

# Protocols



## **[Instrument Construction: Transparency](#)**

Instructions to build a secchi disk or transparency tube for measuring water transparency.

## **[Instrument Construction: Freshwater Macroinvertebrates](#)**

Instructions to build several nets for freshwater macroinvertebrate sampling.

## **[Selecting and Documentating Your Hydrosphere Study Site](#)**

Instructions are provided on how to select, describe and map a site for hydrosphere protocols.

## **[Sampling Procedures](#)**

Students are shown how to collect a water sample for testing.

## **[Water Transparency Protocol](#)**

Students will first measure water transparency at their undisturbed study site using a transparency tube or Secchi disk.

## **[Water Temperature Protocol](#)**

Students will measure the temperature of water.

## **[Dissolved Oxygen Protocol](#)**

Students will measure dissolved oxygen in the water at their site using a dissolved oxygen test kit or probe.

### **Electrical Conductivity Protocol**

Students will measure electrical conductivity of water at freshwater hydrosphere study sites.

### **Salinity Protocol**

Students will measure the salinity of a salty or brackish water sample using a hydrometer and thermometer.

### **pH Protocol**

Students will measure the pH of water using either pH paper or a pH meter.

### **Alkalinity Protocol**

Students will measure the alkalinity of water using an alkalinity test kit.

### **Nitrate Protocol**

Students will measure the nitrate-nitrogen content of water using a nitrate test kit.

### **Freshwater Macroinvertebrate Protocol**

Students will collect, identify, and count macroinvertebrates at freshwater hydrosphere sites.

### **Salinity Titration Protocol**

Students will measure the salinity of saltwater using a salinity titration kit.

### **Mosquito Larvae Protocol**

Students will sample, identify and count the number of mosquito larvae at the genus or species level in their study site or community.