



# A Year in the Life

## Teacher Lesson Plan

### Creature Categories Post-Visit Lesson

**Duration:** 40-60 minutes

**Minnesota State  
Science Standard**

**Correlations:**

3.4.1.1.1

**Wisconsin State  
Science Standard**

**Correlations:**

B.4.6

C.4.1

C.4.2

F.4.1

F.4.2

F.4.4

**Supplies:**

- 1) Smart Board or Dry Erase Board and Markers
- 2) Animal Adaptation Cards (Appendix II)

### Overview

Students will learn the similarities and differences between how species from six different categories of animals survive the four seasons.

### Objectives

**Upon completion of the lesson, students will be able to:**

- 1) Explain similarities and differences of how 6 different species of animals survive the four seasons.
- 2) Identify how the characteristics of each animal category influence the way individual species adapt to changing seasons.

### Background

Each animal group has different characteristics to help them survive. Birds and mammals have a constant body temperature and are covered with feathers or fur to keep warm, while reptiles and amphibians get their heat from their environment. All groups of animals have different ways to adapt to living in the same environment; however, they also have similarities such as the time of year their young are born and eating as much food as they can in the summer. This is how animals who seem very different can all survive in northern climates.

# A Year in the Life

## Procedure

- 1) Review with students the different characteristics of each of the six categories of animals (see Important Terms) and write the main characteristics on the board.
- 2) Have students get into the same 6 groups they were in for the pre-visit activity.
- 3) Tell the students that their groups will be getting a card with an animal native to northern climates from the same animal category they worked with in the sorting activity.
- 4) Each card will have information on how their animal survives each season. Explain to the students that each group will be in charge of presenting the information on the cards to the rest of the class. One person will be the "reader" and read off the cards, while the rest of the group acts out what the animal does to adapt to the seasons. Give the students time to practice their "performance."
- 5) Once all groups have performed, ask the students what survival techniques were similar between the animal categories and what techniques were different?
- 6) Talk to them about what characteristics each animal category has that requires them to behave the way they do each season. Summer is when food is most abundant so animals will eat extra food to put on weight for the winter. Birds can fly so they can migrate to warmer climates where food is more abundant. Reptiles and amphibians get their body temperatures from the environment so they have to go far below the frost line to hibernate. Fish live in water and can move into deeper water where they can continue to eat all winter long.

## Assessment

- 1) What happens to a mammal's coat in the fall and spring? *It falls out and a new coat is grown in its place.*
- 2) How do most reptiles and amphibians survive the winter? *They hibernate deep underground where the ground doesn't freeze.*
- 3) How do some insects survive the winter? *Remain in their larval form until springtime.*
- 4) How do most fish survive the winter? *Move to deeper water and continue to feed under the ice.*
- 5) What do most birds do in the winter? *Migrate to a warmer climate.*
- 6) What do all categories of animals do in spring? *Have babies.*
- 7) What do most categories of animals do in summer? *Eat to prepare for the winter.*

# A Year in the Life

## Important Terms

**Adaptation** - Changes made by living things in response to their environment (where they live).

**Amphibian** - A cold-blooded (ectotherm), vertebrate animal that lays many soft, jelly-like eggs which allow for water and air to enter. Young are born with gills and metamorphose into adult animals that breathe through their skin. This group includes frogs, toads, salamanders and newts.

**Bird** - A warm-blooded (endotherm), vertebrate animal that lays hard-shelled eggs, is covered in feathers, has wings, and breathes through lungs. This group includes raptors, penguins, water fowl and songbirds.

**Complete Metamorphosis** - A type of metamorphosis found in insects. The insect goes through 4 stages of growth: Egg-Larva-Pupa-Adult. Insects that undergo complete metamorphosis include butterflies, ants, bees, and mosquitoes.

**Ectotherm (cold-blooded)** - Animals that rely on outside temperature for their body heat. They may raise their body temperature by moving to a sunny spot or lower their body temperature by moving to a cool spot.

**Endotherm (warm-blooded)** - Animals that generate their own body heat. They are able to raise their body temperature by shivering or eating to increase energy, or lower their body temperature by sweating or panting.

**Energy** - Ability to do work or produce a change by pushing or pulling some form of matter or to cause a heat transfer between two objects at different temperatures.

**Fish** - A cold-blooded (ectotherm), aquatic animal that lays many soft-sided, jelly-like eggs which allow water to enter. They are covered in scales, breathe through gills and have fins. This group includes sturgeon, lamprey, and carp.

**Habitat** - The area or type of environment in which an organism or biological population normally lives or occurs.

**Hibernation** - A state of inactivity some animals enter in the winter to conserve energy. Animals lower their heart rate and slow their digestive system.

**Incomplete Metamorphosis** - A type of metamorphosis found in insects. The insect goes through 3 stages of growth: Egg-Nymph-Adult. Insects that undergo incomplete metamorphosis include grasshoppers, cicadas, cockroaches, and lice.

**Insect** - An invertebrate animal with 6 legs and an exoskeleton. They breathe through holes in their exoskeleton and reproduce by laying eggs which then undergo either complete or incomplete metamorphosis until they reach adulthood.

**Invertebrate** - An animal without a backbone.

**Mammal** - A warm-blooded (endotherm), vertebrate animal with fur/hair that gives birth to live young, feeds its young milk, and breathes through lungs. This group includes dogs, cats, bears and cows.

## A Year in the Life

**Metamorphosis** - The process of transferring from one life stage to the next (e.g. egg to tadpole to froglet to frog). This process is found in insects and amphibians.

**Reptile** - A cold-blooded (ectotherm), vertebrate animal that is covered in scales, lays soft shelled eggs, and breathes through lungs. This group includes turtles, snakes, lizards and crocodilians.

**Vertebrate** - An animal with a backbone.