

FAIRBANKS MUSEUM & planetarium

Space Science Investigator Badge for the Junior Group

The Solar System

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The following instructions represent additional resources for continued study of the topics covered in our "Space Science Investigator Badge for the Junior Group" online class. All materials are the property of Planetarium Educator Hannah Buckner who created them. Any websites included are the property of the individual website owners and have been reviewed by a Fairbanks Museum & Planetarium educator.

Overview & Purpose

Describe that our Solar System is made up of planets, moons, asteroids, comets, and dust that orbit the Sun. Use a model to describe how the whole system is spread out

Objectives

1. Know all the names of the planets in order .
2. Be able to describe the various asteroid and comet locations.
3. Be able to use a scale model accurately.

Materials Needed

1. <https://www.solarsystemscope.com/>
2. Any common objects like balls, beads, marbles, coins, drawings on paper, or any other object! (2)

Highlights of this Lesson

Steps to check for student understanding

1. The Sun, planets, moons, asteroids, comets and dust are all different sizes and have vast space between them.
2. There are 3 regions of space that are home to asteroids and/or comets
 - a. The Asteroid belt → also home to Ceres, a dwarf planet
 - b. The Kuiper Belt
 - c. The Oort Cloud

Activity

Finding a scale model of the Earth-Moon system

Find two objects, one for Earth and one for the Moon, to make your scale model.

Before you start, think about this: How large do you think the Earth is in comparison to the Moon?

Now, check your prediction. The Earth's diameter is *four times the diameter of the Moon*, so you should be able to fit four "Moons" side-by-side across the object you picked to represent Earth. Were you right?

If you were not right on the first try, that is okay. Find two more objects. As scientists, we make predictions and test them but they are not always right. Learning and persevering to find the answer is part of being a good scientist.

Now, for the second part, guess how far apart the Moon and the Earth should be.

Once you have made your predictions, measure the diameter of the Earth and place the Moon 30 Earth-diameters away--that is the correct distance for your scale model. Are you surprised? Was your prediction correct?

