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Eclipses

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GENESEO
THE STATE UNIVERSITY OF NEW YORK

IDEAS THAT MATTER

2023-2024 Myth & Science

Lesson: An Introduction to Solar Eclipses

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Lesson Learning Outcomes

Students will:

- Understand the motions of the sun and moon and how they lead to the solar and lunar eclipse cycles.
- Learn about some specific things that will happen and be noticeable during a solar eclipse, and how to enjoy them safely.
- Learn the cultural and historical contexts and interpretations of solar eclipses – both scientific and mythologic.

Resources

- https://solarsystem.nasa.gov/eclipses/home/ - NASA's everything eclipse page. Information about upcoming eclipses, and how to enjoy them safely.
- https://en.wikipedia.org/wiki/Solar_eclipse_of_April_8,_2024 - The Wikipedia article about the April eclipse. Includes maps of totality and animations showing the path of the shadow along the surface of the Earth. Explains how
- https://nso.edu/eclipse-map-2024/ - Interactive map of the entire eclipse path. Select any location, and it will list the precise times for the eclipse and how long it will last.
- http://www.bibalex.org/eclipse2006/historicalobservationsofsolareclipses.htm - A brief history of the observations, theories, and mythologies of solar eclipses around the world.
- https://eclipse2024.org/eclipse-simulator/ - Interactive maps of upcoming eclipses. Selecting an eclipse and location will launch a simulator showing what the event will look like.

- https://javalab.org/en/eclipse_en/ - Simulation showing the geometry of eclipses. Shown are the orbit of the moon, the rotation of the Earth, and the portions of the shadows that lead to eclipses. Note that the sizes and distances of the objects are not to scale.

50-minute Lecture Plan

- 25 minutes – Cover how eclipses work: see the "C: Solar Eclipses" lecture slides
- 25 minutes – The Geneseo eclipse, what to look for, and how to safely view it: see the "D: Geneseo Eclipse" lecture slides
- For more background information, see the "A: Phases of the Moon" and "B: Lunar Eclipses" lecture slides

Assessment: Reflective Writing Prompt

A total solar eclipse is one of the most awe-inspiring events in nature. What are your plans for the 2024 eclipse, and what are you most excited about?"