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TEACH THE COLUMBIA
Comparing Different Maps of the Columbia River Basin

Guiding questions

How can we use maps to understand different perspectives about the basin? Who are some of the interested parties in the basin and what are their interests in the river?

How might different perspectives present the 'same' information in different ways?

What are some of the more complex meanings of a watershed?

Learning goals

Students will:

Consider more complex meanings of "watershed" including not just physical but also environmental, economic, social, and cultural aspects.

Practice identifying various sources of information and assessing their underlying perspectives.

Continue developing a sense of place as inhabitants of the Columbia River watershed by considering where they live within the larger area. Gain a stronger sense of the human geography of the river including major communities, dams, and other points of interest.

Materials

- Columbia River Maps
- Whiteboard/Large writing surface

Preparation

1. Print off all or some of the 13 provided maps in colour ink (note that "Biogeoclimatic Zones of the Basin with Projections" is a set of four connected maps). Consider how many maps are appropriate for your class size and choose your favourites.
2. Place maps in different stations around the room. All 4 climate maps (plus legend) belong at 1 station
3. Split the class into even groups for each station
4. Display watershed definitions and discussion questions

Instructions

Total time: 55-80 minutes

1. Introduce the lesson by asking students to review their understanding of "watershed" (Lesson 1-1 introduces the most basic physical definitions). If you did lesson 1-1, consider also asking students to think back on some of the watershed images they saw. 5 minutes
2. Give the students the three additional definitions of a watershed from Appendix 2. Ask students to comment on the differences between the more basic and more complex definitions. 10 minutes
3. Split students into groups and introduce them to however many stations of maps you have chosen to place around the classroom. Present the reflection/discussion questions (Appendix 3) to the students on the board to help their analysis and discussion at each station. 5 minutes.
4. Students rotate through the stations with 3-5 minutes (up to you) at each, analyzing and discussing the maps. If you've chosen 8 maps, this should take approx. 25-40 minutes.
5. Consider and/or debrief the reflection/discussion questions as a class. 10-20 minutes

Extensions

- Watch videos made from Wildsight for the "Know Your Watershed" curriculum about the definition of a watershed and the Columbia River Basin geography
- Columbia River Flyover video
- Students create their own map of the Columbia River Watershed, or their local watershed close to their community. Use the Know Your Watershed "flyover" list to examine your town's watershed

Curriculum links

Science 9

Social studies 10

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Environmental Science 11

Human Geography 12

Physical Geography 12

Appendix

1. Columbia River Maps
2. Watershed definitions:
   - Basic: An area of land in which all rain, melted snow and ice and small tributaries drain into a common body of water like a creek, river, lake or ocean.
   - More detailed: While primarily describing the geologic/geographic drainage patterns of water, a more holistic view incorporates all the biotic and abiotic communities and processes contained in the drainage basin; therefore a watershed may be referred to as the sum of the area, drainage patterns and environment of a given waterway or waterway segment.
   - More complex: "A basin, drainage, a watershed: all mean an area of land drained by a river and its tributaries to a common outlet, which may be a closed basin, a larger stream, a lake, a wetland, an estuary, or an ocean. A watershed includes all of the land, air, plants and animals within its boundaries. It includes mountains and deserts, cities and farms. It includes people, stories and traditions. Although a watershed's boundaries are carved by nature and not by social or political forces, a watershed's scope requires people with different perspectives, needs, and lifestyles to work together because of their common connection to the river and its life-giving water." - Discover a Watershed: Watershed Manager - Project WET Foundation
   - From the Indigenous Watersheds Initiative: "Watersheds hold profound significance for First Nations communities as they are integral to their cultural, spiritual, and physical well-being. These vital ecosystems, encompassing rivers, lakes, wetlands, and surrounding lands, play a pivotal role in sustaining traditional ways of life for many Indigenous peoples. Watersheds serve as sources of nourishment, providing fish, plants, and other resources crucial to traditional diets. Additionally, these environments often hold sacred value, connecting First Nations to their ancestors and spiritual practices. As caretakers of land and water, First Nations recognize the delicate balance within watersheds and the necessity of preserving them for future generations. The well-being of these ecosystems directly influences the overall health and resilience of the community, making the conservation and sustainable management of watersheds not merely an environmental and economic concern but also a fundamental aspect of cultural preservation for First Nations. The definition of watershed reflects that the water and the land are connected. First Nations people have always known this, and this is upheld by the worldview that water is life and that everything is connected."
3. Reflection/discussion Questions:

A. What is the main focus of each map? What features does it highlight? Which features are left out? Go through all the maps and reflect on them.

B. Discuss what a "stakeholder" is. Based on all the different map examples, who are some of the stakeholders within the Columbia River Basin? Make a list as a class. What sort of conflicts or collaboration do you anticipate happening?

The Columbia River flows across two countries, across dozens of Indigenous territories, and affects many communities. What challenges do you anticipate this may bring up in management of the river?

List of Maps

1. Columbia River Subbasins (source: Northwest Power and Conservation Council)
2. Columbia Basin Trust Region (source: Columbia Basin Trust)
3. Artistic Rendering of the Upper Columbia (source: courtesy of author, Eileen Delehanty Pearkes)
4. Pacific Northwest Reservoir System from US Federal Agencies (Source: https://en.wikipedia.org/wiki/File:Pacific_Northwest_River_System.png)
5. Indigenous communities and salmon habitat from the Columbia River Inter-Tribal Fish Commission (source: Columbia River Inter-Tribal Fish Commission)

6. Biogeoclimatic Zones of the Basin with Projections (source: courtesy Greg Utzig):
7. Basic Columbia River Basin Map (source: Creative Commons)
8. Columbia Basin Subway Style Map (source: Daniel P. Huffman)
9. Ktunaxa Traditional Territory (source: Ktunaxa Nation)
10. Shuswap Band Caretaker Responsibility Area Map (source: Impact Assessment Agency of Canada)
11. Syilx Okanagan Territory Map (source: Syilx Okanagan Nation)
12. Colville Confederated Tribes Sinixt Territory and Place Names Map (source: Sinixt Confederacy)
13. Autonomous Sinixt Land Declaration Map (source: Autonomous Sinixt)