

# Lab Report Template

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**Project 4.3.5 Drink This**

## **Problem**

Does Indian Creek, Aquafina, the school drinking fountain, or Cedar Rapids have the highest level of quality?

## **Hypothesis**

The Aquafina bottled water will have the highest quality of water.

## **Materials**

- 100 ml of Indian Creek Water
- 100 ml of School Drinking Fountain Water
- 100 ml of Aquafina Water
- 100 ml of Cedar Rapids Water
- pH Sensor
- Dissolved Oxygen Sensor
- Turbidity Sensor
- Temperature Sensor
- Lab Quest 2
- 6 beakers
- Rinse Bottle
- Lab Tape
- Permanent Marker
- 100 ml of Buffer Solution

## **Procedures**

1. Pour 100 ml of Indian Creek water into a beaker. Label the beaker "Indian Creek" using the lab tape and permanent marker.
2. Do this with the other 3 samples, naming them "School Drinking Fountain", "Aquafina", or "Cedar Rapids".
3. Pour 100 ml of buffer solution into a separate beaker, labeling it "Buffer Solution".
4. Label the last beaker "Rinse Beaker".
5. Perform a pH test on the Indian Creek water, and record the data in Table 1.
6. Repeat step 5 with the other 3 samples.
7. Perform a turbidity test on the Indian Creek water, and record the data in Table 1.
8. Repeat step 7 with the other 3 samples.
9. Perform a dissolved oxygen test on the Indian Creek water, and record the data in Table 1.
10. Repeat step 9 with the other 3 samples.
11. Perform a temperature test on the Indian Creek water, and record the data in Table 1.
12. Repeat step 11 with the other 3 samples.
13. Determine the level of quality for each sample's test (pH, turbidity, etc), then average its levels of quality to determine its overall level of quality. Record the data in Table 1 for each sample.

## Data Collection

Table 1

Water Type	Tests Taken	pH	Turbidity	Dissolved Oxygen	Temperature	Average Level of Quality
Indian Creek		6.57	11.2	1 mg/liter	22.3	Unacceptable
Aquafina		7.8	8.7	1.1 mg/liter	21.4	Nearing Unacceptability
School Drinking Fountain		7.45	-9.8	1.1 mg/liter	18.6	Acceptable
Cedar Rapids		7.2	-12.2	1.2 mg/liter	22.1	Acceptable

## Analysis of Results

The data in Table 1 show that Cedar Rapids water has the highest level of quality. This is because the pH level drinking water should be at is between 6.5 and 8.5, and Cedar Rapids' level of pH was in between that. The preferred level of turbidity is less than 5, which Cedar Rapids also had. Dissolved oxygen should be high, and Cedar Rapids had the highest level of it. The best temperature of drinking water is based upon preference, and therefore is not important to whether or not the water is high quality. School drinking fountain water also has a high level of water quality, but Cedar Rapids had a higher level of dissolved oxygen so it is higher in quality.

## Conclusions

Based on the results, I can infer that Cedar Rapids water has a higher level of quality than Indian Creek, the school water fountain, and Aquafina. My prediction was disproven, because I thought Aquafina would have the best level of quality out of the 4 samples, but Cedar Rapids water did. Possible sources of error are the sensors may not have been working properly, the Lab Quest 2 may not have been working properly, and the numbers that pH, turbidity, dissolved oxygen, and temperature are supposed to be in-between may be inaccurate. Some questions that I have are why does Cedar Rapids have a higher quality than the other 3 water samples (what do they do with it/ put in it?), and what type of bottled water has the best level of quality?