A SUN/EARTH COMPARISON

Science Teacher Education Program

Lesson Summary:

Students develop a comparative perspective between the size of the sun and planet Earth.

Objectives:

The student will:
- determine that the diameter of the sun is about 100 times larger than the diameter of Earth;
- compare the size and the distance between Earth and the sun through mathematical exercises; and
- conclude that the sun is the central and largest body in the solar system.

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.

[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

[6] MEA-6 The student demonstrates ability to use measurement techniques by converting and using equivalent measurements within the same system (M2.2.2).

[8] MEA-1 The student demonstrates understanding of measurable attributes by converting measurements within the same system (English or metric) (M2.3.2).

[5] G-2 The student demonstrates an understanding of geometric relationships by using the attributes and properties of solid figures (edges, vertices, number of faces) to [model L], identify, compare, or describe (cubes, cylinders, cones, spheres, pyramids, or rectangular prisms) (e.g., boxes, buildings, packages) (M5.2.2).

[6] G-2 The student demonstrates an understanding of geometric relationships by identifying, comparing, or describing attributes and properties of circles (radius and diameter) (M5.2.2).

[7] G-3 The student demonstrates conceptual understanding of similarity, congruence, symmetry, or transformations of shapes by using a scale factor to solve problems involving similar shapes (e.g., scale drawings, maps) (M5.3.3).

[8] G-4 The student demonstrates conceptual understanding of similarity, congruence, symmetry, or transformations of shapes by using proportionality to solve real-world problems involving similar shapes (e.g., two real-world objects casting shadows) (M5.3.5).

[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:

sun, model sun, solar system, Earth, diameter, distance, math, calculation, scale, mathematical formulas