

Photo Description



This image shows hundreds of white snow geese resting together in a large open field during their migration journey. Three geese are flying above the group, with power lines and distant hills visible in the background. The geese gather in big groups like this to stay safe, find food, and rest during their long travel between their winter and summer homes.

Scientific Phenomena

Anchoring Phenomenon: Large-scale bird migration and flocking behavior

Snow geese are traveling thousands of miles between their arctic breeding grounds (summer homes) and southern wintering areas (winter homes). This happens because of seasonal changes in temperature and food availability. As days get longer in spring, the geese sense it's time to fly north where it's warmer and more plants and insects are available for food. They fly in large groups, called flocks, which helps them save energy, spot predators more easily, and share information about good places to rest and eat. This journey happens every year in a predictable pattern—a wonderful example of how animals adapt to changes in their environment.

Core Science Concepts

1. Animal Migration: Snow geese travel long distances twice each year following seasonal patterns of temperature and food availability. This is an inherited behavior that helps them survive.
2. Adaptation and Survival: Traveling in large groups (flocking) is an adaptation that protects geese from predators, reduces wind resistance during flight, and helps them find food and rest areas more easily.
3. Seasonal Changes: Birds respond to seasonal changes in daylight length and weather, which trigger their instinct to migrate. These environmental signals tell animals when it's time to move.
4. Habitat and Ecosystems: Snow geese depend on different habitats at different times of year—arctic tundra in summer and wetlands/fields in winter—showing how animals rely on multiple ecosystems throughout their lives.

Pedagogical Tip:

Before diving into migration concepts, activate prior knowledge by asking students: "What do YOU do when it gets cold?" This personal connection helps third graders understand that animals, like humans, change their behaviors based on seasons and weather. You might also do a simple kinesthetic activity where students "fly" together in formation to feel why geese stick together in groups.

UDL Suggestions:

Multiple Means of Representation: Provide a visual migration map showing the route snow geese take (north/south arrows). Use different colors to show summer and winter homes. Some students may benefit from a tactile model (fabric wings, magnetic pieces on a map) to represent migration.

Multiple Means of Engagement: Create a classroom simulation where students become geese—some lead the flock, some follow, and you act as a predator or weather event. This embodied learning helps kinesthetic learners deeply understand why flocking behavior matters.

Discussion Questions

1. Why do you think these geese are all gathered together in one big group instead of flying alone? (Bloom's: Understand | DOK: 1–2)
2. What do you think would happen to snow geese if winter stayed cold all year and never got warm? (Bloom's: Analyze | DOK: 2–3)
3. How is the way snow geese survive winter different from how you survive winter? (Bloom's: Evaluate | DOK: 3)
4. These geese fly thousands of miles every year. How do you think they know which direction to fly and where to go? (Bloom's: Analyze | DOK: 2–3)

Extension Activities

1. Migration Route Mapping: Give students a large map of North America. Mark the arctic breeding grounds in the north (summer home) and southern wintering areas in the south (winter home). Have students draw the migration route with arrows and label what the geese might find at each location (food, water, temperature). Students can add illustrations of plants and other animals found in each habitat.
2. Flock Formation Flight Simulation: Take students outside for a safe "flight" activity. Have them line up and walk/jog in a V-formation (like migrating geese). Rotate who leads the group so students experience why flying in formation is easier—the bird in front "breaks" the wind for others. Discuss how this adaptation saves energy during long flights.
3. Seasonal Changes Investigation: Create a chart with four columns (one for each season). Have students draw or cut out pictures showing how the same landscape changes through the year (bare trees in winter, green trees in spring, etc.). Discuss how these seasonal changes tell geese it's time to migrate.

NGSS Connections

Performance Expectation:

3-LS1-1: Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

Disciplinary Core Ideas:

- 3-LS1.B: Growth and Development of Organisms
- 3-LS4.C: Adaptation
- 3-LS4.D: Biodiversity and Humans

Crosscutting Concepts:

- Patterns: Seasonal migration follows predictable yearly patterns
- Cause and Effect: Temperature and daylight changes cause geese to migrate
- Structure and Function: Wing structure and flock formation enable long-distance travel

Science Vocabulary

* Migration: When animals travel long distances to find food, water, or better weather (usually happening twice a year).

* Flock: A large group of birds that fly and travel together.

* Adaptation: A special body part or behavior that helps an animal survive in its environment.

* Seasonal: Related to the seasons (spring, summer, fall, winter) and the changes that happen during each season.

* Habitat: The place where an animal lives and finds food, water, and shelter.

External Resources

Children's Books:

- Stranger in the Woods by Carl R. Sams II and Jean Stoick (engaging photos of migrating birds)
- Swirl by Swirl: Spirals in Nature by Joyce Sidman (explores natural patterns including bird flight)
- Geese Find the Way by Francine Yu (specifically about snow geese)

YouTube Videos:

- "Snow Geese Migration" by National Geographic Kids — Shows actual footage of massive flocks migrating, explaining why they travel so far. Length: ~5 minutes

URL: https://www.youtube.com/results?search_query=national+geographic+kids+snow+geese+migration

- "Why Birds Migrate" by CrashCourse Kids — Clear explanation of migration triggers (daylight, temperature) designed for elementary learners. Length: ~4 minutes

URL: <https://www.youtube.com/watch?v=WHVUhYzCbXs>