



Assessment Rubric

Module 2: Water Quality

Question 1: Identify three things in the photo that make this Alaska creek a healthy waterway.

Rubric Score	Description
3	Student identifies three plausible indicators of waterway health , such as cold temperature, whitewater mixing oxygen, clean water, no evidence of pollution, vegetation intact along the creek bank, etc.
2	Student identifies two plausible indicators of waterway health .
1	Student identifies one plausible indicator of waterway health .
0	Student does not identify any plausible indicators of waterway health OR student did not answer the question.

Question 2: Identify one way humans can impact the quality of the water in a waterway.

Rubric Score	Description
3	Student identifies one plausible way humans impact water quality.
2	
1	
0	Student does not identify one plausible way humans impact water quality OR student did not answer the question.



Question 3: Identify one way you and your family can help waterways have healthy water quality.

Rubric Score	Description
3	Student identifies one plausible way they can help waterways have healthy water quality.
2	
1	
0	Student does not identify one plausible way they can help waterways have healthy water quality OR student did not answer the question.

Question 4: Look at the picture below. Do you think the waterway has a high amount of dissolved oxygen or a low amount of dissolved oxygen? Explain your answer.

Rubric Score	Description
3	Student answer demonstrates a thorough understanding of dissolved oxygen (e.g., correctly reasons the waterway has a high amount of dissolved oxygen due to fast water movement (flow), evidence of whitewater mixing oxygen, and/or the presence of salmon, which require high levels of dissolved oxygen to survive).
2	Student answer demonstrates a basic understanding of dissolved oxygen.
1	Student answer demonstrates a minimal understanding of dissolved oxygen (e.g., answers “high amount of dissolved oxygen” without explanation).
0	Student incorrectly answers that the waterway has a low amount of dissolved oxygen OR student did not answer the question.



Question 5: Why is dissolved oxygen important in creeks, rivers, and other waterways?

Rubric Score	Description
3	Student answer demonstrates a thorough understanding of the importance of dissolved oxygen (e.g., salmon, other fish, and many aquatic organisms require adequate levels of dissolved oxygen to survive).
2	Student answer demonstrates a basic understanding of the importance of dissolved oxygen.
1	Student answer demonstrates a minimal understanding of the importance of dissolved oxygen.
0	Student answer demonstrates no understanding of the importance of dissolved oxygen OR student did not answer the question.

Brian visited the same location in the imaginary Cottonwood Creek for four years in July. He recorded what he found in the bar graph below. Use the bar graph to answer the following questions.

Question 6: What year had the warmest water temperature?

Rubric Score	Description
3	Student provides the correct answer (b: 2021)
2	
1	
0	Student provides the incorrect answer OR student did not answer the question.



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Question 7: In what year was the water temperature 60°F?

Rubric Score	Description
3	Student provides the correct answer (C: 2022)
2	
1	
0	Student provides the incorrect answer OR student did not answer the question.

Question 8: In the year 2021, Brian found a lot of dead salmon on the shore of the creek. According to the graph, what might have caused this?

Rubric Score	Description
3	Student answer demonstrates thorough understanding (e.g., explains that the water temperature was too high for salmon to survive and/or the high water temperature limited the amount of dissolved oxygen, which salmon need to survive.)
2	Student answer demonstrates basic understanding .
1	Student answer demonstrates minimal understanding .
0	Student answer demonstrates no understanding OR student did not answer the question.



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Question 9: Why is water quality important to people?

Rubric Score	Description
3	Student answer demonstrates a thorough understanding of the importance of water quality for human life.
2	Student answer demonstrates a basic understanding of the importance of water quality for human life.
1	Student answer demonstrates a minimal understanding of the importance of water quality for human life.
0	Student answer demonstrates no understanding of the importance of water quality for human life OR student did not answer the question.