

SOILS

Purpose

The purpose of this CDE is to encourage high school agriculture students to learn about the soil resource.

Objectives

Students competing in the State Soils CDE would be expected to develop skills and abilities in the following areas.

- I. To identify and evaluate characteristics of a soil profile.
- II. To evaluate surface features which influence potential use of land.
- III. To estimate the movement of air and water through the soil.
- IV. To estimate the productive capacity of soil.
- V. To recommend practices needed to conserve soil resources.
- VI. To analyze the suitability of land for agricultural and non-agricultural uses.

Crosswalk with Show Me Standards

Objectives – Students participating in the Career Development Event should be able to:		Show-Me Standards	
		Knowledge Standards (Content Areas)	Performance Standards (Goals)
1.	To identify and evaluate characteristics of a soil profile.	CA.3	1.3, 1.4, 1.6, 1.7
2.	To evaluate surface features which influence potential use of land.	MA.1, MA.2, MA.3	3.1, 3.2
3.	To estimate the movement of air and water through the soil.	SC.2, SC.4, SC.5, SC.8	4.4, 4.8
4.	To estimate the productive capacity of soil.	SS.5	
5.	To recommend practices needed to conserve soil resources.		
6.	To analyze the suitability of land for agricultural and non-agricultural uses.		

Corresponding Secondary Agriculture Curriculum			
Course and/or Curriculum:	Agricultural Science II	Unit(s):	Soil Science
	Plant Science Curriculum		Basic Soil Science

Event Format

1. The Soils CDE will consist of contestants evaluating and determining management practices of four (4) soil sites selected by the superintendent and judged in advance of the event. The boundaries will be marked so that each site will have some uniformity of soil profile and surface features.
2. The most current Interpretation Help Guide will be provided to each contestant.
3. Judging pits will be dug to a depth of more than three feet unless limited by a very rocky layer. Buckets of soil from each horizon will be provided at each judging site.
4. Yardsticks and a water supply will be provided at each judging site.
5. The following information regarding each site will be available to the contestants **and posted on a sheet at each pit site:**
 - a. Number of the site.
 - b. Boundary of the site marked by corner flags (100' x 100').
 - c. The available water capacity of the horizons which are not judged.
 - d. Students must determine slope using any non electronic device (hand level, clinometer, clipboard). **Two stakes set at 50' or 100' will be clearly identified for slope determination.**
6. Students will be rotated through the soil site at five-minute intervals with no fewer than three students in the pit at one time. A maximum of 60 minutes and a minimum 30 minutes will be spent at each site. Groups may move at the superintendent's discretion after 30 minutes provided all scorecards have been submitted to the group leader.
7. Each site will be discussed by the judges at the completion of the event. Contestants, teachers, and others who may be interested are encouraged to attend.
8. Contestants should wear clothing, boots, etc., appropriate for weather conditions.
9. If an answer splits a class boundary, mark the answer that is the most limiting as the correct answer.

Event Scoring

Events	Points
Soil Pit 1	82 points
Soil Pit 2	82 points
Soil Pit 3	82 points
Soil Pit 4	82 points
Totals	328 points

1. Judges will score each site before the CDE begins. Scoring of all items will be based on information in the Soil Science Curriculum from IML.
2. **Tie scores among teams in all events should be broken using the high individual team member's score.** In case the scores are tied, the scores of the second high individual on each team should be used.
3. Ties between individuals will be broken by using the highest individual pit score.

Event Rules and Regulations

1. These CDE rules take precedence over information, rules, etc. indicated in Appendix I and II of the Soil Science curriculum available from IML if a conflict exists.
2. Spatula or digging devices will be provided. No knives are allowed.
3. Neither contestants nor teachers are allowed to visit the event sites prior to the event.
4. Contestants shall not communicate with any other contestants, in any way, while the CDE is in progress.
5. No one except contestants, judges, superintendents, and CDE assistants will be allowed to observe the event site while judging is in progress.
6. Violation of any of the above rules may result in the elimination of individuals or teams involved from the CDE.
7. **A retired or former Agriculture teachers will oversee the set-up of the Soils CDE to ensure that all pits are displayed correctly with accurate information.**

References

Soil Science Curriculum - IML, University of Missouri, available via DESE website under the Plant Science curriculum tab.

Plant Science Curriculum: Basic Soil Science Lessons –MVATA
<https://missouriffa.org/curriculum-login/>

Local county soil survey report (free). Contains detailed soil maps and descriptions, soil chemical and physical characteristics and interpretations for agricultural and urban use. County soil surveys can also be obtained through the local office of the Natural Resources Conservation Service or on the web at <http://soilsurvey.org> or <http://websoilsurvey.nrcs.usda.gov/app/>.

For further information on soil teaching aids and references, or soil judging contests, contact the superintendent.

Forms

See FORM 19 and Soils Interpretation Help Sheet (Revised 2018).