

The Great Balancing Act: An Autumnal Equinox Adventure

Materials Needed:

- A flashlight or lamp (to represent the Sun)
- An orange or a styrofoam ball (to represent the Earth)
- A wooden skewer or pencil (to be the Earth's axis)
- A dark marker
- A large piece of paper or poster board
- Art supplies: colored pencils, markers, crayons, autumn-colored paint (red, orange, yellow, brown)
- Natural materials from outside: fallen leaves, small twigs, acorns, pinecones
- Glue or a glue stick
- Scissors
- Notebooks and pencils for writing

Lesson Plan Details

Subject: Integrated Science, Art, and Language Arts

Grade Level: 4th-5th Grade (Ages 9-11)

Time Allotment: 90-120 minutes (flexible)

1. Learning Objectives (What we'll achieve today!)

By the end of this lesson, Daniella and Alisia will be able to:

- **Demonstrate** how the Earth's tilt causes the equinox using a simple model.
- **Explain** in their own words that the autumnal equinox means "equal night," resulting in nearly 12 hours of daylight and 12 hours of darkness.
- **Create** a mixed-media art piece that artistically represents the themes of the autumnal equinox, such as balance, change, and harvest.
- **Write** a short, descriptive poem or story inspired by the feeling of autumn and the science of the equinox.

2. Introduction: The Sun's Balancing Act (15 minutes)

Teacher: "Daniella and Alisia, have you noticed the days getting a little shorter and the air feeling a little cooler? Today, we're going to investigate a special day that marks the official start of fall—the Autumnal Equinox! The word 'equinox' comes from Latin and means 'equal night.' What do you think that could mean?"

- Engage them in a brief discussion about what changes they see, feel, and hear during the fall.
- Introduce the core concept: The equinox is one of only two days all year when the Earth isn't tilted toward or away from the Sun, giving us a day of nearly perfect balance between day and night.

3. Instructional Activities: Exploring the Equinox

Part A: The Science of Balance - A Hands-On Model (25 minutes)

1. **Build the Earth:** Carefully push the wooden skewer through the center of the orange or foam ball. This is Earth's axis! Explain that the Earth is always tilted on its axis, which is why we have seasons.
2. **Mark Your Spot:** Use the marker to draw a small dot or an 'X' where you live on your "Earth." Also, draw a line around the middle for the equator.
3. **Become the Sun:** Darken the room and turn on the flashlight (the Sun). Hold it still.
4. **Demonstrate the Solstices:** First, show them summer by tilting your "Earth" so your 'X' is pointed *towards* the Sun. Spin the Earth. Notice how the 'X' stays in the light for a long time? That's a long summer day! Then, show them winter by orbiting to the other side of the Sun and tilting the 'X' *away* from the light. Spin it. See how it has a much shorter time in the light?
5. **Find the Equinox!** Now, position the Earth so the axis is tilted, but it's not pointing *towards* or *away* from the Sun—it's pointing sideways. The Sun's light should be shining directly on the equator.
6. **Observe the Balance:** Slowly spin the Earth on its axis. Watch your 'X'. It should spend an equal amount of time in the light and in the dark. **This is the equinox!** The great balancing act!

Part B: The Art of Autumn - A Season on Canvas (30-40 minutes)

Teacher: "Now that we understand the science of balance, let's show it through art. We're going to create an 'Equinox Mandala' or a 'Fall Balance Collage' that represents this special time of year."

1. **Gather Materials:** Go outside for a quick 5-minute "nature walk" to collect fallen leaves, twigs, and other autumn treasures.
2. **Design Your Vision:** On the large paper, encourage them to create a design that feels balanced. They could draw a line down the middle and have one side represent "day" and the other "night," or one side represent "summer" and the other "winter," with autumn in the middle.
3. **Create!** Use the collected natural materials, paints, and markers to bring their vision to life. They can glue leaves on, paint a harvest moon, draw animals that prepare for winter, or create patterns with twigs. The goal is to express the feeling of autumn and the idea of balance.
4. **Student Choice:** Let Daniella and Alisia decide the direction of their art. One might focus on the colors, while the other might focus on the day/night theme. This allows for individual creativity.

Part C: The Words of the Season - An Autumn Ode (20 minutes)

Teacher: "Let's use our five senses to capture the feeling of autumn. Close your eyes for a minute. What do you imagine you'd see, hear, smell, taste, and feel on a perfect fall day?"

1. **Brainstorm:** After a minute, brainstorm a list of "autumn words" together (e.g., crisp, golden, harvest, cozy, rustling, cinnamon, shadowy).
2. **Write a Poem or Short Story:** In their notebooks, ask them to write a short poem (like a haiku or an acrostic poem using the word AUTUMN or BALANCE) or a one-paragraph story about the equinox. They should try to include some of the science we learned (like "equal light and dark") and some of the sensory words we brainstormed.

4. Assessment and Wrap-Up (10 minutes)

Instead of a quiz, let's have a "Gallery Walk and Reading."

- Display their finished art pieces.

- Have each student present her artwork, explaining how it represents the autumnal equinox and balance.
- Then, have them read their poem or story aloud.
- **Check for Understanding:** Ask questions during their presentation like, "Why did you choose to show day and night in your art?" or "What does the line 'the sun and moon share the sky' in your poem mean?" This confirms they've grasped the core concepts.

5. Differentiation and Extension

- **For a student who loves building:** Challenge them to build a more complex model of the solar system showing the Earth's orbit and how the equinoxes and solstices happen at different points.
- **For a student who loves cooking:** Plan an "equinox feast" by baking something with autumn ingredients like apples, pumpkins, or cinnamon. Discuss how the equinox is historically tied to harvest festivals.
- **For a student who loves research:** Have them research and report on how different cultures around the world celebrate the autumnal equinox (e.g., Mabon, the Mid-Autumn Festival).