

Water Quality Parameters

Student Worksheet

Parameter	What is it?	Importance	Factors Affecting It	How is it measured? (Units)

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Answer Key

Parameter	What is it?	Importance	Factors Affecting It	How is it measured? (Units)
temperature	kinetic energy of water molecules	temperature tolerance ranges for survival, affect on metabolic rates, affects sensitivity to pollutants	season, sunlight vs. shade of a stream bed, sediment absorbs heat, different sources of water, flow of stream	thermometer Celsius or Fahrenheit
dissolved oxygen (D.O.)	amount of oxygen dissolved in water	critical for all aquatic organisms' survival, some sport fish like trout and salmon require high D.O.	temperature (inversely); salinity (inversely) altitude (reduces) respiration, photosynthesis; organic matter—decomposition lowers	Winkler Titration mg/l or ppm
pH	concentration of hydrogen ion in water (negative log of that concentration); how acidic or basic water is	pH affects aquatic animals internal processes; can show pollution sources such as acid rain; can affect toxicity of other chemicals in water like metals	amount of minerals—buffering capacity input of acidic or basic materials	pH probe or meter with a glass electrode and a reference electrode; unitless; ranges from 0 to 14
turbidity	amount of suspended particles in water	measure of sediment, problems with sediment—smother fish eggs and benthic insects.	sediment, algae, storm events, natural sources of sediment, erosion, nutrient sources	various—secchi disks (depth) , transparency tubes (cms.or inches), dual cylinder kit (JTU), turbidity meter (NTUs, FTUs)
conductivity	ability of water to carry an electrical charge	all aquatic life have a tolerance range for dissolved minerals, effect drinking water taste, can help identify pollutant inputs.	rain water, geology of watershed, dissolved minerals, sources of sewage, animal waste, industrial pollutants	conductivity probe measures resistance than converts to conductivity; micromhos/cm (umhos/cm)