

RESOURCE LIBRARY
LESSON

Helping Animals Migrate

Students learn about the positive actions that help support migrating animals. Then they create an original board game that showcases what they have learned and inspires players to care about animal migration and protect migratory routes. Students test each other's game prototypes at a culminating game fair. This lesson is part of the Interrupted Migrations unit.

GRADES

6 - 8

SUBJECTS

Conservation, Geography, Social Studies

CONTENTS

2 Activities

In collaboration with



ACTIVITY 1: ASSISTING ANIMAL MIGRATIONS

| 1 HR 40 MINS

DIRECTIONS

Interrupted Migrations Unit Driving Question: *How can human activities help or hinder animal migrations?*

Helping Animals Migrate Lesson Driving Question: *How has human activity changed the environment?*

1. Introduce innovations that help salmon migrate when human developments interrupt their route.

- Begin by activating students' prior knowledge by discussing the following questions as a class:
 - *What do you already know about salmon migration?*
 - *What kinds of human impacts might get in the way of salmon being able to spawn?*
(Possible responses: dams, pollution, fishing)
- As a class, watch the video, *Whoosh Innovations' "Salmon Cannon" Gives Fish a Boost Over Dams*. After watching the video, ask students: *What are the benefits of the salmon cannon? What are the risks?*
- Then, as a class, watch the video, *Salmon in the City* up to at least the 1:50 minute mark. After watching the video, ask students: *What are the benefits of the salmon ladder? What are the risks?*
- Throughout the class discussions, guide students to make the connection on how creativity and innovation may be needed to develop solutions to interrupted migrations.

2. Students jigsaw read resources to introduce them to three species that have benefited from human assistance.

- Distribute copies of the *How Humans Assist Animal Migration* handout to each student. Assign each member of the project groups a different resource to explore and learn more about. The two resource options are:
 - *Snake Migration*
 - *River Revives After Largest Dam Removal in U.S. History*
- Have each student complete their *How Humans Assist Animal Migration* handout as they read or watch their assigned resource. After completing the handout, have each student teach the other members of their group what they have learned.
- Ask students: *Which, if any of these, would be a good solution to the human impact on your game board? Why?*

3. Groups research positive human actions that may support animal migration.

- Students have already created two sets of cards for their game in previous activities: human impact cards and critter cards. In this step, students will create a third set of cards for their game—positive action cards.
- Distribute one copy of the *Positive Action Cards Research* handout to each group. Read the directions for creating the cards as a class.
 - Have students work together in their groups to conduct their research, completing the table on the handout prior to creating the cards in Step 4.

4. Students create a set of positive action cards for their games.

- As groups finish their research from Step 3, have students begin creating the positive action cards by following the instructions on the *Positive Action Cards Research* handout.
- Once each group has finished creating their cards, conduct a class discussion to debrief the activity. Ask students: *Which of these positive actions are most relevant to your geographic area? Why?*

Tip

Step 1: Watching up to 1:50 of the *Salmon in the City* video is long enough to know what and where the salmon ladder is. Have students watch more of the video to learn how many types of salmon migrate and the duration of the migration, the importance of salmon to indigenous communities in Washington state, the history of how humans have impacted the geography, and the history of fish ladder design back to 1911.

Informal Assessment

Positive Action Cards Research: Collect students' *Positive Action Cards Research* sheets. Make sure students have accurate information for each response.

Extending the Learning

Have students come up with actions to take in their school or community to educate about and/or assist animal migration. For example, the class could seek permission to plant a butterfly garden or could spend a day picking up trash in an area that supports migratory wildlife.

OBJECTIVES

Subjects & Disciplines

- Conservation
 - Geography
 - Social Studies

Learning Objectives

Students will:

- Research how humans can assist migratory animals.
- Explain different positive actions people can take to support animal migration by creating positive action cards.

Teaching Approach

- Project-based learning

Teaching Methods

- Jigsaw
- Multimedia instruction
- Research

Skills Summary

This activity targets the following skills:

- 21st Century Student Outcomes
 - Learning and Innovation Skills
 - Communication and Collaboration
 - Critical Thinking and Problem Solving
- 21st Century Themes

- Civic Literacy
- Environmental Literacy
- Global Awareness
- Critical Thinking Skills
 - Analyzing
 - Applying
 - Creating
 - Evaluating
 - Remembering
 - Understanding

National Standards, Principles, and Practices

COMMON CORE STATE STANDARDS FOR ENGLISH LANGUAGE ARTS & LITERACY

• Reading Standards for Informational Text 6-12:

Key Ideas and Details, RI.8.2

THE COLLEGE, CAREER & CIVIC LIFE (C3) FRAMEWORK FOR SOCIAL STUDIES STATE STANDARDS

• D2.Civ.12.6-8:

Assess specific rules and laws (both actual and proposed) as means of addressing public problems.

Preparation

BACKGROUND & VOCABULARY

Background Information

Although animals face many obstacles created by humans on their migratory journeys, there are ways that humans can limit or minimize human impacts and assist migration. One often-cited example of the ways people are assisting animal migration is through the construction of animal corridors—an effort to increase habitat connectivity—where animals’ migratory pathways are maintained or restored. These are not the only actions groups and individuals

are taking, however. A memorable example is of the “salmon cannon,” which assists fish in their journey back to their spawning grounds. Assisting migration can occur through individual actions, or through more widespread changes in law and policy, and wildlife management.

Public awareness has been used to build support for helping preserve migratory routes. One vehicle for sharing this kind of geographic information is through games. The use of games in social studies has shown to improve a student’s role in and understanding of the world. Learning about animal migration through a game will support a call to action for the student in sharing the future of animal migration.

Prior Knowledge

Recommended Prior Activities

- [Geography Matters](#)
- [Intersecting Actions](#)
- [Map That Game Board](#)
- [Meet Migratory Animals](#)

Vocabulary

Term	Part of Speech	Definition
animal migration	noun	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.
assist	noun	to help or support.
corridor	noun	hallway, or connecting passage of land.
interconnected	adjective	connected with one another.
region	noun	any area on Earth with one or more common characteristics. Regions are the basic units of geography.

ACTIVITY 2: INSPIRING MIGRATION ROUTE CONSERVATION | 2 HRS 30 MINS

DIRECTIONS

Interrupted Migrations Unit Driving Question: *How can human activities help or hinder animal migrations?*

Helping Animals Migrate Lesson Driving Question: *How has human activity changed the environment?*

1. Facilitate group discussions about what makes playing a game fun and educational.

- Have students discuss in their project groups the following questions:
 - *What are some of your favorite games? What makes them fun?*
 - *What have you learned from different games you have played?*
 - *The game you are creating needs to be fun, but it also needs to educate people about animal migration and inspire them to care. What can you do in your game to encourage players to learn and care about animal migration?*

2. Prepare groups for the game design workshop.

- Throughout this unit, students have already created several possible elements for their game:
 - Three sets of cards: human impact cards, critter cards, and positive action cards
 - Game Board Map with human impacts and migratory routes
 - Contextual information, including a description of the setting and migration map
- The goal for students is to use all of these pieces and create a game that can be played by at least two people. In this activity, students design the game and write the rules.
- Distribute a copy of the *Interrupted Migrations: Game Design Guide* and the *Interrupted Migrations: Game Design Rubric and Checklist* to each student. As a class, discuss the directions and expectations for the game design.

3. Set up and facilitate game design studio time.

- In their project groups, have students collaborate to organize all of their previously created pieces for their board game. Then, have students complete the *Interrupted Migrations: Game Design Guide* handout.

- As students finish the *Interrupted Migrations: Game Design Guide*, guide groups to complete the design and development of their board games.
- As student groups finish the development of their game, have each group play their game at least once to test that it has all come together as planned.
- After testing by playing the game, have groups make revisions based on the game play to refine games and instructions.

4. Students present their game to the class before taking part in a class-wide Animal Migrations Game Fair.

- Have each project group introduce their game by sharing the following details:
 - The geographic area that is the setting for their game
 - The three species involved in their game
 - A general explanation of how the game is played
 - The objective of the game
- After each team has presented, have students choose at least one game to play other than their own. Have students move to different areas of the room in order to play the game they have selected.
- As students are playing the games, distribute a copy of the *Interrupted Migrations: Game Feedback Card* to each student. After students have finished playing the game, have them complete the card to provide feedback for the game designers.
- If time allows, have students rotate to a new game to play.

5. Debrief the unit with the class.

- As a class, have students share their game play experiences by discussing the following questions:
 - *What did you like most about the game you played?*
 - *How did the game inspire you to care more about animal migration and protecting migratory routes?*
 - *What is one thing you can do to protect migratory routes in our area?*

Tip

Step 3: If students feel constrained by having to use the cards created in the unit, have students create new items that draw on what they learned.

Tip

Step 3: It may be useful to have a collection of games available so students can see models of rules and examples of game play.

Tip

Step 4: Preview the feedback cards and model how they should be filled out prior to game play.

Tip

Step 4: Think about how you can support students in moving forward through game play when design problems interfere with the flow of play. Emphasize for students that clear presentation of their learning about animal migration is more important than game play; refer to the rubric as necessary to support this point.

Rubric

Game Design Use the Game Design Rubric and Checklist to assess this game design project.

Extending the Learning

Students can invite other people to play with them, including guardians, other students, or school staff. Additionally, students could bring their games home to play with their families.

OBJECTIVES

Subjects & Disciplines

Geography

Social Studies

Learning Objectives

Students will:

- Design a game that showcases what they have learned about animal migration in their region.
- Review classmates' games for content and enjoyability.

Teaching Approach

- Project-based learning

Teaching Methods

- Brainstorming
- Cooperative learning
- Research

Skills Summary

This activity targets the following skills:

- 21st Century Student Outcomes
 - Learning and Innovation Skills
 - Communication and Collaboration
 - Creativity and Innovation
 - Critical Thinking and Problem Solving
- 21st Century Themes
 - Civic Literacy
 - Environmental Literacy

National Standards, Principles, and Practices

COMMON CORE STATE STANDARDS FOR ENGLISH LANGUAGE ARTS
& LITERACY

- CCSS.ELA-LITERACY.RH.6-8.7:

Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.

- **CCSS.ELA-LITERACY.SL.6.2:**

Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.

- **CCSS.ELA-LITERACY.SL.7.4:**

Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.

- **CCSS.ELA-LITERACY.W.7.9:**

Draw evidence from literary or informational texts to support analysis, reflection, and research.

THE COLLEGE, CAREER & CIVIC LIFE (C3) FRAMEWORK FOR SOCIAL STUDIES STATE STANDARDS

- **D2.Geo.1.6-8:**

Construct maps to represent and explain the spatial patterns of cultural and environmental characteristics.

Preparation

BACKGROUND & VOCABULARY

Background Information

Humans have the opportunity to be powerful agents for change in assisting animal migration and limiting their impacts on migratory pathways. Education is a crucial method for spreading the word about why supporting animal migration is important and how we might take actions that help. Visual aids, like storytelling and narrative, are highly effective ways of communicating both the urgency of animal migration challenges and ways to take action. One vehicle for sharing this kind of geographic information is through games. The use of games in social studies has shown to improve a student's role in and understanding of the world. Learning about animal migration through a game will support a call to action for the student in sharing the future of animal migration.

Prior Knowledge

Recommended Prior Activities

- [Assisting Animal Migrations](#)
- [Geography Matters](#)
- [Intersecting Actions](#)
- [Mapping a Region's Migratory Animals](#)
- [Map That Game Board](#)
- [Meet Migratory Animals](#)
- [Researching a Region's Migratory Animals](#)

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.
migration route	<i>noun</i>	path followed by birds or other animals that migrate regularly.
region	<i>noun</i>	any area on Earth with one or more common characteristics. Regions are the basic units of geography.

