Name: _____ **Date:** _____

Model an Eclipse

In "When Dragons Swallowed the Sun," you read about two solar eclipses that will happen in parts of the U.S. during this school year. In this activity, you'll explore solar eclipses by modeling how the moon can block the light from the sun.

Investigate: How can a small object block your view of a much larger object?

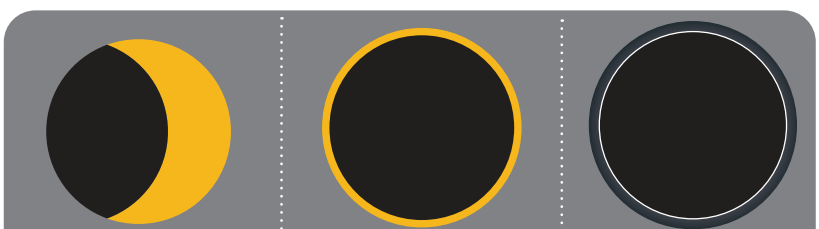
Materials: scissors • sun and moon cutouts (page 4) • ruler

1. Use scissors to cut out the sun and moon from page 4. Place the moon on top of the sun. Does it block the sun completely? _____

2A. Close one eye or cover it completely. Leave the sun cutout flat on your desk. While looking down at the sun cutout, lift the moon toward your open eye. Move the moon so that it mostly covers your view of the sun's center. Which of the solar eclipses is that most like? *(Hint: See the diagram below for the three types of solar eclipses.)* _____

2B. Find that eclipse's box below. Record what you noticed about the moon's position in relation to the sun.

3. Adjust the position of the moon to make the other two types of eclipses. You can move it closer to your eye, farther from it, left, or right. Record your observations about the moon's position in relation to the sun for the other two types of eclipses.



PARTIAL ECLIPSE
The moon's path makes it cover only part of the sun.

ANNULAR ECLIPSE
The moon is far from Earth and covers the center of the sun.

TOTAL ECLIPSE
The moon is closer to Earth and completely covers the sun.

Partial Eclipse:	Annular Eclipse:	Total Eclipse:
_____	_____	_____
_____	_____	_____
_____	_____	_____

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Model an Eclipse (p. 2)

4. Now you'll model the moon's path during a total solar eclipse. With one eye covered, hold your moon along its bottom edge. Hold it between your eye and the sun at a distance that completely covers your sun. Then:

A. Move the moon to the left of the sun so you can completely see the sun again. Slowly move the moon to the right until it covers part of the sun. The eclipse has begun!

B. Keep moving the moon to the right. Notice when it completely covers the sun.

C. The eclipse is over when the sun is fully visible again.

5. Repeat step 4, this time drawing what you saw during your model eclipse. Pause at each position listed in the boxes below to make your drawings. (Remember to start with the moon to the left of the sun.)

1. The moon blocks the sun a little	**2.** The moon blocks the sun a lot	**3.** Total eclipse	**4.** The moon blocks the sun a lot	**5.** The moon blocks the sun a little

Reflect:

1. How can a much smaller object block your view of a much bigger object? *(Hint: Think about where the moon needed to be to block the sun.)*

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Model an Eclipse (p. 3)

2. How is your model similar to a real total solar eclipse?

3. How is your model different from a real total solar eclipse?

TAKE IT FURTHER! In this activity, the diameter (distance across the middle) of the paper sun is about twice as big as the diameter of the paper moon. In real life, the sun's diameter is about 400 times bigger than the moon's! To match that difference, if your paper moon stayed its current size, the distance across your paper sun would equal one-and-a-half large school buses! Do you think you could block out the view of a sun that big using your moon? Why or why not? If yes, how would you do it?

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Model an Eclipse (p. 4)

Directions:
Sun: Cut around the gray square.
Moon: Cut around the circle.