



How do Species Interact with the Environment?

Grade 4 Lesson Plan

Lesson #3: How Do Species Interact with the Environment? **Duration:** 50 mins + research time
Subject: Science **Topic:** How Species in the TRUGG respond and adapt to environmental changes

Overview

After reviewing the four seasons, students explore how these and other environmental changes, such as natural disasters and human activities, can affect species in the Tumbler Ridge UNESCO Global Geopark (TRUGG). (Note: this inquiry is best completed as a continuation of Lessons 1 – 2.)

Lesson Objectives

Students will be able to:

- Describe how humans and other species sense, respond and adapt to seasonal changes in the environment
- Conduct research to collect information about a specific species in the TRUGG
- Identify ways that this species in the TRUGG senses, responds and adapts to major environmental changes
- Explain how changes in the environment impact species in the TRUGG

Curriculum Connections

Please see the *TRUGG Education Toolkit Curriculum Connections Matrix* for specific connections of this lesson to the B.C. Curriculum for Grade 4.

Materials

- *Tumbler Ridge UNESCO Global Geopark (TRUGG) Species Inquiry III Student Handout.*
- Access to computers/laptops, the Internet and/or other resources to support student research.

Teacher Prep

- Print and copy a class set of the *Tumbler Ridge UNESCO Global Geopark (TRUGG) Species Inquiry III* Student Handout.
- Reserve computers/tablets for your class, with access to the Internet.
- Review the Background Information (and other resources as needed) to ensure you have a clear understanding of key concepts explored in this lesson.

Background Information

All living things, including humans, need to sense, respond and adapt to changes in the environment in order to meet their basic needs and survive. These changes can be related to natural ecological processes, climate, predators and other species that compete for the same food and space, or natural disasters.

One entry point for younger students is the concept of adapting to seasonal changes, as humans have always needed to adapt to the change of seasons. For First Nations, seasons embodied the cyclical nature of life: birth, youth, adulthood and death. Seasons meant changes in lifestyle, food, social activities, religious and spiritual practices and economic pursuits. Many First Nations noted the changes in their lives that were influenced by the seasons by naming the months of the year after major events occurring during these periods. It was important for their survival that they observe and keep track of these changes [Government of Canada, Indigenous and Northern Affairs Canada].

Students may also be interested in learning about how organisms adapt to natural disasters, such as floods, forest fires or extreme weather events. Beyond fleeing from such events, organisms have developed a wide range of responses and adaptations to such changes that students can explore.

Changes to the environment of an organism can also be related to human activities such as industrial practices, habitat destruction or climate change. In addition to learning about how organisms adapt to naturally occurring changes to their environment, it is important for students to consider how human activities have an impact on other living things as all species continuously adapt to meet their basic needs and survive.

To aid in the research inquiry process and lesson:

- For the lesson hook, you might focus on the current season so that students can make connections more easily.
- Students can use this inquiry project as a continuation of their in-depth research about a species in the TRUGG from their inquiries in Lessons 1 and 2.
- You may wish to have students share their research in small groups or to the entire class as a presentation.

Please see the *Tumbler Ridge UNESCO Global Geopark Teacher Backgrounder* for more background and details on the Geopark.

Lesson Activities

Introduction/Hook:

1. Read the following passage (or have student volunteers do so), focused on First Nations perspectives on seasons and change, with your students:

“For First Nations, seasons embodied the cyclical nature of life: birth, youth, adulthood and death. Seasons meant changes in lifestyle, food, social activities, religious and spiritual practices and economic pursuits. Many First Nations noted the changes in their lives that were influenced by the seasons by naming the months of the year after major events occurring during these periods. It was important for their survival that they observe and keep track of these changes.”

2. Ask students to list different ways their families get ready for a particular season (e.g. winter). Some ideas might include: we cut up more wood to burn for heat, we turn up our furnace, we wear warmer clothing, etc. List these ideas on the board.

Activity 1:

1. Ask students to form two concentric circles, with half of the students on the outside and the other half forming a circle within the circle. The students in the inner circle face those on the outer circle (when ready, you can also ask students to sit down across from their partner, as desired). Tell the students the first discussion topic (see below) and give them 3 minutes to discuss it with the person they are standing in front of. Once 3 minutes is up, those in the inner circle rotate one person to the right (the outer circle doesn't move) and face the new partner to discuss the next topic with. Choose a few volunteers to share highlights from their conversation with the class after each topic. Students can also generate additional questions for discussion, as desired.

Topic 1: “How do you think animals sense a change in season?”

Topic 2: “How do you think species in the Geopark (or in B.C.) respond to the change of seasons?” (If students have already completed Lesson 1 or 2, they can discuss this with regard to a species they have already explored.)

Topic 3: “How do you think species sense and respond to environmental disasters, such as a flood or forest fire?”

Activity 2:

1. Distribute the *Tumbler Ridge UNESCO Global Geopark (TRUGG) Species Inquiry III Student Handout* and review with students. Ask students to write the species they explored in Lesson 2 as their topic under ‘My Species’. If the students have not completed an inquiry from a previous lesson, make a list of species found in the TRUGG on the board with the students and they can choose a species to explore from that list.
2. Provide access to the Internet and other resources to support focused research and completion of the student handout.

Closure:

1. Have students share their findings with a partner. Discuss key findings as a class.

Assessment/Evaluation

- Observe the introductory activities and assess student's ability to describe how humans and other species sense, respond and adapt to changes in the environment.
- Review and assess student's *Tumbler Ridge UNESCO Global Geopark (TRUGG) Species Inquiry III* Student Handout.

Extensions

- Create a poster, story, poem or other representation that describes a natural disaster, such as a forest fire, and how their chosen species would sense, respond and adapt to it.
- In partners or small groups, have students use photos and other graphics from magazines or the Internet to create a collage representing how they get ready for a particular season of the year.