

KEY

**Student Data Sheet for Mud Creek Case Study:
Chemical Measurement of Stream Health**

Results below will be highly variable since students are given actual water samples prepared or collected by their instructor.

1. pH

Upper Mud Creek: _____ Lower Mud Creek: _____ Mud Tributary: _____

2. Dissolved oxygen (mg/L)

Upper Mud Creek: _____ Lower Mud Creek: _____ Mud Tributary: _____

3. Total dissolved solids (mg/L)

Upper Mud Creek: _____ Lower Mud Creek: _____ Mud Tributary: _____

4. Turbidity (NTU)

Upper Mud Creek: _____ Lower Mud Creek: _____ Mud Tributary: _____

A. Interpret the class results.

1. Why does measuring pH provide information about stream health?

Organisms have specific pH ranges in which they can survive. Streams with particularly low or high pH will not be able to support a very diverse assemblage of organisms.

2. Why does measuring dissolved oxygen provide information about stream health?

Oxygen is required for cellular respiration, so if dissolved oxygen levels are relatively low, a limited number of organisms will be able to survive.

3. Why does measuring total dissolved solids provide information about stream health?

Dissolved solids, if present at high concentrations, can cause organisms to become dehydrated and can lead to algal blooms in conditions with relatively high N and P.

4. Why does measuring turbidity provide information about stream health?

Turbid waters absorb heat more readily, and warmer water can hold less water than cooler water. Also, in high turbidity conditions there is less light available for photosynthesis.

5. Based on these chemical measurements, how does stream health compare between the three Mud Creek sites?

Results will vary depending on the water samples provided.

6. What do these results tell us about the ability of Mud Creek to recover from urbanization?
Explain your answer.

Results will vary depending on the water samples provided. To answer this question, students should compare the water chemistry measurements at Lower Mud Creek to those at both Upper Mud Creek and Mud Tributary.