

Water Chemistry Directions

1. Open the cup.
2. Take everything out of the cup making sure not to lose anything and place everything on your table.

Turbidity: Turbidity is the measure of the relative clarity of water. Turbidity is caused by suspended matter mixing with the water. Turbidity is not color.

1. Remove the backing from the Secchi disc icon sticker.



2. Stick sticker on the inside bottom of the white cup. Position the sticker slightly off center

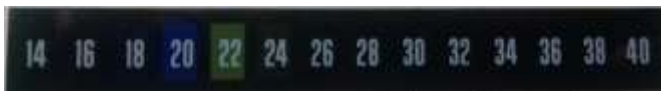


3. Fill the cup to the Fill Line with creek water

4. Hold the turbidity chart on the top edge of the jar. Looking down the cup, compare the appearance of the Secchi disk icon in the cup to the chart. Record the results on your data sheet in JTU (Jackson Turbidity Units).



Temperature: Aquatic animals are sensitive to changes in water temperature and require a certain temperature range to survive and thrive. If water temperature is outside the range for a long time, organisms can be stressed and die.



1. Remove the back of the thermometer sticker
2. Stick the thermometer sticker along the outside of the cup
3. Place the cup a few inches below the surface of the water. Hold there for one minute.
4. Remove the cup from the water and read the temperature (the number with the green background). Record the results on your data sheet in degrees Celsius.
5. Repeat the same process approximately 10 meters upstream and 10 meters downstream from your site.
6. Subtract the two temperatures to determine the change.



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Collecting water:

1. Open the cup.
2. Hold the cup near the bottom and plunge it below the water surface.
3. Hold the cup so the opening is facing up-stream (so the water is flowing into the cup)
4. Allow the water to flow into the cup for 30 seconds.
5. Cap the full cup while it is still submerged. Place the full capped cup on your table.

Dissolved Oxygen (DO): DO is important to the health of the aquatic ecosystem. Just as all land animals need oxygen to breathe so do the aquatic animals. Whenever water passes over rocks or has plants growing in it oxygen is added to the water. DO also depends on the temperature. Cold water holds more oxygen compared to warm water.

1. Submerge the small glass vial into the water sample. Carefully remove the vial from the water sample keeping the vial full to the top.
2. Drop two DO TesTabs into the vial. Water will overflow when the tablets are added (this is okay).
3. Screw the cap on the vial. More water will overflow as the cap is tightened. Make sure no bubbles are present in the sample (if there are let the educator know).
4. Mix by turning the vial over and over in your hand until you can no longer see any part of the tablet. This will take a few minutes.

5. Wait 5 more minutes for the color to develop.

6. Compare the color of the sample to the Dissolved Oxygen color chart. Record the result in ppm.

7. Using the temperature found earlier use the chart on the next page to determine the % saturation.



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pH: pH is a measurement of whether a liquid is acidic (ex. Orange juice) or basic (ex. Baking soda). The pH scale ranges from 0 (very acidic) to 14 (very basic), with 7 being neutral. Most aquatic animals prefer a range between 6.5 and 8.0.

1. Fill the plastic test tube to the 10mL line with the water sample.



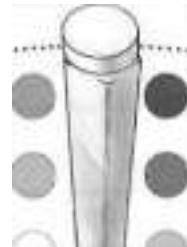
2. Add one pH Wide Range TesTab.



3. Cap and mix by turning the tube over and over in your hand until you can no longer see any large parts of the tablet. Small bits of material may be seen this is okay.



4. Compare the color of the sample to the pH color chart. Record the result.



Dissolved Oxygen, ppm			
	0 ppm	4 ppm	8 ppm
2	0	29	58
4	0	31	61
6	0	32	64
8	0	34	68
10	0	35	71
12	0	37	74
14	0	39	78
16	0	41	81
18	0	42	84
20	0	44	88
22	0	46	92
24	0	48	95
26	0	49	99
28	0	51	102
30	0	53	106