

# RULER ECLIPSE MODEL

## Materials

Ruler

Binder Clips

Toothpicks

Playdough

Light Source



## Let's Build

1. Create two small balls of playdough, one  $\sim 1/4$ " inch and the other  $\sim 1$ " inch in diameter. Stick a toothpick into each ball.
2. Add a binder clip to each end of the ruler. Insert the toothpicks with the playdough into each binder clip. Ensure they are secure.
3. Have a partner hold a light source, angle your model into the light with the smaller ball closer to the light. Cast the smaller ball's shadow onto the larger ball. Look in the direction of the light source and ensure the smaller ball appears to cover the light source. This is a Solar Eclipse.
4. Next, create a Lunar Eclipse. Flip your model around so the larger ball is closer to the light source. Angle the model until the larger ball casts a shadow onto the smaller ball. Look in the direction of the light source and ensure the larger ball appears to cover the light source.

**Note:** Do not stare directly at the light source!

## What's The Science?

A Solar Eclipse is a phenomenon that occurs when the moon's alignment is such that it comes directly between the sun and the earth. It then blocks the sunlight from reaching the earth, engulfing the planet in complete darkness. When the moon obscures the light from reaching the planet, it is known as a total solar eclipse; and when it blocks only a certain portion of the sunlight from reaching the Earth, it is known as a partial solar eclipse.

Lunar Eclipse is a phenomenon that occurs when the sun, earth, and moon all align in such a way that the planet blocks the sunlight from reaching the moon. The entire moon is engulfed in the deepest region of the Earth's shadow known as the umbra. This causes the moon to turn a reddish color thus Lunar Eclipses are frequently referred to as "blood moon."

