Plano East Environmental Systems Syllabus

Environmental Systems includes laboratory investigation and fieldwork using appropriate inquiry. This hands-on course is a survey of the many systems, cycles, and processes that impact life on earth, providing real-world examples of how biology and chemistry concepts are found in the environment. In this course, the student will investigate the relationships in ecosystems between abiotic and biotic factors and multiple species, humanity's impact on the earth, and how pollution negatively impacts everyone.

Teacher Information:

Shelby Peyton
Room: B5-203
Email: shelby.peyton@pisd.edu
Phone: 469-752-9000

Tutorial Times:

Mondays 8:30am - 9:00am
Tuesdays 7:30am - 8:00am
Thursdays 4:30pm - 5:00pm
Other times available by appointment

Required supplies each day:
- Chromebook
- Pencil/Pen
- Notebook

Supplemental supplies:
- Kleenex/tissues
- Paper towels
- Hand sanitizer

Grades

60% - Major Grades
Major Projects and Labs
Tests

40% - Daily Grades
Daily work
Quizzes

Assessments

All unit assessments will utilize the "criss-cross" method. Each student will take the assessment individually first. Then after a day of review/reteach students will be placed in collaborative groups of 3-4 and will retake the assessment as a group. An algorithm, using the two assessment scores, will calculate the final grade. Each assessment will be worth 2 grades, individual performance will be worth 1 daily grade and the final calculated score will count as a major grade.

Late Work

Any missing work must be turned in before the unit assessment. Missing work will not be accepted past the date of the unit assessment.

Lab Safety

Safety is strictly enforced during all activities. Failure to follow all safety guidelines can result in removal from the lab, office referral, and/or parent conference.

Personal & Digital Citizenship:

When in person and online you are expected to conduct yourself with dignity, empathy, and respect at all times. At no time will foul language or inappropriate behavior be tolerated. Failure to do so will result in an automatic phone call to your parents and an office referral.

ID's:

All students must wear their ID badge whenever on campus. Students without an ID badge will be issued a temporary badge. Repeated failure to comply will result in an office referral.

Dress Code:

All students must abide by the PISD dress code every day. Students that are not in compliance with the dress code will be sent to their sub school immediately.

Cell Phones, etc.
Cell phones, headphones, earbuds, etc. must be placed in your back or with you other belongings on the table at the rear of the room. Students that do not comply will have their device collected and returned at the end of class as well as contacting their parents/guardians. Subsequent offenses will result in a conference with the student and their parents/guardians and an office referral.

Academic Dishonesty
Academic dishonesty in any form will not be tolerated. All students involved will be given a 0 for that particular assignment/assessment, parents contacted, and an office referral issued.

Ecology Unit
Students will review the experimental design process, safe laboratory practice, and learn about safe field study practice. Students will design an experiment to practice this skill set. Students will analyze the movement of nutrients and energy through the biogeochemical cycles, and through food chains and food webs in different ecosystems. They will study relationships within these ecosystems at multiple trophic levels. As they move into studying relationships, students will analyze the different roles that organisms can play in their own ecosystems, including how they interact with other species. Finally, students will study population dynamics by calculating birth rate and death rate. They will look at the impact of extinction on ecosystems.

Human Impacts
Students will apply their knowledge of populations to analyze human populations. They will differentiate between developing and developed countries, and determine the impact of economics and education on population growth. Students will identify the difference between
exponential and logistical growth and analyze the effects of natural disasters on population and biodiversity. The students will then identify types of land management and analyze how they impact land fertility. As students learn about food production, they will study the importance and impacts of soil quality, fertilizer, and pesticides. They will also study how the USA allocates land into national parks and important historical environmental figures. As students finish out this unit, they will analyze the positives and negatives of mining for resources, and differentiate between types of mining. Students will compare and contrast nonrenewable and renewable sources of energy, analyze the impact of energy consumption on ecosystems, and discuss current and future technological advances for meeting our energy needs.

Pollution
Students will study the types of waste that humans produce and the impact they can have on ecosystems and communities. Students will analyze the waste they create from everyday activities, such as meals and classwork. They will study different hazardous waste sites and the management of them. Students will study alternative waste management options such as recycling and composting. In the water unit, students will discuss sources of water and where these sources are found on earth. Students will read about aquifers and model how they filter our water. Students will study how water pollution impacts others, including eutrophication and oil spills. Students will also study waterborne diseases. Students will finish the course by studying the atmosphere and air pollution. Students will differentiate between climate and weather. They will discuss how greenhouse gasses make the earth livable, but how too high of a concentration or too low can negatively impact all species. Students will discuss the layers of the atmosphere and how pollution in the atmosphere can result in acid rain and health problems.