

Episode 3

Strand 6.1	Standard 6.1.1	Big Idea The moon changes shape over time in a cyclical pattern.
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Title 28 Days and the Dark Side of the Moon	Time 40 minutes	CCCs Patterns	Practices Obtain information Construct an explanation Argue from evidence
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Phenomenon: The moon changes shape in a cyclical pattern over the course of 28 days, but, on Earth, we only see one side of the moon.

Gathering

Obtain Information

Students will make observations from the [Lunar Phase Lab](#)(uses flash) or [Lunar Phase Simulator](#) module simulator and then discuss their observations with partners.

Reasoning

Construct an Explanation

In previous episodes, students figured out that the moon has a cyclical pattern and that the cyclical pattern is caused by the Sun-Earth-Moon system. In this episode, students will work with partners or small groups to construct an explanation from their observations of patterns for why the moon's cyclical pattern is 28 days and why we only see one side of the moon. Students' explanations will include their models of the Sun-Earth-Moon system.

Teacher Support: Names of the phases of the moon are likely to come up in discussion. It is appropriate to talk about the names of the different phases of the moon, but students will not be assessed on their ability to name each phase. In their explanations, students should be able to describe what is going on as the phases change and the shape the moon should be.

Argue From Evidence

Using their observations and constructed explanations, students will argue from evidence that the moon's cyclical pattern is 28 days. Students will also argue from evidence why we only see one side of the moon.

(Teacher Support: Show the following YouTube video to introduce students to the “dark side” of the moon. Watch the video first by yourself as the teacher and listen to the narration. When

showing it to students, play the video without sound. Doing so will set up the phenomena in a way that will allow students to start crafting their explanations of the system.)

<https://www.washingtonpost.com/news/speaking-of-science/wp/2015/02/09/nasa-gives-us-an-amazing-look-at-the-dark-side-of-the-moon/>

Communicating

Construct an Explanation

Individually, students will write an explanation of how the Sun-Earth-Moon system causes the moon's cyclical pattern to be 28 days and why we only see one side of the moon from Earth. Students may want to include drawings to help explain their models.

Teacher Support: Student constructed explanations will be the formative assessment for moon phases.

Assessment: Students' explanations should demonstrate an understanding of how the sun, moon, and earth interact (rotation and revolution) to cause moon phases.	Materials, resources, handouts, etc. Video Clips: <ol style="list-style-type: none">1. Lunar Phase Lab(uses flash) or Lunar Phase Simulator2. Washington Post Article Universe Sandbox
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