

## 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.

### Cross-Curricular Ideas

1. Math - Measurement & Counting: Have students count the water droplets on a single grass seed head or measure the length of the grass blades using non-standard units (paperclips, blocks). Create a simple bar graph showing how many droplets different students found on their observations.
2. ELA - Descriptive Writing: Ask students to write or dictate sentences describing what they see, hear, and feel when observing dewy grass. Use sensory words like "sparkly," "wet," "cool," and "fuzzy." Create a class poem or word web around the word "dew."
3. Art - Nature Collage & Sketching: Have students create detailed drawings of grass seed heads using colored pencils or pastels to show the water droplets. Alternatively, collect actual dried grass (without dew) and create collages on paper, exploring textures and patterns.
4. Social Studies - Weather & Seasons: Discuss how different seasons and weather patterns affect when we see dew. Create a calendar or chart showing which months students are most likely to find dewy grass in your local area, connecting to seasonal patterns and community observations.

### STEM Career Connection

1. Meteorologist (Weather Scientist): Meteorologists study weather and water in the air. They observe dew, rain, and other weather patterns to help people know what to wear and plan outdoor activities. They use tools to measure temperature and humidity to understand when condensation will happen. Average Salary: \$96,000/year
2. Botanist (Plant Scientist): Botanists study plants and how they grow. They learn about grass seed heads, how water helps plants survive, and how seeds travel to new places. They might study how plants collect dew or how seeds spread on windy days. Average Salary: \$63,000/year

3. Environmental Scientist: Environmental scientists study nature and ecosystems, including how water moves through the environment and how plants and animals depend on water. They help protect natural areas like meadows and grasslands where grass grows wild. Average Salary: \$74,000/year

### 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