



## FRUITY ECLIPSE

### SCIENCE SAFETY

PLEASE follow these safety precautions when doing any science experiment.

- **ALWAYS** have an adult present.
- **ALWAYS** wear the correct safety gear while doing any experiment.
- **NEVER** eat or drink anything when performing any experiment.
- **REMEMBER** experiments may require marbles, small balls, balloons, and other small parts. Those objects could become a CHOKING HAZARD. Adults are to perform those experiments using these objects. Any child can choke or suffocate on uninflated or broken balloons. Keep uninflated or broken balloons away from children.

### INGREDIENTS

- Orange
- Bright Flashlight

### INSTRUCTIONS

**STEP 1:** Hold the orange an arm's length from your face. Your head represents Earth, while the orange represents the moon. The moon revolves, or moves around Earth. Explain how this system creates a pattern, which can be predicted.

**STEP 2:** Have a friend shine the bright flashlight toward your head. The bright flashlight represents the sun. The Earth revolves around the sun. Create an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distance from the Earth.

**STEP 3:** Using your head, the orange, and the bright flashlight, develop a model of a solar eclipse.

### EXPLANATION

When the orange is placed between your head and the bright flashlight, you create a model of a solar eclipse. As the moon revolves around Earth, it sometimes moves between the sun and Earth. When this happens, the moon blocks the light of the sun from reaching Earth, which causes a solar eclipse.



### SCIENCE BACKGROUND

The sun and the moon form a system with Earth. Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted. The sun is a star that appears larger and brighter than other stars because it is closer. Earth revolves or moves around the sun, and at the same time, the moon revolves around Earth. Sometimes when the moon revolves around Earth, it moves between the sun and Earth. When this happens, the moon blocks the light of the sun from reaching Earth. This causes a solar eclipse. A solar eclipse can only take place during a new moon. During a solar eclipse, the moon casts a shadow onto Earth. Only people in a small area on Earth, where the moon's shadow falls, can see a total solar eclipse.

### I CAN STATEMENT

- I can use observations of the sun, moon, and stars to describe patterns that can be predicted.
- I can support an argument that differences in the apparent brightness of the sun, compared to other stars, is due to their relative distance from the Earth.
- I can develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.

### NEXT GENERATION SCIENCE STANDARDS CONNECTION

1 – Space Systems: Patterns and Cycles

5 – Space Systems: Stars and the Solar System

MS – Earth's Place in the Universe

