

Measuring Water Quality

1. Explain in your own words what conductivity can tell us about a water sample.

2. Form a starting hypothesis: Which water sample do you think has the highest conductivity? Explain your reasoning.

3. Measure the conductivity of the water samples using the instructions below.

Turn on the water quality probe with the ON/OFF button and hit the MODE button until the screen shows “ $\mu\text{s}/\text{cm}$.”

Stir the water sample and remove the cap on the end of the probe. Submerge the end of the probe underwater about 3 centimeters. Record the conductivity number displayed on the screen in next to the corresponding sample number below. Record the color shown on the screen of the probe in the Color Classification box.

Dip the probe in the cup of rinse water and gently pat the probe dry with a tissue being careful not to touch the sensitive metal pieces. Repeat for the remaining samples.

Turn off the probe by holding the ON/OFF button and replace the cap.

Sample Number	Conductivity ($\mu\text{s}/\text{cm}$)	Color Classification	Scenario & Reasoning
1			
2			
3			

Match the water samples above to the three scenarios below. Where do you think the sample could have come from based on their conductivity values? Explain your reasoning.

- A. A large, wide river near a small farm
- B. A lake in a protected national park
- C. A river that runs through a large, busy city

4. Was your hypothesis correct? Why or why not?

5. Explain how you would monitor the water quality of the stream shown below. Large buildings represent textile factories and small buildings represent homes. Design your own scientific study. Where would you sample? Are there any areas you would be particularly concerned about? Would you sample once or multiple times?



Image sources:

<https://www.istockphoto.com/vector/vector-seamless-border-with-river-top-view-gm1250062680-364477070>

<https://www.dreamstime.com/illustration/river-flow-sea-cartoon.html>