

# Shadow Dance: Recreating the Solar Eclipse Phenomenon

Grade Level: Elementary School

## Objective:

- Understand the concept of solar eclipses by simulating the sun, Earth, and moon
- Create a visual representation of the solar eclipse through shadows
- Demonstrate and compare partial, total, and annular solar eclipses

## Materials:

- A lamp/flashlight to represent the Sun
- A small globe/ball to represent the Earth
- A smaller ball to represent the Moon
- A darkened room
- A flat surface or two additional people



## Background

Eclipses are fascinating celestial events that occur when the sun, Earth, and moon align. Did you know that this year on April 8th, a total solar eclipse will be visible in certain parts of the US? During a total solar eclipse, the moon completely blocks the sun from view and the sky looks like night. You can even see the stars! In other parts of the US, a partial solar eclipse will be visible. During a partial solar eclipse, only part of the sun is covered by the moon! It can still get darker outside because part of the sun is still covered by the moon, but you probably cannot see the stars.

Caution: Never look directly at the sun, even during an eclipse, without proper eye protection.

## Procedure:

Set Up: (This may be best done with a team of three people, one for the sun, one for the moon, and one for the Earth.)

1. Set up the light source on one side of the room to represent the sun. (Person 1 can hold the flashlight.)
2. Place the Earth object in a fixed position on a flat surface, away from direct sunlight or other sources of light. (Person 2 can hold the Earth.)
3. Turn on the lamp/flashlight, making sure that it illuminates the Earth.
4. If working with three people, allow Person 3 to hold the moon.

## Activity:

1. Hold the moon object and slowly move it between the Earth and the light source.
  - a. *Observe the shadows cast on the Earth object.*
  - b. *What happens to the shadow if you move the moon closer to the Earth?*
  - c. *What happens to the shadow if you move the moon closer to the sun?*
  - d. *If you have three people, take turns being the sun, Earth and moon.*
2. Align the moon with the sun and Earth to simulate a partial, total, and annular eclipse.
  - a. *For a total eclipse, the moon completely blocks the sun from the Earth's view.*
  - b. *For a partial eclipse, the moon only covers some of the sun's light.*
  - c. *For an annular eclipse, the moon will only cover the sun's center, leaving the sun's outside edges visible!*
3. Did you watch the eclipse on April 8th? Draw a picture of what it looked like. Was it partial or full? Simulate this with your moon, Earth, and sun model.

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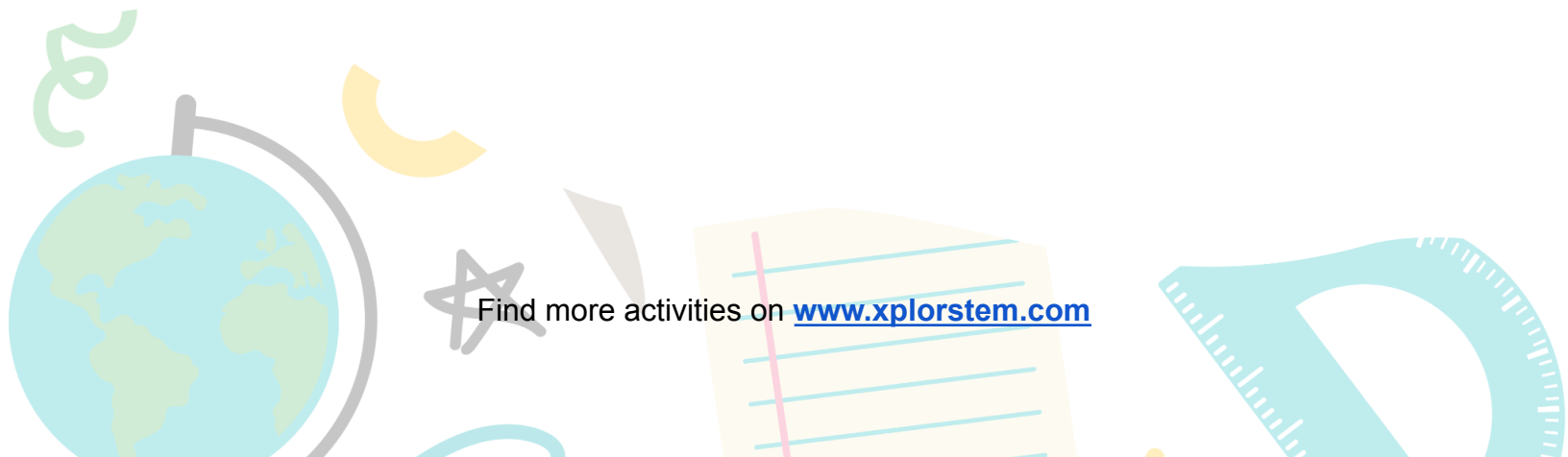


## Reenacting the Eclipse Activity Worksheet

Draw and label the location of the sun, moon, and Earth for:

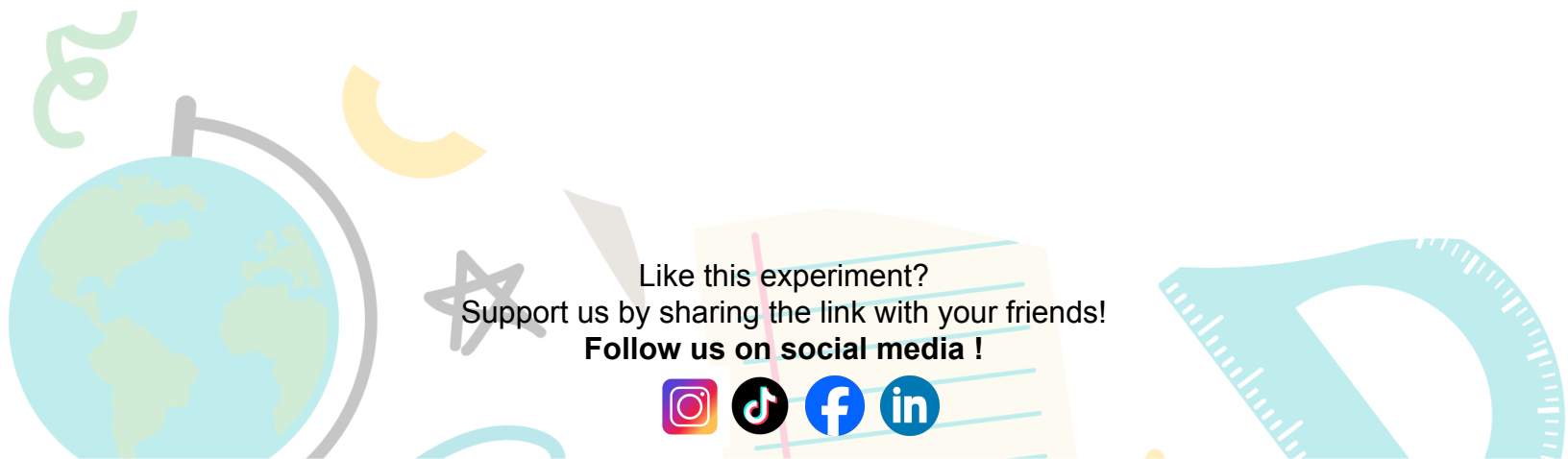
1. A total solar eclipse
2. A partial solar eclipse
3. The eclipse you observed at your location

Total	Partial	What you observed



Let's dive deeper!

Why aren't solar eclipses visible from all parts of the Earth? Use your Earth, moon, and sun to investigate. Write about it here.



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