Ornamental Grass

Earth & Space Science | Lesson Guide

2nd Grade

Photo Description

This picture shows ornamental grass with fluffy, feathery seed heads covered in tiny water droplets. The grass looks fuzzy and soft with long, thin leaves. The water drops make the grass sparkle and shine in the light.

Scientific Phenomena

The Anchoring Phenomenon is condensation - water vapor from the air has cooled down and turned into tiny water droplets that stick to the grass surfaces. This happens when warm, moist air meets the cooler grass surfaces, typically during early morning hours when temperatures drop. The grass acts as a surface for water molecules to collect on, demonstrating the water cycle in action at a small scale.

Core Science Concepts

1. Water Cycle in Action - Water changes from invisible water vapor in the air to visible water droplets on surfaces through condensation
2. Plant Structures - Grasses have specialized seed heads (inflorescences) with feathery structures that help seeds disperse in the wind
3. Surface Tension - Water droplets form round shapes and stick to plant surfaces due to water molecules attracting to each other
4. Weather and Temperature - Cool morning air causes water vapor to condense on surfaces, creating dew

Pedagogical Tip:

Use a magnifying glass to help students observe the individual water droplets and seed structures. This hands-on observation builds scientific inquiry skills and makes abstract concepts concrete.

UDL Suggestions:

Provide multiple ways for students to document observations: drawing, verbal descriptions, or taking photos. Some students may excel at artistic representation while others prefer written or spoken explanations.

Zoom In / Zoom Out

1. Zoom In: At the molecular level, water molecules are moving from a gas state (water vapor) to a liquid state as they slow down and cluster together when they touch the cooler grass surface. The plant's cellular structure creates tiny spaces and surfaces where water can collect.

2. Zoom Out: This condensation is part of Earth's global water cycle, where water evaporates from oceans and lakes, travels through the atmosphere, and returns to Earth's surface. The grass ecosystem depends on this moisture for survival and reproduction.

Discussion Questions

1. What do you think would happen to these water droplets if the sun came out? (Bloom's: Predict | DOK: 2)
2. Why do you think the water droplets are different sizes on different parts of the grass? (Bloom's: Analyze | DOK: 3)
3. How might these fluffy seed heads help the grass plant make baby grass plants? (Bloom's: Apply | DOK: 2)
4. Where do you think the water in the air originally came from? (Bloom's: Synthesize | DOK: 3)

Potential Student Misconceptions

1. Misconception: "The grass is sweating or crying water."
   Clarification: The water comes from the air around the grass, not from inside the plant itself.

2. Misconception: "Someone sprayed water on the grass."
   Clarification: The water droplets formed naturally when invisible water vapor in the air cooled down and stuck to the grass.

3. Misconception: "The fluffy parts are cotton or fur."
   Clarification: These are seed heads - special plant parts that help grass make new grass plants by spreading seeds in the wind.

NGSS Connections

- Performance Expectation: 2-ESS1-1 - Use information from several sources to provide evidence that Earth events can occur quickly or slowly
- Disciplinary Core Ideas: K-ESS2.D Weather and Climate, 2-LS4.A Heredity: Inheritance and Variation of Traits
- Crosscutting Concepts: Patterns, Cause and Effect

Science Vocabulary

* Condensation: When water vapor in the air cools down and turns into water droplets
* Water vapor: Water that is invisible in the air as a gas
* Seed head: The fluffy part of grass that holds seeds for making new plants
* Dew: Water droplets that form on surfaces when air cools down at night
* Evaporation: When liquid water turns into invisible water vapor and goes into the air

External Resources

Children's Books:
- The Magic School Bus: Wet All Over by Joanna Cole
- Down Comes the Rain by Franklyn M. Branley
- A Seed Is Sleepy by Dianna Hutts Aston

YouTube Videos:
- "Water Cycle Song" by Scratch Garden - Simple, catchy song explaining evaporation, condensation, and precipitation (https://www.youtube.com/watch?v=ncORPosDrjI)

- "How Seeds Travel" by SciShow Kids - Explains different ways plants spread their seeds including wind dispersal (https://www.youtube.com/watch?v=_OrJCyiFy7I)