wildsight

TEACH THE COLUMBIA

Columbia River Basin maps and geography

Guiding questions

What is the Columbia River Basin and where do we fit into it? How can we use maps to understand different perspectives about the basin? Who are the stakeholders in the basin and what are their interests in the river?

Learning goals

Consider the complex meaning of "watershed" including the physical, environmental and human elements

Develop a sense of place as an inhabitant of the Columbia River watershed

Understand and describe the geographical context of the Columbia River (headwaters, mouth, direction of flow, tributaries, transboundary nature, size of watershed)

Get a sense of the human geography of the river through history including the distribution of Indigenous communities, the creation of Canada and the United States through settlement (the "drawing of the line"), and the present day inhabitation of the Basin

Start to understand the different ways that humans and other life forms "use" the river and how these different uses can conflict with or enhance each other

Materials

- Columbia River Maps
- Large Columbia River Basin Map
- Whiteboard/Large writing surface
- Columbia River Flyover video

Preparation

1. Print off all 12 maps in colour ink
2. Place maps in 8 different stations around the room
3. All 4 climate maps (plus legend) belong at 1 station
4. Split the class into even groups for each station
5. Display watershed definitions and discussion q's

Instructions

Total time: 90 minutes

1. Introduce the lesson by asking students, "What is a watershed?" Give students time to pair and share with their classmates, and then brainstorm definitions by writing them down on the whiteboard for students to see. **10 minutes**
2. Give the students the three definitions of a watershed from Appendix 2 **5 minutes**
3. Ask the students if they know what watershed we are living in? Where does it start? Where does it end? Discuss for **5 minutes**
4. Introduce a large map of the Columbia River Basin, and have students try to figure out where we sit on the map. Point out the headwaters, mouth, direction of flow, and significant features to give the students a general sense of the scope of the basin **10 min**
5. Watch flyover of entire Basin **5 min**
6. Split students into groups and introduce them to the 8 stations of maps around the classroom. Present the discussion questions (appendix 3) to the students on the board to help their analysis and discussion at each station. Students will have 2 minutes at each map to analyze the map and discuss it with their group **5 minutes**
7. Students rotate through all 8 stations, analyzing and discussing the maps **20 minutes**
8. Debrief the discussion questions as a class **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
- Use Google maps satellite or Google Earth to explore your local community and examine your watershed features and geography
- 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
Social studies 11
Earth Science 11
Environmental Science 11
Human Geography 12
Physical Geography 12

Appendix

1. **Columbia River Maps**

2. Watershed definitions:

- 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.
- 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.
- "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*

Discussion Questions

1. 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.
2. 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?
3. 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. **Large Columbia River Basin Map** (source: Creative Commons)
8. **Columbia Basin Subway Style Map** (source: Daniel P. Huffman)