

Scientific Research and Design Science, Technology, Engineering, and Mathematics (Environmental Sustainability) Syllabus

Course Description/Goals:

In this PLTW course, students investigate and design solutions in response to real-world challenges related to clean and abundant drinking water, food supply, and renewable energy. This course satisfies a high school science graduation requirement and will be included in the calculation of the weighted GPA.

Course TEKS/Objectives:

In Environmental Sustainability (ES), students design solutions to solve real-world challenges related to clean drinking water, a stable food supply, and renewable energy. Students are introduced to environmental issues and use the engineering design process to research and design potential solutions. Environmental issues and solutions are the focus of the activities and projects conducted throughout this course. Through both individual and collaborative team activities, projects, and problems, students problem-solve as they practice common design and scientific protocols, such as project management, lab techniques, and peer review. Building enthusiasm for and a real understanding of the role, impact, and practice of environmental sustainability is a primary goal of the course.

<https://tea.texas.gov/academics/pltw-environmental-sustainability.pdf>

Course Outline:

Semester 1	Semester 2
<ul style="list-style-type: none">● Intro to Environmental Sustainability● Global Water Crisis● Water Supply● Water Remediation● Disaster Area Water Treatment Design	<ul style="list-style-type: none">● World Food Security● Introduction to DNA● Genetic Engineering● Design a GM Food● Challenges of Renewable Energy● Biofuels from Algae

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