Water quality parameters:

- pH
- temperature
- dissolved oxygen
- turbidity

WHAT?

HOW?

WHY?

pH:

Measures acidity (H^+ hydrogen)

or basicity (OH^- hydroxide)

1 ⟵ 5 ⟵ 7 ⟶ 8 (drinking! fish) ⟶ 14

High acidity: lots of H^+, few OH^-

Neutral ($H^+ = OH^-$)

Highly basic: lots of OH^-, few H^+

Both H^+ and OH^- are very chemically reactive

- Organisms are adapted to certain pH's
- pH can affect abiotic factors - rocks, sediment, leaves/stick

temperature:

Measures the energy of the vibrations that all molecules have

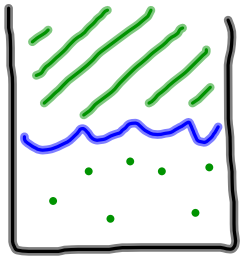
thermometer: 0 Celsius – freezing (32° F)

100 Celsius – boiling (212° F)

- Water with lower temperatures can hold more dissolved oxygen
- organisms are adapted to function well in a narrow range of temperatures

Dissolved Oxygen:

Measures how much O_2 gas is trapped in water



Sensor: 0 mg/L 4 mg/L - 11 mg/L 15 mg/L

Some organisms that live in water require DO to breathe (GILLS)

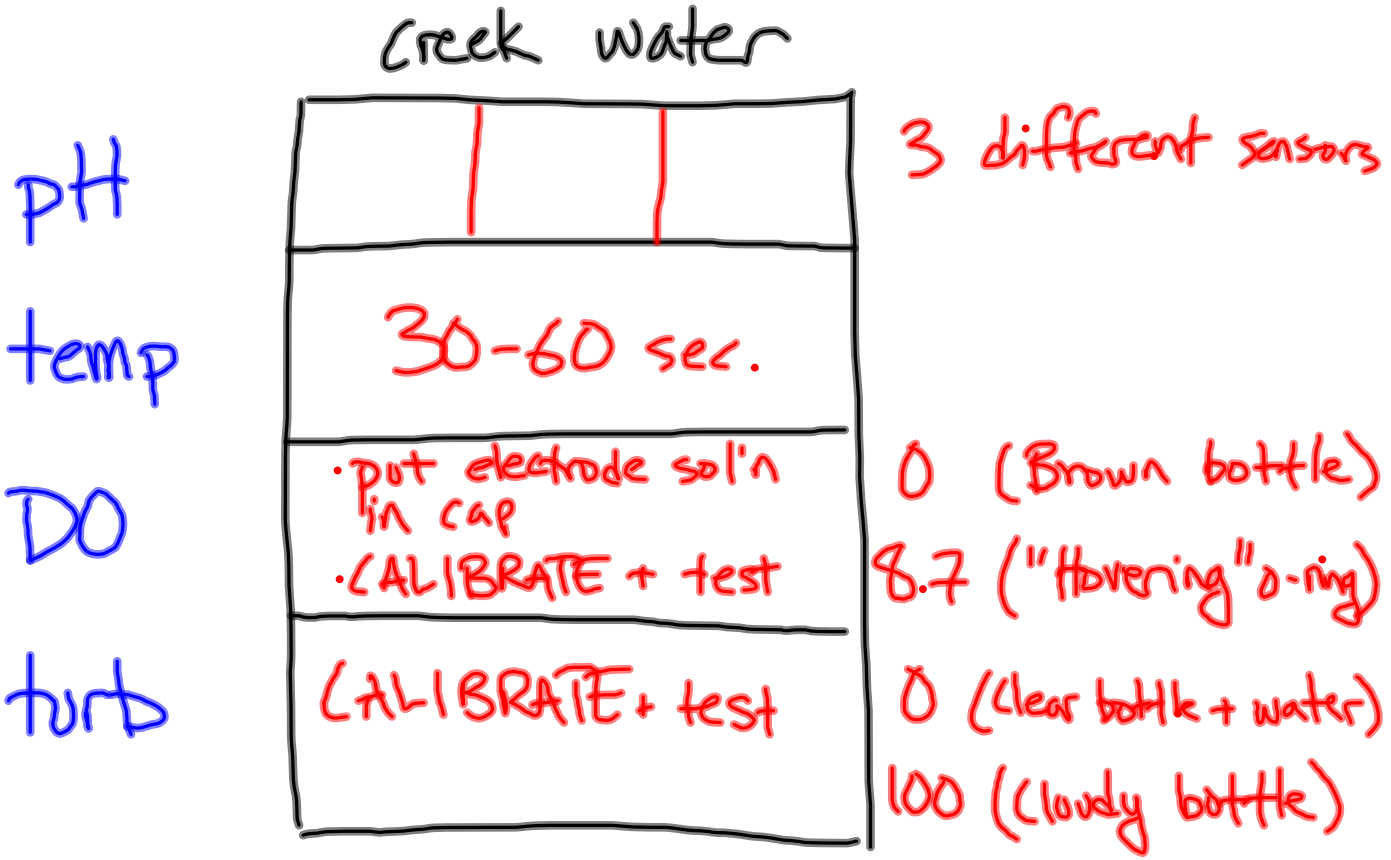
Turbidity:

Measures the particles suspended in water (cloudiness)

Measured in NTU's

0 NTU (clear) ——— 1-2,000 NTU (very cloudy) — 10,000+ NTU (ridiculous)

- Turbidity can clog some organisms' gills
- Increased turbidity increases sunlight absorption which increases temperature which decreases DO


Creek water
pH
temp
DO
turb
3 different sensors
30-60 sec.
· put electrode sol'n in cap
· CALIBRATE + test
0 (Brown bottle)
8.7 ("Hovering" o-ring)
CALIBRATE + test
0 (clear bottle + water)
100 (cloudy bottle)