

Why Did the Deer Cross the Road?

<p>Resources used and possible considerations</p>	<p>Keeper’s of the Earth- Michael J. Caduto & Joseph Bruchac; Using the Story <i>Awí Usdi, the Little Deer</i></p> <p>Other possible resources: ARC solutions https://arc-solutions.org/ Miistakis Institute https://www.rockies.ca/ Assembly of First Nations http://www.afn.ca/honoring-earth/ MSES https://mSES.ca/associates/ Blackfoot Crossing http://www.blackfootcrossing.ca/</p> <p>Considerations: The authors of the book are from the United States; therefore, some awareness and understanding of potential differences in language and land context is important for teachers.</p>
<p>Author/creator and/or literature background</p>	<p>Artist(s):</p> <p>Michael J. Caduto is an author, storyteller, ecologist, and educator of Italian descent. Over 25 years, he has collaborated with many Indigenous people, drawing his work from science, earth stewardship, and cultural diversity (Caduto, 1988)</p> <p>Joseph Bruchac is an Abenaki poet, storyteller, and author. In this environmental book that teaches children about stewardship, Joseph’s lyrical story retellings pair well with Caduto’s related activities (Bruchac, 1988).</p>
<p>UPE course connections (not exhaustive)</p>	<p>Educ 460- Specialization I: Through engaging in this project as a lesson plan example or by doing this project themselves, pre-service teachers will gain an understanding of the Alberta Program of Studies for Science; developing disciplinary ways of knowing, being, and doing, and designing for deep understanding of learners.</p> <p>Educ 535- Specialization II: Through engaging in this project as a lesson plan example or by doing this project themselves, pre-service teachers will gain an understanding of the Alberta Program of Studies for Science; developing disciplinary ways of knowing, being, and doing, and designing for deep understanding of learners.</p>

	<p>Educ 530- Indigenous Education: The use of the book, <i>Keeper's of the Earth</i> and the story, <i>Awi Usdi, the Little Deer</i>, as an entry point to the project is an excellent example for pre-service teachers of material to help students learn about Indigenous Ways of Knowing. The project highlights the importance and relevance of Indigenous literature content to learning in all grade levels.</p>
<p>K-12 connection</p>	<p>-Targeted grades: 7</p> <p>-Science:</p> <p>Structures & Forces</p> <p>Students will be able to:</p> <ol style="list-style-type: none"> 1. Describe and interpret different types of structures encountered in everyday objects; interpret examples of variation in the design of structures that share a common function, and evaluate the effectiveness of the designs 2. Investigate and analyze forces within structures, and forces applied to them; identify tension, compression, shearing and bending forces within a structure; and describe how these forces can cause the structure to fail (e.g., identify tensile forces that cause lengthening and possible snapping of a member; identify bending forces that could lead to breakage); analyze a design, and identify properties of materials that are important to individual parts of the structure 3. Investigate and analyze the properties of materials used in structures; compare structural properties of different materials, including natural materials and synthetics 4. Demonstrate and describe processes used in developing, evaluating and improving structures that will meet human needs with a margin of safety; identify environmental factors that may affect the stability and safety of a structure, and describe how these factors are taken into account (e.g., recognize that snow load, wind load and soil characteristics need to be taken into account)

	<p>Interactions & Ecosystems</p> <p>Students will be able to:</p> <ol style="list-style-type: none"> 1. Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions; describe examples of interaction and interdependency within an ecosystem (e.g., identify examples of dependency between species, and describe adaptations involved; identify changing relationships between humans and their environments, over time and in different cultures—as, for example, in Indigenous cultures); identify examples of human impacts on ecosystems, and investigate and analyze the link between these impacts and the human wants and needs that give rise to them (e.g., identify impacts of the use of plants and animals as sources of food, fibre and other materials; identify potential impacts of waste products on environments); analyze personal and public decisions that involve consideration of environmental impacts, and identify needs for scientific knowledge that can inform those decisions. 2. Monitor a local environment, and assess the impacts of environmental factors on the growth, health and reproduction of organisms in that environment; investigate a variety of habitats, and describe and interpret distribution patterns of living things found in those habitats (e.g., describe and compare two areas within the school grounds—a relatively undisturbed site and a site that has been affected by heavy use <p>-Cross curricular competencies: critical thinking; problem solving; managing information; creativity & innovation; communication; collaboration; personal growth & well-being.</p>
<p>Materials</p>	<p>-The book, Keeper’s of the Earth- Michael J. Caduto & Joseph Bruchac</p> <p>-recyclables for student projects, i.e. cardboard, wood etc.</p> <p>-glue</p>

	<p>-scissors</p> <p>-journals/portfolios to document learning</p>
<p>Rationale</p>	<p>Big idea: A project-based learning experience using the story <i>Awi Usdi, the Little Deer</i> as the entry point. The essential question for this project is: “What makes a good wildlife crossing?”</p> <p>Purpose: Students will explore and engage with ecological concepts such as stewardship and develop an understanding of the importance of the environment and the act of stewardship and wildlife through the story <i>Awi Usdi, the Little Deer</i> while contemplating their own local wildlife and environment. In order to answer the essential question, students will learn about wildlife and their environments, how wildlife is impacted by humans, what things wildlife need to survive, and how humans can and do care for wildlife and our environments. Students will ask themselves questions about what ways we care for animals; what animals need; what the words endangered and extinction mean; how humans impact wildlife; what are our responsibilities in caring for the land and wildlife; what are some local issues that wildlife face etc. We will discuss these concepts in relation to the Indigenous perspectives of this story and the support of other local resources. Students will develop an understanding of place-based knowledge as they explore and relate these topics to the local environment and wildlife. They will discuss ways in which we might help wildlife with issues caused by humans, and students will ultimately design and create their own wildlife crossing models to help wildlife cross the highway east of Canmore safely.</p>
<p>Lesson/activities</p>	<p>1.</p> <p>-Introduce the Author’s background and the background information of the book.</p> <p>-Read the story, <i>Awi Usdi, the Little Deer</i>. Use some of the guiding questions provided in the book to facilitate discussion about the story and about the ways in which humans and wildlife co-exist.</p>

Discuss ways in which different groups of human beings have different views of wildlife, and what it means to co-exist with them.

-Discuss stewardship of wild animals, and concepts of endangered and threatened species. Discuss how habitat management and improvement are ways in which we can care for wild animals around us. Discuss ways in which Indigenous cultures have and do live harmoniously with the land and wildlife.

*This could be an opportunity to visit Blackfoot Crossing interpretive center to learn more about Treaty 7 land and Blackfoot culture. The building itself is an excellent example of a meaningful structure built to be harmonious with the land and not just to conquer it.

-Have students do a Think, Pair, Share, on some issues that wildlife face in your local area i.e. they get hit by cars on the highway etc.

-Write these ideas down on a mind map and have students do a KWL chart about these ideas.

2.

-Provide students with some news articles/videos about wildlife on the highways near Calgary and about the wildlife overpasses in Banff National Park. You could use this video:

<https://youtu.be/ND0D3bVbM7Y>

-Learn about wildlife overpasses [student led research, guest expert presentations etc.]

- analyze and discuss the structural elements of various wildlife overpasses
- consider the ecosystem around Canmore and discuss wildlife connectivity and the relationship between humans and their environments

-Cocreate a rubric with the students based on what they discover makes a good wildlife crossing. Ask them to brainstorm other important considerations for their projects.

3.

	<p>-Have students design and build models of their own wildlife overpasses.</p> <p>-Ask students to choose how they want to present their learning in the final showcase i.e. perhaps they will create a website to go along with their wildlife overpass model.</p>

Supporting Sources (APA):

ARC solutions (<https://arc-solutions.org/>)

Assembly of First Nations (<http://www.afn.ca/honoring-earth/>)

Blackfoot Crossing (<http://www.blackfootcrossing.ca/>)

Caduto, M., & Bruchac, J. (1988). *Keeper's of the Earth: Native American Stories and Environmental Activities for Children*. Fulcrum Publishing.

Miistakis Institute (<https://www.rockies.ca/>)

MSES (<https://mSES.ca/associates/>)

Vox. (2017, July 3). *Wildlife crossings stop roadkill. Why aren't there more?* [video file]. Retrieved from <https://youtu.be/ND0D3bVbM7Y>