Mirage
Purpose: To determine why the Sun's image is seen before sunrise and after sunset.

Materials:
Modeling clay
Small bowl that you can see through
Coin
Helper
Pitcher of water

Procedure:
• Press a walnut-size clay ball into the center of the small bowl.
• Stick the coin in the center of the clay.
• Place the bowl near the edge of a table.
• Stand near the table so that you can see the entire coin.
• Slowly move backwards until the coin is just barely out of sight.
• Ask your helper to fill the bowl with water.

Results: The coin is visible and appears to be in a different position in the bowl.
Why? Light from the coin changes direction as it leaves the water and enters the air. This makes the coin appear to be in a different place. This change in the direction of light is called refraction. The Earth's atmosphere refracts light in a similar way, causing the image of the Sun to appear before the actual Sun rises above the horizon at sunrise and lingers after the Sun moves below the horizon at sunset.