THE EARTH AND ITS MOON

Relative size and distance

Overview:
Using a variety of objects, students will predict the moon's size relative to the earth, as well as its relative distance to earth.

Supplies:
- softballs
- golf balls
- marbles
- tennis balls
- ping pong balls
- beads

Procedure:
1. In pairs, students are asked to choose one of the spheres to represent the Earth.

2. Each pair predicts which item might represent the size of the moon. Students share their predictions.

3. Pairs are asked to estimate how many "moons" they could place side by side to equal the diameter of one "earth". Estimates are shared.

4. Students are told that they would need four moons laid side by side to equal the diameter of one earth. Given this information, partners re-evaluate the sphere choices they initially made to represent the Earth and the Moon. As a class, determine which sphere pairings work best.

Objective:
To determine the moon's relative size compared to the earth and its relative distance from earth.

Key Concepts

- The moon's diameter is one quarter the size of Earth's diameter.

- The moon is about 387,000 km from earth (30 "earths" laid in a straight line)

5. Partners are asked to appoint one person to be "the Moon" and the other "the Earth". 6. "Moons" are asked to stand facing their partners. The "Earths" must move away from the moon until they believe they are showing the relative distance between the Earth and the Moon. 7. Pairs are asked to estimate how many of their "Earths" laid side by side would equal the distance between the "Moon" and the "Earth". 8. Students discuss their predictions. 9. Inform students that they would need 30 "Earths" laid side by side to represent the distance between the Earth and the Moon. 10. Partners separate their objects so the distance between the "Moon" and the "Earth" equals approximately 30 "Earths". 11. Hold a class discussion where students can comment on whether or not they were surprised by their findings.	