

Universe—Lesson 11

Distances of the Stars

Standard IV: Students will understand the scale size, distance between objects, movements, and apparent motion (due to Earth’s rotation) of objects in the universe and how cultures have understood, related to and used these objects in the night sky.

Objective 2: Describe the appearance and apparent motion of groups of stars in the night sky relative to Earth how various culture have understood them.

Indicator c: Recognize that stars in a constellation are not all the same distance from Earth.

Directions:

This lesson is to show that stars are not the same distance away from the Earth. When we look up into the night sky, all the stars seem to be the same distance away. However, most of them are trillions of miles away from Earth and from each other. Our eyes cannot tell the distance of one star from another star. The stars within constellations are not the same distance away from Earth. By using Orion as a model we will see how far each star is away from Earth that it is three-dimensional and not on a flat plane.

1. Follow the directions for lesson plan “Orion Constellation Model”.
2. You may also want to connect it with “Investigation Three—Constellation: Pictures in the Sky”, page 11.2.21 through 11.2.25 from the 6th Grade State of Utah Science TRB for better understanding.
3. The “Orion Constellation Model” gives the length of the string to use for each star and “Investigation Three” has the students figure it out for themselves.
4. Also use page 11.1.7, “Distances of the Stars of Orion” from the Shared Reading of the State of Utah Science TRB to show a three-dimensional picture of Orion.