

Laurie's Marvelous Moon Adventure

Materials Needed:

- **For Moon Craters:** A baking pan or shallow bin, all-purpose flour, cocoa powder (optional, for color), various small balls and rocks (marbles, bouncy balls, pebbles).
- **For Moon Phases:** A package of Oreo cookies, a plate, a child-safe knife or spoon.
- **For Day & Night Demo:** A dark room, a flashlight (the "Sun"), and a medium-sized ball like a tennis ball or styrofoam ball (the "Moon/Earth").
- **For Moon Art:** A piece of black construction paper, white or silver paint, a small sponge or foil scrunched into a ball, star stickers or glitter (optional).
- **Book (Optional):** A picture book about the moon, like "Goodnight Moon" by Margaret Wise Brown or "Papa, Please Get the Moon for Me" by Eric Carle.

Lesson Plan Details

1. Learning Objectives

By the end of this lesson, Laurie will be able to:

- Demonstrate how craters are formed by dropping objects onto a "moon surface."
- Create models of at least two different moon phases (e.g., full moon, crescent moon) using a cookie.
- Explain in her own words that the moon is bright because it reflects the sun's light.
- Create a piece of art inspired by the moon's texture and appearance.

2. Introduction: Sparking Curiosity (5 minutes)

Start by sitting with Laurie and asking some simple, open-ended questions to get her thinking.

- "Laurie, when you look up at the sky at night, what do you see?"
- "What do you think the moon is made of?"
- "Does the moon always look the same every night?"

If you have a moon-themed book, read it together to set the mood for your adventure.

3. Activity 1: Making Moon Craters! (15 minutes)

Goal: To understand that the moon's surface has craters from being hit by space rocks.

1. **Setup:** Fill the baking pan with a smooth, even layer of flour (about an inch deep). If you like, sprinkle a light dusting of cocoa powder over the top to create a more realistic two-toned surface.
2. **Instructions:** Tell Laurie, "This pan is our moon! The flour is the soft, dusty ground on the moon. These little rocks and balls are meteors flying through space."
3. **Action:** Encourage Laurie to drop the "meteors" from different heights onto the flour surface. Let her experiment! Drop them straight down, toss them from an angle, and use different sizes.
4. **Observe and Discuss:** After each drop, have her carefully remove the object and look at the mark—the crater—it left behind. Ask questions like:
 - "Wow, look at that! What happened to the moon's surface?"
 - "Does a bigger rock make a bigger crater?"
 - "What happens if you drop it from way up high?"

4. Activity 2: Edible Moon Phases (10 minutes)

Goal: To creatively show that the moon appears to change shape in the sky.

1. **Setup:** Place a few Oreo cookies, a plate, and a child-safe tool (like a plastic knife or the back of a spoon) on the table.
2. **Instructions:** Say, "Did you know the moon doesn't always look like a big circle? Sometimes it's just a tiny sliver. We're going to make the different shapes of the moon with these cookies!"
3. **Action:**
 - **Full Moon:** Gently twist an Oreo open. The side with all the white cream is a perfect Full Moon!
 - **Crescent Moon:** Using the spoon or knife, help Laurie scrape away the cream filling, leaving only a thin crescent shape.
 - **Half Moon (Quarter Moon):** Scrape away half of the cream.
 - **New Moon:** The cookie half with no cream is the New Moon (when we can't see it).
4. **Discuss and Eat:** Arrange the cookie moons on the plate and talk about their shapes. Then, enjoy a well-deserved moon snack!

5. Activity 3: Why Does the Moon Shine? (5 minutes)

Goal: To understand the basic concept that the moon reflects the sun's light.

1. **Setup:** Go into a dim or dark room. Give Laurie the ball ("the Moon") to hold. You hold the flashlight ("the Sun").
2. **Instructions:** Say, "Right now, it's dark and we can't see the moon very well. The moon doesn't make its own light. It needs help from the sun!"
3. **Action:** Turn on the flashlight and shine it on the ball Laurie is holding.
4. **Observe and Discuss:**
 - "Look! What happens to the moon when the sun shines on it?" (It gets bright!)
 - "Is the moon making its own light, or is it borrowing the sun's light?" (Borrowing/reflecting!)

6. Activity 4: Moon Art (15 minutes)

Goal: To creatively express what she has learned about the moon's appearance.

1. **Setup:** Lay out the black construction paper, a small amount of white/silver paint, and the sponge or foil ball.
2. **Instructions:** Say, "Let's make our very own moon! We learned that the moon's surface isn't smooth—it's bumpy and has craters. Let's make our painting look bumpy, too."
3. **Action:** Show Laurie how to dip the sponge or foil ball into the paint and then dab it onto the paper in a circle shape. The dabbing creates a wonderful, crater-like texture.
4. **Finishing Touches:** Once the moon is painted, she can add star stickers or glitter to the "sky" around her moon. Let it dry and hang it up!

7. Wrap-up and Assessment (5 minutes)

Gather all of Laurie's creations—her crater pan, her cookie plate, and her moon painting. Talk about what she did and what she learned.

- "Can you show me the biggest crater you made in the flour?"
- "Which cookie is the full moon? Which one is the skinny crescent moon?"
- "When you look at your beautiful painting, can you tell me why the real moon shines so bright in the sky?"

Praise her curiosity and creativity. The goal is to celebrate her exploration. Answering these questions shows she has met the learning objectives in an age-appropriate way.

8. Differentiation and Extension Ideas

- **For extra support:** Focus on just one or two activities (like the craters and the art). Use more hand-over-hand guidance and simplify the vocabulary.
- **For an extra challenge:** Introduce more vocabulary like "orbit," "meteorite," and the names of more moon phases (e.g., "gibbous"). Challenge her to use gray and white paint in her art to show the different colors on the moon. You could even make a simple "astronaut pudding" snack (vanilla pudding with crushed Oreos on top).