

Space Rocks

Companion Text: If You See the Moon, by Zia Wells

Subject Area & Grade Level: Science, 1st Grade

Materials: Matches and matchbook, baseball

Objectives

After this lesson, students will be able to:

- Demonstrate that friction causes heat
- Describe what causes a “shooting star”
- Evaluate scientific claims made in literature

Staging Activity

Read the story once through without stopping. Then, ask students how the moon got back into the sky after playing on earth with Cirra and Nimbu. Re-read pages 11 through 18. Ask, “is a shooting star really a star, or is it something else?” Ask for a show of hands on the issue.

Core Activity

Throw a baseball across your classroom, or if you can, take your class outside and throw a baseball across the playground or field. Ask students what makes the ball slow down as gravity is pulling it back to the ground, but don’t acknowledge their answers as correct or incorrect. Back inside, tell students to rub their hands together and ask them what causes the heat they feel. Lastly, strike a match on a matchbook, and ask students what caused the match to light.

Tell students that the answer to all three questions is something called “friction,” which is heat caused when things are rubbing against each other. Return to your examples in reverse order, asking students to name the things rubbing against each other in each (match-matchbook, right hand-left hand, and baseball-air). Point out that even though we can’t see air, it is there, and so when things fly through the air, friction causes them to heat up.

Explain that the only star in our solar system is our sun, a ball of fire around which all the planets circle. Therefore, a shooting star is not really a star at all. It is a space rock. When a falling space rock, or meteor, gets near the air surrounding earth, the air heats it up because the meteor is moving quickly, and it burns up as it flies toward earth. From earth, this burning rock looks like a shooting, or falling, star.

Extension

Ask students to think back and critically evaluate the story from a scientific perspective. Which way are shooting stars going—toward the earth or away from the earth? (Toward) So, could a shooting star really have pulled the moon back out to space? (No.) For that matter, could the



moon have really come down to earth anyway? (No.) Discuss why authors might sometimes stretch scientific truths, or ignore them altogether, and how we can tell when they do.



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