

# 2023 JR. HIGH ENVIROTHON

## SOIL AND LAND USE

### Essential Topics and Learning Objectives

1. Know the definition of soil and the composition of average soil.
  - Understand the importance of pore space.
  - Know what comprises the organic matter of soil.
2. Know the importance of soils and be able to give examples.
3. Know soil's role in:
  - Nutrient cycles
  - The water cycle and purification and storage of water
  - Plant growth
  - Habitat for soil dwelling organisms
  - Construction decisions
4. Know how we use soils
  - Understand the soil ecosystem.
  - Recognize types of organisms that dwell in the soil.
  - Know some services provided by soil organisms.
  - Understand the roles of various soil organisms.
5. Understand the soil's role in the cycling of essential nutrients and water.
6. Recognize basic soil forming factors and the role of each.
7. Know the origin of parent material.
  - Recognize the processes that act on parent material.
  - Recognize the general categories of parent material.
  - Define weathering.
  - Know the definition of topography, and know what topography influences.
  - Recognize the importance of the biota.
  - Know why organic matter is important to soil.
  - Define humus, and know its importance.
8. Identify parts of a soil profile.
9. Recognize basic soil properties.
  - Know the soil particles and relative sizes.
  - Know how to use a textural triangle and how to texture soils.
  - Recognize the importance of and factors affecting soil structure.
  - Recognize the role impact of soil pH.
10. Know how to use written soil survey report data and maps to locate specified information, including soil characteristics, drainage and potential use of the soil.
11. Identify various types of erosion, factors affecting the rate of erosion, and the problems of sedimentation.
12. Identify Best Management Practices (conservation practices) for the control of erosion.
13. Recognize the impact of human actions on soil.

### Reference Materials List:

1. Soil and Land Use - Bedford County 7<sup>th</sup> and 8<sup>th</sup> Grade Envirothon
2. "Any County" Soil Survey (multiple copies may be obtained from the Conservation District)

### Learning Enhancement

The following Pennsylvania Envirothon YouTube video explains the method for determining Soil Texture.

[Envirothon Soils Study Session 3](#)