Ornamental Grass

Earth & Space Science | Lesson Guide

Kindergarten

Photo Description

This picture shows fluffy grass with many soft, feathery seed heads. The grass looks fuzzy and light colored. Water drops cover the thin grass blades like tiny beads.

Scientific Phenomena

The anchoring phenomenon here is seed dispersal by wind. The ornamental grass has developed fluffy, lightweight seed heads (called plumes) that can easily catch air currents and travel to new locations. This is an adaptation that helps plants spread their offspring to areas where they won't compete with the parent plant for resources like sunlight, water, and nutrients. The water droplets visible on the grass demonstrate condensation from morning dew or recent precipitation.

Core Science Concepts

1. Plant Reproduction and Seed Dispersal: Plants produce seeds that need to travel away from the parent plant to grow in new places
2. Plant Adaptations: The fluffy, lightweight structure of these seed heads is specifically designed for wind dispersal
3. Water Cycle Processes: The water droplets show condensation, where water vapor in the air turns back into liquid water
4. Plant Structures and Functions: Different parts of plants (roots, stems, leaves, seeds) have specific jobs to help the plant survive

Pedagogical Tip:

Use the "I Notice, I Wonder" thinking routine with this image. Have students share what they notice first, then what they wonder about. This builds observation skills and generates authentic questions for investigation.

UDL Suggestions:

Provide multiple ways for students to engage with this concept: let them blow cotton balls or dandelion seeds to simulate wind dispersal, use hand gestures to show how seeds "fly," and create drawings or act out the seed dispersal process to support different learning preferences.

Zoom In / Zoom Out

1. Zoom In: Inside each tiny seed is an embryonic plant with all the genetic information needed to grow into a full grass plant, plus stored food (endosperm) to nourish the baby plant until it can make its own food through photosynthesis.

2. Zoom Out: This grass is part of a larger ecosystem where wind patterns, seasonal changes, and interactions with animals all affect where seeds travel and which ones successfully grow into new plants, contributing to biodiversity across landscapes.

Discussion Questions

1. What do you think will happen to these fluffy seeds when the wind blows? (Bloom's: Apply | DOK: 2)
2. How are these grass seeds different from seeds you eat, like sunflower seeds? (Bloom's: Analyze | DOK: 2)
3. Why do you think plants need their seeds to travel away from them? (Bloom's: Evaluate | DOK: 3)
4. What other things in nature are designed to fly or float through the air? (Bloom's: Apply | DOK: 2)

Potential Student Misconceptions

1. Misconception: "Seeds are just for eating" !' Reality: Seeds are baby plants that grow into new plants
2. Misconception: "Plants don't move" !' Reality: While plants can't walk, their seeds can travel far from the parent plant using wind, water, or animals
3. Misconception: "The fuzzy part IS the seed" !' Reality: The fuzzy plume helps the actual seed (which is much smaller) fly through the air

Cross-Curricular Ideas

1. Math - Counting and Patterns: Count the water droplets on the grass blades, or create patterns using cotton balls to represent seeds. Students can sort seeds by size, color, or texture, practicing classification skills.

2. ELA - Descriptive Language and Storytelling: Read "The Tiny Seed" by Eric Carle and have students create their own story about a seed's journey on the wind. Students can use descriptive words (fluffy, light, tiny, feathery) to describe what they see in the photo and practice writing or dictating simple sentences.

3. Art - Nature Collage and Texture Exploration: Collect real grass, seeds, and dried plants to create textured collages. Students can paint or draw what they observe, experimenting with different materials to show the "fuzzy" and "feathery" qualities of the seed heads.

4. Social Studies - Community Gardens and Plant Care: Connect to local gardening initiatives by visiting a community garden or planting seeds together as a class. Students learn about how people in their community grow plants and care for living things, building environmental stewardship.

STEM Career Connection

1. Botanist - A scientist who studies plants and how they grow! Botanists observe plants like the grass in this photo, learn about their seeds, and figure out how plants survive. They might work in gardens, forests, or laboratories. Average Annual Salary: $63,000 USD

2. Farmer or Gardener - Someone who grows plants and crops to feed people and make our world beautiful! Farmers and gardeners understand how seeds grow into plants and use wind, water, and soil to help plants thrive. They care for plants every single day. Average Annual Salary: $48,000 USD

3. Environmental Scientist - A scientist who studies nature and how plants, animals, and weather all work together! Environmental scientists might study how wind spreads seeds across forests and grasslands, helping us understand and protect ecosystems. Average Annual Salary: $71,000 USD

NGSS Connections

- Performance Expectation: K-LS1-1: Use observations to describe patterns of what plants and animals (including humans) need to survive

- Disciplinary Core Ideas: K-LS1.C (Organization for Matter and Energy Flow in Organisms)
- Crosscutting Concepts: Patterns, Structure and Function

Science Vocabulary

* Seed: A tiny package that contains a baby plant and food to help it grow
* Dispersal: When seeds travel away from their parent plant to find new places to grow
* Plume: The fluffy, feathery part that helps seeds fly in the wind
* Condensation: When water vapor in the air turns into water drops
* Adaptation: A special feature that helps a plant or animal survive

External Resources

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