

Lesson 5

Columbia River Stakeholders

Disciplinary Core Ideas

Science

4-ESS3-1 – Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.

(Clarification Statement: Examples of renewable energy resources could include wind energy, water behind dams, and sunlight, non-renewable energy resources are fossil fuels and fissile materials. Examples of environmental effects could include loss of habitat due to dams, loss of habitat due to surface mining, and air pollution from burning of fossil fuels.)

ESE Standard 1 -- Ecological, Social and Economic Systems

Scientific and Engineering Practices

Engaging in argument from evidence

Crosscutting Concepts

Structure and function

Notes

Overview

In Investigation 4.1 and 4.2 students were introduced to the term “stakeholder”. They reviewed the *Stakeholders of the Columbia River* chart identifying both human and animal stakeholders. The remainder of the investigation focused on one animal stakeholder, salmon. Investigation 4.2 gives students the opportunity to consider additional stakeholders. As students’ view the second part of the DVD *Journey of the King* they are asked to observe for other human and non-human stakeholders. Students’ complete a two column table in their science notebook listing the stakeholders, and how they are dependent on the water of the Columbia River. Students’ also continue reading the *Voyage to the Pacific* to gain an understanding of Columbia River stakeholders of the past and present. The investigations in Lesson 4 help students recognize the importance of the water of the Columbia River watershed to the numerous stakeholders that find their home in the watershed. This investigation helps set the stage for Lesson 10 in which students’ are asked to answer the question, “who does the water belong to?”

- Students view the second half of the *Journey of the King* DVD. 5 minutes
- Students identify additional Columbia River stakeholders and how they are dependent on the water of the watershed.
- Students read to learn about the Columbia River and its importance to the stakeholders of the Columbia River watershed.

Student Learning Targets

I can learn about the stakeholders of the Columbia River through viewing DVD selections and reading to learn.

I can demonstrate my understanding of how stakeholders are dependent on the water of the Columbia River watershed by completing a two column table listing stakeholders and how they depend on the water of the Columbia River.

Teacher Background Information

In this investigation students will shift their attention from learning about salmon and Native Americans as initial stakeholders of the Columbia River to considering the multitude of other human and non-human stakeholders who depend on the water of the Columbia River watershed. As students view the second half of the DVD *Journey of the King* they will be made aware of how the water of the Columbia River is used for recreational boating and fishing, transporting goods, irrigation water for farming, power production, power to support industry, etc. The students may also note the many animal stakeholders present in the DVD selection.

For more information related to the many stakeholders of the river and how they are dependent on the watershed see the teacher background information listed in Lesson 1 with special emphasis on the sections entitled *Uses of the Columbia*, and *History*.

Materials

For each student

- 1 science notebook

For every two students

- 1 *Voyage to the Pacific* student reader

For the class

DVD player or Play from NCESD, Science, River of Power Folder; Videos are in each Lesson folder.

Video – *Journey of the King*

Academic Vocabulary

Human Stakeholders – The people who are dependent on the water of the Columbia River for a variety of uses.

Animal Stakeholders – The animals who are dependent on the water of the Columbia River for water, food, and shelter (habitat).

Irrigation – The watering of land by artificial means to foster plant growth.

Industry – A distinct group of productive or profit-making enterprises.

Recreation – Something people do to relax or have fun; activities done for enjoyment.

Product Transportation – The movement of produce or products from one place to another usually to be sold for profit.

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Preparation

1. Assign each student a partner to work with for the entire unit. The students will share one student book *Voyage to the Pacific*. The students reading ability should be considered as groups are determined.
2. Preview the video *Journey of the King* and make sure that a DVD player is available for use.
3. Have the *Stakeholders of the Columbia River* chart from Lesson 1 available to reference during the investigation.

Procedure

1. Display the *Stakeholders of the Columbia River* chart from Lesson 1 in a location that is easily seen by all students.
2. Introduce the student learning targets for Lesson 5 and check for understanding.
3. Ask students to open their science notebook and head the next clean page with the entry “Columbia River Stakeholders”. Students should be sure and date their entry.
4. Ask students to create a two column table and to head the left side of the table with the word “Stakeholder”, and the right column with the words “Water Uses”.
5. Inform students that in today’s investigation the class will view the second half of the DVD *Journey of the King*.
6. As students view the DVD they should fill in the left hand column of the table with any animal or human stakeholders that they observe. They will complete the right hand column at the conclusion of the DVD and during class discussion.

7. Show the second half of the DVD *Journey of the King*.

8. Upon completion of the DVD students should take a few minutes to add any additional stakeholders to the left side column of their table.

9. In groups of four students should take turns listing one of the stakeholders from their table. As each person shares their stakeholder the group should discuss how the specific stakeholder is dependent on the water of the Columbia River watershed and complete the right side column of their table.

Final Activities

1. Read *Voyage to the Pacific* part 2 “Paddle the Upper River”. Pp 5-6
2. Revisit the student learning targets for the investigation and have students record in their science notebook how they feel they did at attaining the learning targets.

Extension

(Social Studies)

Show the River of Power DVD *Sternwheelers on the Columbia* to help students gain a historical perspective on how stakeholders depended on the river for transportation of goods, timber, etc.

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