

## High School Wetland Ecology Description and TEKS Inside/Outside 1 ½ hours



During this hand-on field study, students will be briefed on the different types of wetlands, three factors that make a wetland and how to explore and gather data in the wetland. Field and lab studies will include water quality testing, macro invertebrate collection and identification, soil survey and plant identification.

Students will determine the water quality of the wetland by analyzing and interpreting the data collected in the field. Macro invertebrates and the biotic and abiotic factors affecting their health will be the highlighted during the lesson. Each group will receive data gathering tools; data logger, soil probe, collection nets, collection buckets, turbidity tube. The blackland prairie and wetland ecosystems will also be discussed with direct observation of the ecotone between them. Emphasis will be given to research, observation and data collection.

### **Environmental Systems TEKS** (this is only a brief overview of the TEKS covered)

- The student, for at least 40% of instructional time, conducts hands-on laboratory and field investigations using safe, environmentally appropriate, and ethical practices. (1)
- Demonstrate the use of course apparatuses, equipment, techniques and procedures including pipettes, pH probes, thermometers, turbidity testing devices, hand magnifiers, water quality test kits, soil probes, buckets and collection containers. (2.G)
- The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. (4)
- Measure the concentration of solute, solvent and solubility of dissolved substances such as dissolved oxygen and describe their impact on an ecosystem. (4.E)
- The student knows the interrelationships among the resources within the local environmental system. (5)
- Identify source, use, quality, management, and conservation of water. (5.B)
- The student knows the relationship between carrying capacity and changes in populations and ecosystems. (7)
- Analyze and make predictions about the impact on populations of geographic locales due to urbanization. (7.D)

### **Aquatic Science** (this is only a brief overview of the TEKS covered)

- The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. (1)
- Students know that aquatic environments are the product of Earth systems interactions. (4)
- Identify key features and characteristics of hydrological and biological systems as they relate to aquatic environments. (4.A)
- The student knows the origin and use of water in a watershed. (7)
- Identify sources and determine the amounts of water in a watershed, including surface water and ground water and rainfall. (7.A)
- Identify water quantity and quality in a local watershed. (7.C)
- The student knows the types and components of aquatic ecosystems. (9)
- The student knows environmental adaptations of aquatic organisms. (10)
- Classify different aquatic organisms. (10.A)
- The student knows about the interdependence and interactions that occur in aquatic environments. (11)
- Identify how energy flows and matter cycles through fresh water aquatic system including food webs. (11.A)