Environmental Systems Syllabus

Course Description/Goals:

The Environmental Systems TEKS focus on how natural and human-influenced systems interact and change over time. Students explore the dynamic relationships between biotic and abiotic components of ecosystems, energy flow, resource use, and population patterns. Through laboratory and field investigations, students examine ecological principles, biodiversity, environmental cycles, and the effects of both natural events and human activities on Earth systems. This course emphasizes systems thinking, real-world environmental challenges, and evidence-based decision making to support the development of scientifically literate citizens prepared to engage with local and global environmental issues.

Course TEKS/Objectives:

The Environmental Systems TEKS are organized around scientific concepts that explore the interactions between living and nonliving components of Earth's systems. Students investigate biotic and abiotic relationships within ecosystems, the cycling of matter and flow of energy, and how natural processes and human activities influence environmental stability. Through laboratory and field investigations, students use data, models, and scientific reasoning to analyze population dynamics, natural and anthropogenic environmental changes, and sustainability practices. Topics include nutrient cycles, resource management, ecosystem resilience, climate change, pollution, population growth, and the role of legislation, ethics, and economics in environmental decision-making. Each category contains specific standards (TEKS) that students are expected to master and can be referenced here.

Course Outline:

Semester 1	Semester 2
-Ecosystems: Biotic and Abiotic Factors -Interrelationships within the Ecosystem -Energy Flow through the Environmental System -Populations and Carrying Capacity	-Natural Changes in the Environment -Emissions and Pollutants -Impact on Environmental Systems -Ethics and Economics -Legislation