

Title: *A Walk on the Shoreline and UPE Secondary Science*

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**Marissa:** I am a recent Werklund Graduate with an Undergraduate in Kinesiology majoring in Pedagogy. I have a passion for movement education as well as international teaching and learning experiences. I have taught Physical Education and Health in Antigua West Indies, as well as taught and observed education in Japan. I believe that a classroom is a diverse group of individuals with different experiences, abilities, skills and backgrounds and addressing the needs of every student is my goal in education.

**Laura:** I am a 2020 Werklund School of Education graduate with an Undergraduate and Graduate degree in Geoscience. I am passionate about providing students with hands-on, memorable learning experiences where they understand why they are learning what they are being taught. I believe in incorporating student voice every step of the way and strive to support the learning needs as well as the personal needs of every student in my classroom.

Resources used and possible concerns	<p>Resource:</p> <ul style="list-style-type: none"> <li>- Picture Book: <i>A Walk on the Shoreline</i></li> </ul>
Author/creator and/or literature background	<p>Rebecca Hainnu</p> <ul style="list-style-type: none"> <li>- Is an Indigenous Canadian, she is Inuit.</li> <li>- She is also the author of <i>The Spirit of the Sea</i>.</li> <li>- Her book <i>A Walk on the Tundra</i>, co-authored with Anna Ziegler, was a finalist for the 2013 Canadian Children’s Literature Round Table Information Book Award, and was among the 2012 “Best Books for Kids and Teens,” as selected by the Canadian Children’s Book Centre.</li> </ul> <p>Qin Leng</p> <ul style="list-style-type: none"> <li>- Born in Shanghai and lived in France and Montreal. She now lives and works as a designer and illustrator in Toronto.</li> <li>- She graduated from the Mel Hoppenheim School of Cinema and has received many awards for her animated short films and artwork</li> <li>- She has illustrated numerous picture books for publishers in Canada, the United States, and South Korea.</li> </ul>
UPE course	EDUC 460 and 535: Specialization I & II

<p>connections (not exhaustive)</p>	<ul style="list-style-type: none"> <li>- This lesson ties directly to the Science specialization courses and is meant to be taught within that course in the secondary stream. It takes on an Indigenous perspective when considering ecosystems of plants and animals, and asks students to consider the shoreline through this lens. In the Science specialization, providing this lesson as a discussion topic would provide pre-service teachers with a concrete example as to how they can weave Indigenous ways of knowing into the science curriculum for secondary education. They are able to see that using a picture book is an easy way to consider curriculum through new perspectives and through multiple lenses and to meet different TQS criteria for any age group of students.</li> </ul> <p>EDUC 450: Diversity in Learning</p> <ul style="list-style-type: none"> <li>- This lesson supports the diversity course as it provides an example of how different perspectives can be introduced to a curricular outcome. By using this book, this lesson demonstrates how Indigenous ways of knowing can be incorporated into the Alberta curriculum. This lesson also allows pre-service teachers to see that picture books can be used at any grade level as an entry into the curricular subject matter through diverse perspectives.</li> </ul>
<p>K-12 content that pre-service teachers will be connecting with</p>	<ul style="list-style-type: none"> <li>- Target age range: High School Biology 20</li> <li>- Related curriculum: <ul style="list-style-type: none"> <li>- Biology 20 Unit B: Ecosystems and Population Change <ul style="list-style-type: none"> <li>- <b>General Outcome 1:</b> Students will explain that the biosphere is composed of ecosystems, each with distinctive biotic and abiotic characteristics <ul style="list-style-type: none"> <li>- <b>Specific Outcomes</b></li> <li>- 20–B1.1k: define species, population, community and ecosystem and explain the interrelationships among them</li> <li>- 20–B1.2k: explain how terrestrial and aquatic ecosystems support a diversity of organisms through a variety of habitats and niches;</li> <li>- 20–B1.3k: identify biotic and abiotic characteristics and explain their influence in an aquatic and a terrestrial ecosystem in the local region</li> </ul> </li> </ul> </li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>- 20–B1.4k: explain how limiting factors influence organism distribution and range</li> <li>- 20–B1.1sts: explain how science and technology have both intended and unintended consequences for humans and the environment</li> </ul>
Materials	<ul style="list-style-type: none"> <li>- The Picture Book, <i>A Walk on the Shoreline</i></li> <li>- Access to internet/computer, textbook</li> <li>- Chart paper/board, markers</li> <li>- Paper, pencil, pencil crayons, markers</li> </ul>
Rationale	<p>Big Idea:</p> <ul style="list-style-type: none"> <li>- In this lesson for EDUC 460 or 535 (Science), secondary focus pre-service teachers will participate in the simulation of a Biology 20 lesson that they could utilize in their future classrooms. The pre-service teachers will read <i>A Walk on the Shoreline</i> and research the plants and animals mentioned throughout the book. They will then add to the story by incorporating scientific facts and terminology and will consider the importance of their plant/animal to Indigenous cultures.</li> </ul> <p>Purpose:</p> <ul style="list-style-type: none"> <li>- The purpose of this lesson is to add an element of practical application to the theoretical coursework in the Werklund School of Education. By having pre-service teachers directly engage with this Indigenous resource, they are given an opportunity to experience and practice the use of a picture book for secondary classes. Also, by showing them this resource and working with them to weave an Indigenous resource into the Alberta curriculum, pre-service teachers should feel more comfortable with meeting the TQS requirements and incorporating Indigenous resources into their everyday teaching.</li> </ul>
Lesson/activities	<ul style="list-style-type: none"> <li>- Explain that you are going to simulate the use of a picture book for a high school Biology 20 class. The unit you would have just covered is, <i>Ecosystems and Population Change</i>.</li> <li>- Read aloud the story, <i>A Walk on the Shoreline</i>, or provide copies to small groups and ask them to read</li> </ul>

	<p>(10 Minutes).</p> <ul style="list-style-type: none"> <li>- Have the class brainstorm the plants and animals that are mentioned within this book, record on the board or chart paper, the list could include: (Starfish, Clams, Algae, Char, Urchin, Foxtail, Sculpin, Seaweed)</li> <li>- Tell the pre-service teachers to form small groups (2-3), and pick one plant or animal from the list they have created from the book (each group should choose a different topic).</li> <li>- Pre-service teachers will research this plant or animal, including details about the ecosystem, (biotic and abiotic characteristics and their influence, limiting factors, and human impact to the ecosystem) and they will use the following questions to guide them: <ul style="list-style-type: none"> <li>a. What are some of the resources in this ecosystem? Explain.</li> <li>b. Which of these resources are renewable?</li> <li>c. What are some factors that affect the ecosystem?</li> <li>d. Explain how each factor you identified in Part(c) affects the ecosystems</li> <li>e. Describe the abiotic and biotic characteristics and their influence</li> <li>f. Is the ecosystem sustainable? If you answer no, identify the factor(s) that would prevent the ecosystem from being sustainable.</li> </ul> </li> <li>- Once they have done their research, they will re-write the section of the story that their plant or animal appears in while incorporating their research to increase the scientific focus.</li> <li>- Pre-service teachers will also research the importance of their plant/animal in Indigenous cultures. The class will reconvene and share what they learned about their plant/animal and its importance. Pre-service teachers should leave this lesson understanding that it is possible to incorporate picture books into any grade level and recognize that picture books are an excellent way to incorporate Indigenous ways of knowing into the science curriculum.</li> </ul>

Supporting Sources (APA):

Alberta Education. (2014). *Biology 20-30: Program of Studies*. Retrieved from

[https://education.alberta.ca/media/3069386/pos\\_bio\\_20\\_30.pdf](https://education.alberta.ca/media/3069386/pos_bio_20_30.pdf)

Strong Nations. (n.d.). *Kids Books: A Walk on the Shoreline*. Retrieved from

[https://www.strongnations.com/store/item\\_display.php?i=5788](https://www.strongnations.com/store/item_display.php?i=5788)