Ornamental Grass

Earth & Space Science | Lesson Guide

1st Grade

Photo Description

This picture shows fluffy grass with many soft, white seed heads. The grass looks fuzzy and feathery. Water drops cover the grass like tiny jewels.

Scientific Phenomena

The Anchoring Phenomenon is seed dispersal preparation in ornamental grasses. The fluffy, feathery structures (called plumes) are seed heads that have developed specialized features to help seeds travel away from the parent plant. The morning dew visible on the grass demonstrates water condensation, which occurs when water vapor in the air cools and turns back into liquid droplets on surfaces. This natural process helps plants collect moisture from the air.

Core Science Concepts

1. Plant Life Cycles: Plants grow, make seeds, and create new plants from those seeds
2. Seed Dispersal: Plants have special ways to move their seeds to new places (wind, water, animals)
3. Water Cycle: Water can change from gas (invisible) to liquid (droplets we can see)
4. Plant Adaptations: Plants have special parts that help them survive and spread

> **Pedagogical Tip:**
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> Use real grass seed heads in class for students to blow and observe. This hands-on experience helps first graders understand how wind dispersal works better than just looking at pictures.

> **UDL Suggestions:**
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> Provide multiple ways for students to explore this concept: visual observation of the photo, tactile exploration with real grass plumes, and kinesthetic activities like pretending to be seeds floating on the wind.

Zoom In / Zoom Out

1. Zoom In: Inside each fluffy seed head are tiny seeds with feathery parts called "awns" that act like parachutes, helping them catch the wind and float to new locations.

2. Zoom Out: This grass is part of a larger ecosystem where plants, animals, weather, and soil all work together. When seeds travel to new places, they help plants spread across the landscape and provide food and homes for insects and birds.

Discussion Questions

1. What do you notice about how these grass seeds look? (Bloom's: Remember | DOK: 1)
2. How do you think these fluffy seeds travel to new places? (Bloom's: Apply | DOK: 2)
3. Why might it be helpful for plants to send their seeds far away? (Bloom's: Analyze | DOK: 3)
4. What would happen if all the seeds fell right next to the parent plant? (Bloom's: Evaluate | DOK: 3)

Potential Student Misconceptions

1. Misconception: "The fluffy white parts are flowers."
   Clarification: These are actually seed heads that come after the flowers. The fluffy parts help seeds travel in the wind.

2. Misconception: "Water drops appear because someone sprayed the grass."
   Clarification: Water drops form naturally when water in the air gets cold and turns into tiny droplets on the grass.

Cross-Curricular Ideas

1. Math - Counting and Patterns: Students can count the fluffy seed heads in the photo or create patterns using pictures of seeds (big seed, small seed, big seed, small seed). They can also compare quantities: "Are there more water drops or more seeds?"

2. ELA - Descriptive Writing: Have students draw a grass seed head and write or dictate words that describe how it looks and feels (soft, fluffy, feathery, light). Create a class book titled "Our Fluffy Seeds" with each student's illustration and description.

3. Art - Nature Collage: Students can collect dried grass, seed heads, and leaves to create textured collages. This tactile art activity reinforces their understanding of plant structures while developing fine motor skills.

4. Social Studies - Plant Homes: Discuss how seeds traveling to new places helps plants live in different communities. Connect to local plants students see in their neighborhood and explore how they got there.

STEM Career Connection

1. Botanist (Plant Scientist): A botanist studies how plants grow, make seeds, and spread to new places. They might work in gardens, forests, or laboratories to learn about plants and help them grow better. They discover why plants look the way they do and how they survive. Average Annual Salary: $63,000 USD

2. Farmer or Gardener: Farmers and gardeners grow plants and understand how seeds become food and flowers. They learn about wind, water, and sunshine to help plants grow strong and healthy. They also help spread seeds to plant new crops in fields and gardens. Average Annual Salary: $48,000 USD

3. Environmental Scientist: Environmental scientists study how plants and animals live together in nature. They learn how seeds spread across forests and grasslands, and they work to protect wild plants and the places where they grow. Average Annual Salary: $68,000 USD

NGSS Connections

- Performance Expectation: 1-LS1-1: Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.
- Disciplinary Core Idea: 1-LS1.A - Structure and Function

- Crosscutting Concept: Structure and Function

Science Vocabulary

* Seeds: Tiny plant parts that can grow into new plants
* Dispersal: The way seeds move from one place to another
* Dew: Small water drops that form on plants in the morning
* Life cycle: The stages a living thing goes through as it grows
* Adaptation: Special parts that help plants and animals survive

External Resources

Children's Books:
- From Seed to Plant by Gail Gibbons
- The Tiny Seed by Eric Carle
- A Seed Is Sleepy by Dianna Hutts Aston