

Big Sun, Small Moon – NISEnet

Materials:

- Tennis ball
- Beach ball
- Pump
- Solar Eclipse poster
- Activity and facilitator guides



Resources:

<http://www.nisenet.org/catalog/exploring-solar-system-big-sun-small-moon> Activity guide, facilitator guide, table sign, info sheets, poster, and training videos.

<https://moon.nasa.gov/about/in-depth/> Detailed moon info from NASA to explore/read up on.

<https://spaceplace.nasa.gov/eclipses/en/> The difference between a lunar and solar eclipse.

Learning Goals:

- We can see a solar eclipse from Earth because the Sun and Moon appear to be the same size in the sky.
- The further away an object is, the smaller it appears.
- NASA researchers learn new things by studying the Sun during a total solar eclipse.

Intro (example): A solar eclipse occurs when the moon blocks the light of the sun from hitting Earth. The sun is much larger than the moon, but because the sun is so much farther away, the moon is able to fully block it during an eclipse. These objects only appear to be about the same size from Earth. The sun and moon are remarkably different. The balls in this activity are NOT to scale and do not represent a size or distance comparison between the moon and the sun.

Steps:

1. A tennis ball and a beach ball are different sizes. Can you make them appear to be the same size?
2. Hand the beach ball to a friend. What happens to the apparent size of the beach ball if your friend walks away?
3. Now, hold up the tennis ball. Can you make the tennis ball and the beach ball appear to be the same size? How far apart are you and your friend?

Reflection (throughout): Why is it much more common to see a lunar eclipse than a solar eclipse? What would happen if the moon was further away from the Earth?

Relevance: Look at perspective in other situations. Have you seen a picture of someone pushing the Leaning Tower of Pisa or stomping on the Empire State Building? Try to make your own silly pictures using perspective to make large things look small or vice versa.