



UBC
Botanical
Garden

Educational
Resource
For Teachers

Native, Non-native, and Invasive Species of BC: Lesson Plan for Grade 3

2024

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RESOURCE OVERVIEW**Lesson Plan**

Grade 3 – Science

Angelina Shi

June 27th, 2024**Biodiversity:
Native, Non-native, and Invasive Species of BC****Overview**

This interactive lesson and its associated follow-up activities are designed to provide students with hands-on learning in the natural world along with an immersive plant experience at the UBC Botanical Garden. The lesson intentionally integrates the big ideas, learning standards, and core competencies outlined in the British Columbia (BC) Curriculum for Grade 3 Science and Social Studies. Before, throughout, and after the garden visit, students will acquire plant knowledge through hands-on activities, class discussions, visual and written components, and outdoor education to observe the plants in person. Once returned to the classroom from the garden tour, students will learn and be assessed about the Traditional uses of native plants in BC. Students will complete a class project of a native plant guide where they each get to select a plant that they want to explore. All the activities in the lesson plan align with UN Sustainable Development Goal (SDG) 15 - [Life on land](#).

Core Competencies*Communication:*

- Students will communicate their understanding of native, non-native, and invasive species and their Traditional uses through small group and whole class discussions as well as visual and written responses.

*Thinking:***Curricular Competencies**

Students will be able to:

Questioning and predicting:

1. Demonstrate curiosity about the natural world
2. Make simple predictions based on prior knowledge

Planning and conducting:

3. Make observations about living things in their local environment

- Students will engage in inquiry where they identify and investigate questions.
- Students will think critically and creatively to develop ideas individually or with others.

Personal and Social:

- Students will engage in self-reflection and take ownership of their choices and actions.
- Students will explore ways to contribute to the well-being of their community.

Processing and analyzing data and information:

4. Experience and interpret the local environment

Evaluating:

5. Reflect and compare their plant observations

Applying and innovating:

6. Transfer and apply learning to new situations

Communicating:

7. Represent and communicate ideas in a variety of ways, such as drawings, oral and written language

Big Ideas

Living things are diverse, can be grouped, and can interact in their ecosystems.

Content

Students will understand:

1. Biodiversity in the local environment
2. Characteristics of native, non-native and invasive species
3. Traditional uses of native plants

Objectives

- Students will be able to explain and compare the difference between native, non-native, and invasive species of BC.
- Students will demonstrate an understanding of the different types of species.
- Students will be able to identify native plants of BC and communicate their Traditional usages.

Cross-curricular + Trans-disciplinary Connections and Critical Questions

Social Studies and Geography:

Big Idea: Learning about Indigenous peoples nurtures multicultural awareness and respect for diversity.

Content: Relationship between humans and their environment and reshaping of the land for resource exploration and development.

1. Examine the geographical distribution of native, non-native, and invasive species in BC and other regions in the world. Discuss how the geography of non-native and invasive species affects the native plants and the local region.
2. Reflect on how local Indigenous Peoples use native plants of BC and how their cultural practices shaped the medicinal use of plants.

Equity and Diversity

To ensure equity and diversity, this resource can be modified in multiple formats or other languages to accommodate diverse learning needs. The lesson plan and follow-up activity are flexible and allow students to focus on their interests and cultural backgrounds. Encourage students to share their insights and understandings, promoting respect for people of diverse perspectives and knowledge students bring to the subject. If a visit to the UBC Botanical Garden is not possible, an alternative natural space or school garden will also allow students to spot and learn about the native plants of BC.

First Peoples' Principles of Learning

- Learning is holistic, reflexive, reflective, experiential, and relational (focused on connectedness, reciprocal relationships, and a sense of place).
- Learning involves recognizing the consequences of one's action.
- Learning involves patience and time.

LESSON PLAN**Grade 3 - Science**

Angelina Shi

June 27th, 2024**Biodiversity:
Native, Non-native, and Invasive Species****Materials:**

- Video:
<https://www.youtube.com/watch?v=W4Ds8aFh8hM>
- Mini whiteboards or flipchart paper
- Whiteboard and markers
- Regional Native Plant ID Cards by NatureKidsBC (printed or laminated):
https://eadn-wc02-5494031.nxedge.io/wp-content/uploads/2022/09/Regional-Native-Plants_ID-cards.pdf
- Invasive Species Council of BC teaching cards (printed or laminated):
<https://bcinvasives.ca/for-youth/for-educators/teaching-cards/>
- Native Plants worksheet (last page)

Duration:

1. One 60-minute period or two 30-minute periods (pre-trip)
2. Garden visit and activity
3. One 40-minute period (post-trip)

Modification:

A field trip visit to the UBC Botanical Garden is not necessary, alternatively, an open outdoor space with access to plants and nature will work.

Modification/Extension:

- Pacific Northwest Plant Knowledge Cards by Strong Nations:
<https://www.strongnations.com/store/7484/pacific-northwest-plant-knowledge-cards>
- Paper, clipboards, and art supplies

Introduction + Minds On (15 minutes)

1. *Pre-assessment:* Provide mini-whiteboards or flipchart paper for small groups of students to engage in a mind map, brainstorming what they think native, non-native, and invasive species are and examples of the plants.
 2. *Whole class discussion:* students will show their mind map and share their ideas and thoughts on plants.
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Lesson (30 minutes)

3. Explain and write on the whiteboard what native, non-native, and invasive species are.
 - **Native species:** species that are naturally found in your region.
 - **Non-native species:** species that do not occur naturally in an area but are introduced as a result of deliberate or accidental human activities. They have no threat to the survival of others in the ecosystem.
 - **Invasive species:** species that are not native to an area and cause great harm to the new area.
 4. Watch the video on invasive species:
<https://www.youtube.com/watch?v=W4Ds8aFh8hM>
 5. *Discuss the video:* How are invasive species different from non-native species? What are some ways invasive species affecting our local environment? How can we reduce invasive species in BC?
 6. Giving Regional Native Plant ID cards to students to read. Students can draw a picture(s) of a plant to bring to the garden visit for a scavenger hunt activity. (*Modification/extension:* using the Pacific Northwest Plant Knowledge Cards)
 7. Showing the invasive plants teaching cards to students for a Think-Pair-Share and discussion.
 8. Using a world map/inflatable globe, students will spot where each plant is distributed and identify whether it is native, non-native, or invasive.
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Debrief + Consolidation (15 minutes)

9. *Exit slip questions (Students can write answers on a small piece of paper)*
 - What are the differences between native, non-native, and invasive species?
 - What are some examples of native plants in BC?
 - What are some takeaways from today's class? Students can write answers on a small piece of paper.
 10. Introduce the visit to the UBC Botanical Garden and set expectations for the tour. Using the cards, show students pictures of plants to identify during the tour.
 11. *Extension activity (optional):* make a Know/Wonder/Learn chart using the whiteboard or flipchart paper as a class, focusing on the types of questions to ask the Garden Guides in the 'What I Wonder' section.
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Garden Visit Activities (20 minutes)

Options:

1. *Geography activity:* Use a world map or inflated globe to show where the plant is distributed and where it came from, e.g. the Asian Garden. Ask if anyone has been to countries in Asia and the language(s) they speak or use an Earth squishy ball to pass around in a sharing circle.
2. *Art activity:* Have students sit in an open space in the Garden and give each student a piece of paper and a clipboard to draw their plant observations. Art materials needed. The teacher can scaffold scientific drawings of plants and label parts of the plant.
3. Scavenger hunt using the Garden Guides' plant cards and pictures the students drew during class.

Post-Trip Activity (40 minutes)

Continue teaching about BC's native plants and their Indigenous uses (shown on cards), such as using the Western Red Cedar for bentwood boxes and totem poles. Each student will create a page for a co-created class 'Native Plants Guide'. Have students pick a native plant of BC from the deck of cards from Regional Native Plant ID Cards or Pacific Northwest Plant Knowledge cards. The journal page can have drawings, notes of characteristics and Indigenous uses. An example template is attached at the end of this document.

Assessments

Students will be assessed by their teacher through the mind map, class discussions, Think-Pair-Share activities, and exit tickets on their ability to identify different types and Traditional uses of plants. The journal page will serve as a summative assessment at the end to see how effectively students communicate their newly acquired knowledge of distinct types of plants and biodiversity.

Additional resources:

Native plants of BC list:

<https://networkofnature.org/userContent/documents/Local%20Species%20Lists/Recommended%20Native%20Species%20List%20-%20BC%20Nature.pdf>

Invasive species of BC list:

<https://bcinvasives.ca/take-action/identify/>

Educational resources from NatureKidsBC:

<https://naturekidsbc.ca/educational-resources-2/>

The Land Knows Me: A Nature Walk Exploring Indigenous Wisdom by Leigh Joseph:

<https://www.strongnations.com/store/11381/the-land-knows-me-a-nature-walk-exploring-indigenous-wisdom>

The Puddle Garden by Jared Rosenbaum and Laura Rosenbaum:

<https://www.amazon.ca/Puddle-Garden/dp/0986356506>

Common non-native plants:

Cherry Blossoms from Japan

Sugar maple from Eastern North America

Common invasive species:

Butterfly bush from Asia

English ivy from Europe

Foxglove from Europe

Himalayan blackberry from Asia

Daphne from Asia

Name: _____

Native Plant:



Location: _____

Characteristics: _____

Traditional uses of the plant: _____
