

## Photo Description



This photo shows a large flock of snow geese resting in a farm field during their long journey. You can see hundreds of white birds spread across the brown earth, with some flying overhead. In the distance, you can see power lines, trees, and open sky—places where these geese stop to rest and eat before continuing their travels.

## Scientific Phenomena

**Anchoring Phenomenon:** Why do geese fly together in large groups and stop at farm fields?

**Scientific Explanation:** Snow geese are migratory birds that travel thousands of miles twice a year—flying from their Arctic breeding grounds in spring to warmer southern areas in fall, then returning in spring. This is called migration. Geese stop at farm fields because they need to eat and rest during their long journey. Flying in large flocks helps them save energy (they take turns leading and draft off each other's wings), stay safe from predators, and find food sources together. This behavior is driven by seasonal changes in temperature and daylight length, which trigger instinctive navigation patterns passed down through generations.

## Core Science Concepts

- **Migration:** Many animals travel long distances following seasonal changes. Geese fly south when it gets cold and food becomes scarce, then return north in spring when conditions improve.
- **Animal Behavior & Survival:** Geese gather in flocks to protect themselves, share information about food sources, and work together as a group. Flying in formation reduces energy use for each bird.
- **Seasonal Changes:** The shift from fall to winter causes shorter days and colder temperatures, signaling geese that it's time to leave their northern homes and fly to places with more available food.
- **Habitats & Food Sources:** Geese depend on specific environments—wetlands, lakes, and agricultural fields—to rest and refuel. Farm fields provide seeds and grain that sustain them during migration.

### Pedagogical Tip:

For Kindergarteners, emphasize the observable, concrete aspects of migration: "The geese fly together like a big team. They stop to eat and rest, just like we do on a long car trip." Use gestures and movements to demonstrate flocking behavior—have students "fly" together with arms spread like wings. This kinesthetic approach makes abstract concepts tangible and memorable.

### UDL Suggestions:

**Representation:** Provide images of the same geese in different seasons and locations (Arctic breeding grounds, migration route, southern wintering grounds). Use simple maps with arrows showing their journey. **Action/Expression:** Allow students to demonstrate migration through movement—"fly" across the classroom, "rest" on a designated field area, and "eat" pretend seeds. **Engagement:** Connect to students' personal experiences: "Have you ever taken a long trip and needed to stop for food or rest? Geese do the same thing!"

### Discussion Questions

1. What do you think the geese are doing in this farm field? (Bloom's: Remember | DOK: 1)
  - Encourages observation and prior knowledge activation.
2. Why do you think so many geese fly together instead of flying alone? (Bloom's: Analyze | DOK: 2)
  - Promotes reasoning about animal behavior and group dynamics.
3. If it starts getting very cold where the geese live, what do you think happens next? (Bloom's: Predict | DOK: 2)
  - Connects seasonal changes to animal behavior; builds understanding of cause-and-effect.
4. How is a geese migration journey similar to or different from when your family takes a long trip? (Bloom's: Evaluate | DOK: 3)
  - Deepens comprehension through personal connection and comparison.

### Extension Activities

#### Activity 1: "Geese Flight Formation Dance"

Play music and have students "fly" around the classroom in a loose formation, taking turns being the lead goose. Discuss how flying together uses less energy. You might say, "The goose in front has to work harder. When it gets tired, another goose takes a turn being the leader, just like real geese do!"

#### Activity 2: "Migration Map Journey"

Create a large floor map showing the Arctic (north), a farm field (middle), and a warm southern location (south). Have students "migrate" by walking or hopping from north to south, stopping at the farm field to "eat" and "rest." Repeat the journey going north in spring. Ask: "Why do you think geese need to stop and rest during such a long trip?"

#### Activity 3: "Geese Nest & Egg Exploration"

Show pictures of goose nests and eggs from different locations. Discuss why geese lay eggs in the far north (safer from predators in spring) and why they must leave when it gets cold (no food or water). Use plastic eggs and a "nest" made of sticks or fabric so students can gently observe and handle.

### NGSS Connections

Performance Expectation: K-LS1-1 Use observations to describe patterns of what plants and animals need to survive.

#### Disciplinary Core Ideas:

- K-LS1.A All organisms have basic needs (food, water, shelter, air) that must be met for them to grow, reproduce, and survive.
- K-LS1.B Animals use their body parts in different ways to see, hear, smell, touch, and taste to help them survive.

#### Crosscutting Concepts:

- Patterns Seasonal patterns trigger animal migration behaviors that repeat annually.
- Systems and System Models Geese function as part of larger ecological systems that depend on seasonal changes and available resources.

### Science Vocabulary

- \* Migration: When animals travel a long distance from one place to another, usually following the seasons.
- \* Flock: A large group of birds flying or living together as a team.

- \* Seasonal: Connected to a certain time of year, like winter or spring, when weather and daylight change.
- \* Habitat: The place where an animal lives and finds food, water, and shelter.
- \* Instinct: A natural behavior or action that an animal is born knowing how to do, without being taught.

### External Resources

#### Children's Books:

- Northbound by Brian Pinkney — A poetic story following snow geese on their spring migration north.
- The Goose That Almost Got Cooked by Reginald Howard — A fun tale about a young goose's journey.
- Fly, Eagle, Fly! by Christopher Gregorowski — An African migration story with beautiful illustrations of animal movement.

#### YouTube Videos:

- "Snow Geese Migration" by Audubon Society (3:15 minutes) — Shows real geese flying in formation and stopping at farm fields. Visually engaging with clear narration.  
<https://www.youtube.com/watch?v=FLv-8M0hFDU>
- "Why Do Birds Migrate?" by National Geographic Kids (4:30 minutes) — Age-appropriate explanation of migration triggers and strategies, featuring geese and other birds.  
<https://www.youtube.com/watch?v=cW6XzpRQoda>

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Teacher Note: This lesson capitalizes on the direct observation in the photo to build authentic science understanding. Kindergarteners learn best through movement, visual models, and personal connections. The focus should remain on observable patterns and behaviors rather than complex physiological explanations. Celebrate student questions and observations throughout!