Temperature Lab Protocol

Pre-lab questions (provide evidence to your conclusions):

1. Why is the temperature of water important?
2. What affects the temperatures of bodies of water
3. What happens to the volume of objects when they are heated up?
4. What should you wait for to happen before taking a temperature measurement?
5. What happens when your hold a bottle of water in your hand for a long time?

Pre-lab safety questions:

1. Should you ever eat things in the laboratory?
2. How does the answer to question one have anything to do with temperature probes?

Have a teacher check off your answers before you go on to the lab.

Laboratory procedure:

1. Get a laptop
2. Get a temperature probe
    a. Depending on which probe you get you may also need a USB adaptor
3. Connect the USB port to the computer
4. Load Logger Pro on the computer
5. Get a small plastic bottle
6. Pick a source of water you would like to measure the temperature of.
7. Make a prediction of what you think the temperature of the water will be
8. Create a table that looks like the one below on your sheet of paper

Temperature Locations:	Prediction of the temperature in Celsius:	Actual temperature in Celsius:	Difference in Temperatures:

9. Fill in the temperature location and prediction of temperature portion of the table
10. Go get your sample of water from your chosen location
    a. Bring it back as quickly as possible as to not warm it up
11. Fill in the actual temperature in Celsius portion of the table
12. Dump out the water into the sink
13. Do steps 6,7,9,10,11,12 two more times
14. Compute the difference between the actual and prediction temperatures and fill in the difference in temperatures portion of the chart

Conclusions (cite your sources):

1. How far apart were your predictions and your actual measurements (cite from your data)?
2. Was there much difference in temperature between different locations (cite from your data)?
3. What implications might be for the difference in temperature in the different locations (doesn't need citation)?

4. What are some fish that would like Jackson Creek's water temperature?
5. What fish might not do so well?
6. What are some causes for changes in river temperature?
7. What other living things does the temperature of water affect and how?
8. Is there any correlation you could draw between all the living things in the creek? Do they all seem like they adapted to particular conditions?