

RESOURCE LIBRARY | ACTIVITY : 50 MINS

Why and How Animals Migrate

After watching six short video clips that cover why animals migrate, students synthesize information from the videos and participate in group discussion. Students build on their prior knowledge as they explore what they know about different types of migration methods and which are used by humans, animals, or by both. Finally, students complete an exit ticket to indicate what animal they would like to focus on for their unit project.

GRADES

6, 7, 8

SUBJECTS

Biology, Ecology, Conservation, Geography

CONTENTS

6 PDFs, 6 Videos

OVERVIEW

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For the complete activity with media resources, visit:

<http://www.nationalgeographic.org/activity/why-and-how-animals-migrate/>

In collaboration with

DIRECTIONS

This activity is part of the *Detours and Distractions: How Humans Impact Migration Patterns* unit.

I. Build on students' existing knowledge of animal migration by watching six short video clips and completing an accompanying handout.

- Distribute the *Migration Cues* handout to each student.
- Read the directions aloud and allow students time to read the handout and ask any questions.
- Encourage students to complete the handout as they watch these six short video clips from *Great Migrations*:
 - *Wildebeest Migration*
 - *Red Crab Mothers*
 - *Red Crab Eggs*
 - *Sperm Whale Migration*
 - *Monarch Migration*
 - *Plankton Light Show*
- Allow additional time to complete the handout.
- After the video clips, invite volunteers to share their answers with the class. Supplement their responses with the answers from the *Migration Cues Answer Key* and with additional questions to prompt student thinking, such as:
 - *Do the animals all use the same cues to trigger their migration? Explain.* (Possible responses: No. They use different combinations of internal and external cues, depending on their environments and what they have to do to meet their survival needs: air, water, food, and the ability to reproduce, as well as environmental conditions such as day length and temperature.)
 - *Why do you think more than one thing triggers migration?* (Possible responses: Animals that migrate are not able to get all their survival needs met by staying in one location, and may need to move to find suitable conditions for breeding or nesting. Animals are diverse and have evolved with varying capabilities to survive, have different senses and modes of locomotion, and different needs.)
- Collect the *Migration Cues* handout upon completion or at the end of the activity.

2. Introduce different migration methods through the *What Do You Know About Migration Methods?* handout.

- Distribute the *What Do You Know About Migration Methods?* handout to each student. This informal quiz introduces students to different migration methods and allows them to choose if each method is used by humans, animals, or by both. Students may complete it individually or in groups.
- When individual students or small groups have completed the quiz, ask them to join with another student or group to share and discuss answers. Encourage students to ask for and provide reasoning to back up their answers.
- Regroup for a class discussion and invite students to share answers. Supplement students' answers with information from the resources provided in the *Background & Vocabulary* tab.
- Collect the *What Do You Know About Migration Methods?* handout upon completion or at the end of the activity.

3. Revisit the class *Know & Need to Know* chart to add students' ideas about animal migration.

- Revisit the class *Know & Need to Know* chart from the *Collision! Human Impacts on Animal Migration* activity. Ask students to add to the chart by asking the following questions:
 - *What do we already know about animal migration?* (Possible responses: animals move from place to place, animals live parts of their lives in different places, animals move during different seasons or when they need to find mates)
 - *What do we already know about which animals migrate?* (Possible responses: monarch butterfly, birds going south for the winter, whales)
 - *What do we already know about why animals migrate?* (Possible responses: to find food, to find mates, to stay warm)
 - *What do we already know about how animals migrate?* (Possible responses: using their senses (eyes, nose, ears), following others, remembering the way, magnetic field of the earth)
 - *What do we need to know?*

4. Invite students to complete the *Choose Your Migrating Animal* exit ticket.

- Project the *Migrating Animal Collage* to introduce the 12 animals students can study; this visual input will help students make their decisions on the exit ticket.

- Distribute the [Choose Your Migrating Animal](#) exit ticket, which includes a list of the animals students can choose from for their unit project.
 - Humpback whale (*Megaptera novaeangliae*)
 - Reindeer (caribou) (*Rangifer tarandus*)
 - Arctic tern (*Sterna paradisaea*)
 - Adelie penguin (*Pygoscelis adeliae*)
 - Pronghorn (*Antilocapra americana*)
 - Leatherback sea turtle (*Dermochelys coriacea*)
 - Chinook salmon (*Oncorhynchus tshawytscha*)
 - White-throated sparrow (*Zonotrichia albicollis*)
 - Globe skimmer dragonfly (*Pantala flavescens*)
 - Sandhill crane (*Antigone canadensis*)
 - Canada goose (*Branta canadensis*)
 - Painted lady butterfly (*Vanessa cardui*)
- Ask each student to complete the exit ticket by listing the top three animals they would be interested in studying throughout the unit and why. Explain that students will be grouped together based on interest. Project groups should have three to four students; each group will study a different animal.

Tip

Step 1: Before class discussions, scaffold students' sharing of their ideas by having them engage in a think-pair-share activity.

Modification

Step 4: Alternatively, instead of assigning groups based on interest, students can be assigned an animal, or pre-assigned groups can randomly draw animals.

Tip

Step 4: Animals on the list are recommended because there are many online resources to support students' research and they are not covered explicitly during the unit. Different or additional animals can be included.

Informal Assessment

Use students' responses from the various discussions and their answers to the *Migration Cues* and *What Do You Know About Migration Methods?* handouts to assess their understanding of animal migration and how that thinking changed throughout the activity. Use students' exit tickets to gauge interest and to determine project groups.

Extending the Learning

- Find a story or fact about a migratory animal in a newspaper, magazine, or on the news. Students can bring these into the next class or share them through an online class discussion board.
- Visit a local zoo, aquarium, or conservation center. This provides opportunities for students to see animals they might study, as well as add to their knowledge about animal migration and the need for conservation.

OBJECTIVES

Subjects & Disciplines

Biology

- Ecology
- Conservation

Geography

Learning Objectives

Students will:

- Understand that animals migrate for different reasons and use different cues.
- Identify some things they know and some things they need to know about animal migration.
- Explain their interest in working with different animals for their unit project.

Teaching Approach

- Project-based learning

Teaching Methods

- Discussions
- Guided listening
- Multimedia instruction

Skills Summary

This activity targets the following skills:

- 21st Century Student Outcomes
 - Learning and Innovation Skills
 - Communication and Collaboration
- Critical Thinking Skills
 - Remembering
 - Understanding
- Geographic Skills
 - Asking Geographic Questions
- Science and Engineering Practices
 - Constructing explanations (for science) and designing solutions (for engineering)
 - Obtaining, evaluating, and communicating information

National Standards, Principles, and Practices

COMMON CORE STATE STANDARDS FOR ENGLISH LANGUAGE ARTS & LITERACY

- CCSS.ELA-LITERACY.SL.7.1:

Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on Grade 7 topics, texts, and issues, building on others’ ideas and expressing their own clearly.

NEXT GENERATION SCIENCE STANDARDS

- Crosscutting Concept 1:

Patterns

- Crosscutting Concept 2:

Cause and effect: Mechanism and prediction

- **Crosscutting Concept 7:**

Stability and change

- **MS. Ecosystems: Interactions, Energy, and Dynamics:**

MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

- **Performance Expectations: MS-LS2-2:**

MS-LS2-2: Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

- **Science and Engineering Practice 1:**

Asking questions and defining problems

- **Science and Engineering Practice 6:**

Constructing explanations and designing solutions

- **Science and Engineering Practice 8:**

Obtaining, evaluating, and communicating information

Preparation

What You'll Need

MATERIALS YOU PROVIDE

- Dry erase markers
- Markers
- Whiteboard, chalkboard, or chart paper
- Writing utensils

REQUIRED TECHNOLOGY

- Internet Access: Required
- Tech Setup: 1 computer per classroom, Monitor/screen, Projector, Speakers

PHYSICAL SPACE

- Classroom

GROUPING

- Large-group learning

RESOURCES PROVIDED: UNDEFINED

- [Wildebeest Migration](#)
- [Red Crab Mothers](#)
- [Red Crab Eggs](#)
- [Sperm Whale Migration](#)
- [Monarch Migration](#)
- [Plankton Light Show](#)

RESOURCES PROVIDED: HANDOUTS & WORKSHEETS

- [Migration Cues](#)
- [Migration Cues Answer Key](#)
- [What Do You Know About Migration Methods?](#)
- [What Do You Know About Migration Methods? Answer Key](#)
- [Choose Your Migrating Animal Exit Ticket - Collage](#)
- [Choose Your Migrating Animal Exit Ticket](#)

BACKGROUND & VOCABULARY

Background Information

Animals use a variety of cues to determine when it is time to migrate. Some migrations are triggered by external cues, like changing daylight hours or temperature. Other animals rely on internal cues like fat reserves or instinct, while others respond to multiple cues occurring at the same time. During migration, different species use different methods to guide their journey. Some animals rely on the position of the sun, moon, or stars, some use smell, and still others use the magnetic field of the Earth to guide them.

Prior Knowledge

Recommended Prior Activities

- [Collision! Human Impacts on Animal Migration](#)

Vocabulary

Term	Part of Speech	Definition
animal migration	<i>noun</i>	process where a community of animals leaves a habitat for part of the year or part of their lives, and moves to habitats that are more hospitable.
competition	<i>noun</i>	contest between organisms for resources, recognition, or group or social status.
condition	<i>noun</i>	an environmental state that must be present or exist in order for something else to exist or function.
curiosity	<i>noun</i>	desire to know more about a subject.
detour	<i>noun</i>	unplanned or temporary path.
distract	<i>verb</i>	to divert or draw attention away from something.
environment	<i>noun</i>	conditions that surround and influence an organism or community.
external	<i>adjective</i>	outside of something.
internal	<i>adjective</i>	inside, or having to do with the inner part of something.
method	<i>noun</i>	way of doing something.
migration cue	<i>noun</i>	natural signal, such as a change in temperature, to which animals respond by migrating to more hospitable habitats.
migration pattern	<i>noun</i>	predictable movements, in time and space, of a group of animals or people.
overcrowd	<i>verb</i>	to fill an area with too many objects or organisms.
predator	<i>noun</i>	animal that hunts other animals for food.
reproduce	<i>verb</i>	to create offspring, by sexual or asexual means.
survival	<i>noun</i>	ability to live.
trigger	<i>verb</i>	to cause or begin a chain of events.

For Further Exploration

Books

- [University of California Press: Animal Migration: Remarkable Journeys in the Wild](#)
- [Dawn Publications: Going Home: The Mystery of Animal Migration](#)
- [National Geographic: Great Migrations: Whales, Wildebeests, Butterflies, Elephants, and Other Amazing Animals on the Move](#)

Websites

- [National Geographic: Resource Library: Animal Migration](#)



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