**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.