

Students should be able to

1. Know soil vocabulary and terminology including names of soil constituents: sand, silt, clay, organic matter, air and water.
2. Be able to describe topographic features including names of landforms and estimating percent slope.
3. Understand the origin of soil parent materials.
4. Be able to describe a soil profile including depth, horizons, color, texture and structure.
5. Be able to determine the presence of human induced soil compaction.
6. Be able estimate soil properties including infiltration, permeability, water holding capacity, nutrient holding capacity, effective rooting depth, susceptibility to subsidence, and susceptibility to mass movement (land slide).
7. Rate the suitability of a soil for various uses by man including building site development and roads, sanitary facilities (landfills and septic tank filter fields), animal waste management, water management, water quality and nutrient management, agriculture, silviculture, and wildlife habitat.
8. Recognize the causes of soil erosion and recommend practices to protect the soil from erosion.
9. Recognize agricultural impacts to soils including erosion (sheet and rill, ephemeral gullies, classic gullies, road scouring and mass movement), poor tilth, compaction, salinization, subsidence, excess animal waste, excess fertilizers and excess pesticides.
10. Recognize urban impacts to soils including erosion, sedimentation, and compaction
11. Knows ways in which cultural history and cultural resources can be identified in the soil.
12. Understand how hydrologic alterations can affect the soil.
13. Know how to use a soil survey report including use of the map index, reading aerial photographs, finding soil boundaries and symbols on a detailed soil map, reading soil map unit descriptions, and reading tables.

General soils:

California FFA Land Judging Manual, Fifth Edition (San Luis Video Publishing, PO Box 6715, Los Osos, CA 93402; <http://horticulturevideos.com/productlist.cfm?c=37&sd=7398008&rd=105040118>)

For more in depth understanding of soils (optional)

1. Soils and Soil Physical Properties: http://zzyx.ucsc.edu/casfs/training/manuals/tofg/download/unit_2.1a_soil_physical.pdf
2. Soil Chemistry and Fertility: http://zzyx.ucsc.edu/casfs/training/manuals/tofg/download/unit_2.2a_soil_chem.pdf
3. Soil Biology Primer: http://soils.usda.gov/sqi/soil_quality/soil_biology/soil_biology_primer.html

Soils references related to Managing Cultural Landscapes

1. Urban soil primer: <http://soils.usda.gov/use/urban/primer.html>
2. Understanding Soil Risks and Hazards: <http://soils.usda.gov/use/risks.html>
3. Soil Quality Resource Concerns: erosion: http://soils.usda.gov/sqi/files/sq_two_1.pdf
4. Soil Quality Resource Concerns: compaction: http://soils.usda.gov/sqi/files/sq_nin_1.pdf
5. Soil Quality Resource Concerns: salinization: <http://soils.usda.gov/sqi/files/Salinization.pdf>
6. Soil Quality Resource Concerns: soil biodiversity: <http://soils.usda.gov/sqi/files/biodivers.pdf>
7. Soil Quality Resource Concerns: pesticides: <http://soils.usda.gov/sqi/files/Pesticides.pdf>
8. Soil Compaction: Detection, Prevention, and Alleviation :<http://soils.usda.gov/sqi/files/17.pdf>
9. Urban Technical Note: Erosion and Sedimentation on Construction Sites: <http://soils.usda.gov/sqi/files/u01d.pdf>

10. Urban Technical Note: Urban soil compaction: <http://soils.usda.gov/sqi/files/u02d.pdf>
11. Major Causes of Wetland Loss and Degradation: <http://www.water.ncsu.edu/watershedss/info/wetlands/wetloss.html>
12. Mass Movement and Subsidence Caused by Anthropogenic Activity: http://clic.cses.vt.edu/icomanth/29-Mass_Movement.pdf
13. Human-Modified Soils of Tulare County, California: http://clic.cses.vt.edu/icomanth/21-AS_CA_Tulare_Soils.pdf
14. Plowing & Soil Modification: <http://clic.cses.vt.edu/icomanth/23-Plowing.pdf>
15. Human structures that modify the natural landscape (pdf file)