

LESSON 1

Teacher

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Adapted from *Caldecott Connections to Science*

Can I see the Moon every day and night, and why does it appear to change its shape?

Pre-assessment: Give students the Lunar Phases Concept Inventory and have students fill out the chart concerning what they think they know about the Moon.

Engage: Begin lesson by discussing stories that students know about the Moon. Introduce the story “Many Moons” by James Thurber and either read the whole book or book excerpts from the story. Ask students the following questions:

- What do you think the size, distance, and composition of the Moon is?
- Now that you know what Princess Lenore thinks, how would you solve the King’s problem?

Have students count off by fours and in groups of four decide how they would solve the King’s problem. Students should be given approximately fifteen minutes for this task. All groups should have a recorder, a presenter, an encourager, and a time keeper. Group presenters should present their groups’ solution to the King’s problem.

The roles for each group member are shown below:

Roles for Group Work	
Recorder	Writes the proposed solution.
Presenter	Shares the proposed solution to the class.
Encourager	Keeps the group focused on the task.
Time Keeper	Watches the time.

The Engagement phase of the lesson should continue with classroom discussion of the question, “*Can I see the Moon every day and night?*” During the discourse, other questions may emerge and should be placed on the driving question board.

Instruction should follow with the students’ initial assignment of observing the Moon for five weeks and keeping a journal of their Moon observations. At first, students should communicate what they viewed and wondered about regarding the Moon and sky within their journal. However, after lessons two and three (measurement lessons), student should expand their entries to include more purposeful data collection, such as time of day, altitude angle, and azimuth angle. Students should also predict where the Moon will be the following night, and why they think this. If the Moon is not where they expected, they should try to speculate why. More detailed entries should begin by the second week of their five week observations.

Explore: Each week students should share and explore class members’ journal observations. Students should compare and contrast their Moon observations. The exploration stage should last approximately five weeks and will overlap with the explaining stage. Lessons 2 – 4 should be conducted throughout this state, since much of it is conducted outside of class time.

Explain: Throughout the five weeks, students should try to find and explain Moon patterns and explain any discrepancies in their journals when compared with other class members’ journals.

Elaborate: Provide further investigations by allowing students to participate in an on-line Moon project where students share their Moon observations with students from around the world. Students should try to decipher if and why students’ observations appear the same or different than their own.

Evaluate: Provide opportunity for students to review or reflect on their own Moon learning and other students’ ideas concerning why the Moon appears to change shape and appears at different times throughout a month. Give students opportunities to discuss their thoughts and ideas. Request that students provide evidence for their conjectures.