



WATER QUALITY INDOOR LAB

Materials: Get the following materials from your instructor:

- Safety goggles
- Water sample (prepared by instructor)
- Mini Secchi disk tube (share) and bucket (share)
- pH paper
- Chemette kit (share)
- Glass thermometer (share)

Directions:

1. Put on safety goggles and keep them on for the entire lab.
2. Test your water as directed by your instructor.
3. Insert the pH paper in the water and record your findings below.
4. Check your water for oxygen using the Chemette vials and record below.
5. Check your water for temperature using thermometer and record below.
6. Check your water clarity with the mini Secchi disk tube and record below.
7. We will not test for phosphate/nitrates.

YOUR TEAM'S WATER SAMPLE #: _____

Factor	Your Findings (data)	Analysis (acceptable/not acceptable)	
Turbidity (cm)			(10 pts) _____
Dissolved Oxygen (mg/L)			(10 pts) _____
pH			(10 pts) _____
Temperature (Celsius/Fahrenheit)			(10 pts) _____

Hint: Use the table on the previous page to determine whether your sample is acceptable or not.

When you are done, report your findings on the board in the front of the room.

Report your data on the board and record all other groups' data below.

(5 pts) _____

Record the data from your classmates' investigations:

Group/ Sample #	#1	#2	#3	#4	#5	#6
Turbidity						
DO						
Temp.						
pH						

Summary Questions:

1. Provided other factors were okay, why would you consider your water sample to be good or bad for aquatic life? Be prepared to discuss at the end of the lab.

(5 pts) _____

2. How did your water sample compare to others?

(5 pts) _____

TOTAL WATER QUALITY POINTS (55 pts) _____

WATER QUALITY RESOURCE TABLE

Factor	Indicates	Affected by	Effects on lake	Method	Acceptable Range
Turbidity	Water clarity	sediment, algae, tannins	Temperature, photosynthesis, clogs gills, spawning	Secchi disc	Clearer is better
Dissolved Oxygen	Oxygen available in water	Higher in cold water, wind, storms, shade, running water, springs	Respiration: breathing for fish, insects, bacteria	Chemettes	Greater than 5, but less than 15 mg/L
Temperature	Warm/cold	Air temperature, season, sun, wind, depth of lake	Algae growth increases, Dissolved oxygen decreases	Thermometer	35-65 F (most fish prefer)
pH	Acidity	Sediment, type of substrate and rock, pollution	Which species can live in that lake	pH paper	5-9 (7 is neutral)
Phosphates	Possible pollution	Fertilizer or animal waste	Increased plant/algae growth, killing fish	Lab test	< 0.1 mg/L
Nitrates	Possible pollution	Fertilizer, septic systems	Increased plant/algae growth, killing fish	Lab test	<1 mg/L

pH Color Codes

EFFECTS OF ACIDITY ON FISH SPECIES (Olszyk 1980)	
pH	Effects
6.5	Walleye spawning inhibited
5.8	Lake trout spawning inhibited
5.5	Smallmouth bass disappear
5.2	Walleye, burbot, lake trout disappear
5.0	Spawning inhibited in many fish
4.7	Northern pike, white sucker, brown bullhead, pumpkinseed, sunfish and rock bass disappear
4.5	Perch spawning inhibited
3.5	Perch disappear
3.0	Toxic to all fish



