



Dinosaurs in our Backyard

Grade 4 Lesson Plan

Lesson #4: Dinosaurs in our Backyard

Duration: 50 mins + research time

Subject: Science

Topic: Dinosaurs in the TRUGG

Overview

This lesson highlights the dinosaurs that have been discovered in the Tumbler Ridge UNESCO Global Geopark (TRUGG). Students delve into the life of a chosen dinosaur and explore what it looked like, what it ate, where it lived, and what it did while alive. Finally, students reflect on how dinosaurs also had to meet their basic needs and what this tells us about all species, including humans, on Earth.

Lesson Objectives

Students will be able to:

- Identify the basic needs of all living things
- Conduct research about a dinosaur of their choice that was once found in the TRUGG
- Reflect on the loss of basic needs and the impact this had on the long term viability of the dinosaurs (and other species, including humans)

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

- Computer and digital projector
- *Five Basic Needs/Dinosaur Tracks*
- *Dinosaurs of the TRUGG* Slideshow and Teacher Notes
- *TRUGG Dinosaur Inquiry Report* Student Handout
- Access to the Internet (incl. www.tumblerridgegeopark.ca) and other resources to support student research

Teacher Prep

- Print *Five Basic Needs/Dinosaur Tracks* and photocopy several copies of the *Dinosaur Tracks*. Cut the tracks out and place around the classroom making a trail. Cut out the *Five Basic Needs* and place them beside some of the dinosaur footprints.
- Review the Tumbler Ridge UNESCO Global Geopark (TRUGG) website (www.tumblerridgegeopark.ca) to become familiar with the Geopark and its former dinosaur inhabitants
- Review the *TRUGG Dinosaurs, Plants and Invertebrates List*
- Review the *Dinosaurs of the TRUGG Slideshow* and Teacher Notes.

Background Information

Tumbler Ridge UNESCO Geopark and its Dinosaur Inhabitants

“Two local children, Mark Turner and Daniel Helm, correctly identified a dinosaur trackway just below Tumbler Ridge on the banks of Flatbed Creek in 2000. This was the catalyst for an explosion of discoveries in creeks and canyons, in the alpine, at industrial sites, and at coal mines. Dinosaurs found these terrestrial and coastal shoreline conditions attractive, and abundant evidence has accumulated for their presence. Within the Cretaceous rocks in the area, there are nine terrestrial (non-marine) formations. Dinosaur footprints or bones have been described from each of these, spanning almost sixty million years. There are intriguing changes in the dinosaur fauna over this time period, using evidence from these tracks and bones” (from www.tumblerridgegeopark.ca).

There were many dinosaurs and other discoveries made in the Tumbler Ridge UNESCO Geopark. Some of the bones discovered were from the following dinosaurs:

- Tyrannosaurid
- Dromaeosaurs
- Troodontids
- Hadrosaur
- Champsosaur

Fossils with abundant plant life and invertebrates were found as well, including:

- Crustaceans
- Oysters
- Inoceramids
- Sea Stars

This lesson also explores the basic needs of all living things, including dinosaurs. Students should have some background knowledge of these basic needs, including:

- 1.) Oxygen/Air

- 2.] Sunlight/Appropriate Temperature
- 3.] Food
- 4.] Shelter
- 5.] Water

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

Encourage students to think critically about the basic needs of living things and how they are also critical to the long term survival of species on Earth.

Supporting Student Inquiry

Students will be able to choose a dinosaur of interest and explore websites or books pertaining to that dinosaur/invertebrate/plant. A discussion about how to responsibly explore websites for research purposes might be needed. You may also need to model how to conduct an effective online search.

If students are unsure of which dinosaur to research, you can suggest exploring a few different ones and then choosing the one that most interests them.

It might be a good idea for you to explore a mini lesson on plagiarism and developing a bibliography. You may wish to use a book or website as an example and develop a bibliography as a class to model this process.

Students can begin their research using the Tumbler Ridge UNESCO Global Geopark (TRUGG) website [at www.tumblerridgegeopark.ca]. Once they have exhausted this website, they can use books from the library or start their online search.

Lesson Activities

Introduction/Hook:

1. Students will walk into the classroom and find dinosaur footprints all over the floor. Alongside certain dinosaur footprints (five prints chosen at random), the teacher will have placed one of the five basic needs of living things next to the track [see *Dinosaur Tracks* and *Five Basic Needs*].
2. Ask students to walk around the classroom, gently stepping beside the dinosaur tracks and discussing what they think the pictures might mean. If you completed Lesson 1, students should have a good idea that these are the basic needs of living things.
3. As a class, have a discussion about the basic needs for living things. Review each one and briefly discuss how it applied to dinosaurs long ago.

Activity 1:

1. Project the Tumbler Ridge UNESCO Geopark website (www.tumblerridgegeopark.ca) on screen and, under the Tab 'LEARN',

click on 'GEOPARK PALAEOLOGY.' Read through the intro section with the class that describes how two young boys found a dinosaur print while exploring one day. Highlight the many incredible photos shown in this section of the TRUGG website.

2. Have a class discussion about their thoughts after viewing the TRUGG website. Discussion topics can include questions like:
 - What emotions did you have after witnessing dinosaur tracks found in the very region (or province) you live in?
 - Is there a dinosaur, plant or invertebrate in the Tumbler Ridge UNESCO Global Geopark (TRUGG) that stood out to you or peaked your interest? Which one? Why?
3. Present the *Dinosaurs of the TRUGG* Slideshow, using the Teacher Notes. Review the *TRUGG Dinosaurs, Plants and Invertebrates* list in the slideshow with the class. Ask students to identify a species that interests them for further research.

Activity 2:

1. Distribute the *TRUGG Dinosaur Inquiry Report* Student Handout and review it with students. Ask students to write the name of their topic (dinosaur chosen from the list) in the space provided.
2. Provide Internet and/or library access for students to conduct their research and complete their Inquiry Report. As they find information they are looking for, ask students to list the sources of their information on the last page of the handout, under Bibliography.

Closure:

1. Have students share and discuss their findings with a partner.
2. Ask students 'What would happen to your species today if they did not have all of its basic needs met?' Help students make the connection to humans and think critically how similar we may be to dinosaurs of the past.

Assessment/Evaluation

- Observe the introductory activity and assess student's ability to identify the basic needs of living things.
- Review and assess the *TRUGG Dinosaur Inquiry Report* Student Handout.

Extensions

- Students can display their inquiry findings, five at a time (five students display their report on their desk, while the rest of the students do a gallery walk and look through their peers work). Once finished, have another five set up their reports and continue the process until all students have shared their findings.
- Once students have completed their inquiry report, invite students to investigate ideas that palaeontologists have regarding the extinction of dinosaurs on Earth.