5.2 The student demonstrates an understanding of main idea by locating information in narrative and informational text to answer questions related to main ideas or key details.

[7-8] 3.4.2 The student demonstrates understanding of main ideas/arguments by locating information in narrative and informative text to answer questions related to main ideas or key details.

Search Terms:

- solar activity
- ionosphere
- Earth's magnetic field
- wave dynamics
- amplitude
- frequency
- hertz
- kilohertz
- satellites
- radio waves
- aurora
- Northern Lights