

3-D PLANETS

Lesson Summary:

Students construct three-dimensional models of the nine planets in our solar system to help them visualize each planet's location of the rotation and magnetic axes. Students also locate the position of the aurora (if there is one) on each planet.

Objectives:

The student will:

- construct a three-dimensional model, accurately showing the magnetic axis and/or the rotational axis of a planet in our solar system;
- measure angles with a protractor; and
- conclude the position of the aurora oval on a planet depends on the location of the planet's magnetic axis, but also is affected by the planet's rotation axis.

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.
- [6] SD4.1 The student demonstrates an understanding of the theories regarding the origin and evolution of the universe by contrasting characteristics of planets and stars (i.e., light reflecting, light emitting, orbiting, orbited, composition).
- [7] SD4.1 The student demonstrates an understanding of the theories regarding the origin and evolution of the universe by comparing and contrasting characteristics of planets and stars (i.e., light reflecting, light emitting, orbiting, orbited, composition).
- [8] SD4.1 The student demonstrates an understanding of the theories regarding the origin and evolution of the universe by creating models of the solar system illustrating size, location/position, composition, moons/rings, and conditions.

Math

- [7] MEA-5 The student demonstrates understanding of measurement techniques by accurately measuring a given angle using a protractor to the nearest plus or minus 2 degrees (M2.3.1).
- [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:

- planets
- magnetic axis
- rotational axis
- solar system
- model
- aurora
- Northern Lights