

Freezin' Yer Feathers Off



Audubon Center
of the North Woods

Purpose: When the Minnesota winter hits we all must adapt by putting on our warm coats and mittens, building snowmen, and drinking lots of hot chocolate. Obviously, birds don't wear hats and mittens, but they do have their own unique adaptations for survival; one bird even has its own snowshoes! Embark on a snowy adventure to learn all about the amazing survival tactics of birds, where they spend the winter, and what happens when they can't adapt to environmental change. Discover how you can help conserve our birds by participating in the science of bird banding and creating your very own bird feeder to take home with you.

Concepts:

- Birds have many different physical, behavioral, and physiological adaptations that allow them to survive in their environment.
- Bird banding is a scientific tool that can be used to study migratory patterns and teach us about the health of the environment.
- Species that cannot adapt to environmental change become extinct.
- People can contribute to bird conservation by improving the habitat around their homes.

Learning Outcomes: *Students will be able to*

- Identify various bird adaptations for winter survival.
- Examine the components of habitat in the field: food, water, shelter, and space.
- Interpret scientific data as part of a bird migration study.
- Relate human behavior to species extinctions and other environmental impacts.
- Apply their understanding towards making practical conservation decisions in their daily lives.

Minnesota Academic Standards:

Science:

- 5.1.3.4.1 Use appropriate tools and techniques in gathering, analyzing and interpreting data.
- 5.4.1.1.1 Describe how plant and animal structures and their functions provide an advantage for survival in a given natural system.
- 6.1.3.4.2 Demonstrate the conversion of units within the International System of Units (SI, or metric) and estimate the magnitude of common objects and quantities using metric units.
- 7.4.2.1.1 Identify a variety of populations and communities in an ecosystem and describe the relationships among the populations and communities in a stable ecosystem.

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CLASS LENGTH: 3 HR

AGES: GRADES 4-12

SEASON: W

GROUP SIZE: 15-17 students

SAFETY: The students will be hiking on and off trails, as well as playing games and doing activities outside, possibly in the snow. Terrain may be uneven in places, and snowshoes may be used depending on snow depth. Check the health chart ahead of time for any food allergies.

MATERIALS: CD player, bird song CD, migration map, laminated world map, migrant cards, dry erase markers, winter adaptation cards, bird banding supplies, bird parts (feathers, Snowy owl wing, Ruffed grouse foot), IUCN Red List Sheet, cups, three bowls of lentils, colorful pipe cleaners, rope, vegetable shortening, spatulas, bird seed, raisins, aluminum baking tray, plastic bags, black permanent marker, string, scissors, bag of nutty trail mix, mouse shaker.

PRE-CLASS PREP: Gather bird parts from Wildlife Barn. Write class outline on the whiteboard. Make sure all the class materials are available in the Curriculum Box, and refill any items as necessary.

CLASS OUTLINE:

- I. Introductions – 15 min
- II. Brrr! It's cold! - 10 min
- III. Adaptation Scavenger Hunt – 1 hr
- IV. Migratory Mapping - 30 min
- V. Bird Banding – 30 min
- VI. Where are the Parakeets? – 10 min
- VII. Pine Cone Bird Feeders
- VIII. The Sending