



INDIANA 4-H & INDIANA FFA

Career Development Events

Soil Judging

Purpose

The purpose of the Soil Judging CDE is designed to teach youth skills necessary in soil science and make land use recommendations for production agriculture and home site development.

Objectives

Students will be able to:

1. To identify and evaluate key soil characteristics like texture, slope, drainage, and structure.
2. Based on these properties, indicating its suitability for various uses (e.g., agriculture, urban development).
3. Use the knowledge to make informed decisions about land management, including appropriate agricultural practices, conservation strategies, and even home site selection.
4. By understanding the limitations and potential of different soils, students develop a sense of stewardship towards natural resources and learn how to manage them sustainably.

Event Format

- **Area/Regional Contest Components (All Individual Activities)**

- Homesite- 2 Pits Evaluated
- Agriculture Use- 2 Pits Evaluated
- All pits evaluated using scorecards provided by Purdue Extension

- **Regional Contest Scoring/Advancement**

- Ag Site Pits- 114 points per pit
- Home Site Pits- 117 points per pit
- Total Individual Points Possible- 462 Points
- Total Team Points Possible- 1,386 Points
- Team Score is composed of top three scores per team
- Advancement to State
 - Top 6 Senior Teams
 - Top 2 Junior Teams
 - The top 6 “Non-Masters” teams from each area contest, plus any “Master” teams who place in the top 6 overall at the area contest. An additional team may be added to the number advancing for each team from that regional that qualified for the national event the prior year. No entity (FFA Chapter or 4-H group) shall advance more than 2 senior FFA teams and 2 senior 4-H teams from the regional to the state contest.

- **State Contest Components**

- Homesite- 2 Pits Evaluated
- Agriculture Use- 2 Pits Evaluated
- All pits evaluated using scorecards provided by Purdue Extension

- **Tiebreakers**

- 1- Highest team score including fourth score
- 2- Total score for team without fourth score for Pit #1
- 3- Total score for team without fourth score for Pit #2, 3, etc until tie is broken

- **Contest Prep/Equipment Needed**

- Each student needs the following items
 - Clipboard with Slope Finder attached
 - Pencils
 - Spray Bottle
 - Knife, Nail, Small Spade, etc
- Appropriate Attire for soil pits (Plan for rainy, muddy weather)
- **Soil Texturing/Soil Horizons Identifying**
 - Starting in 2025 students will be required to obtain and identify the proper soil layers to determine soil textures.
 - Exceptions to this rule:
 - Soil profiles which are identified by the soil scientists to close to make an obvious decision
 - Timing issues for efficient running of the contest
 - Soil scientists believe putting soil in buckets would allow for a better learning experience for the students

- **Registration**

- FFA teams must complete their registration on the Indiana FFA portal. All team members must be on the FFA roster and have their online waivers completed.
- 4-H teams must complete their registration on the Indiana 4-H online website. All members must meet all 4-H membership requirements.
- All registration must be completed by the deadline set by 4-H and FFA staff.
- Teams that advance to the state contest may make one substitution per team from the area/region contest to the state contest.

- **Ag Judging Handbook**

- This CDE is a joint effort of both Indiana 4-H and Indiana FFA Association. It is governed by the Ag Judging Committee and all rules and guidelines in the Ag Judging Committee handbook apply to the Soils CDE.

- **References**

- Scorecards:
 - [HOME SITE CARD](#)
 - [AG SITE CARD](#)
- Resources
 - [Indiana Soil Evaluation Field Book- Summary of Rules](#)
 - https://extension.purdue.edu/4-H/_docs/get-involved/state-programs/CDE/soils-Clarification-of-Rule-3631324.pdf
 - <https://edustore.purdue.edu/id-72-w.html>
 - https://extension.purdue.edu/4-H/_docs/ay-362-w-coaches-letter-2019.pdf
 - [SITE CARD EXAMPLE](#)
 - [SLOPE FINDER](#)

Scatron Example-Back Side

Part III - Agriculture Practices (3 points each, 69 total per site)					
LAND USE OVERVIEW					
	1	2	3	4	5
1 Restore original vegetation to:	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)
2 Prime farmland	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
EROSION AND COMPACTION POTENTIALS					
3 High for erosion by water	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
4 High for erosion by wind	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
5 High for soil compaction	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
BUFFERS AND COVER CROPS					
6 Grassed waterways	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
7 Windbreaks	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
8 Filter strips	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
9 Most significant benefit of cover crops:	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)
CROPPING PRACTICES					
10 Timber stand improvement (TSI)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
11 Permanent pasture	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
12 Crop rotation	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
TILLAGE PRACTICES					
13 No till	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
14 Moldboard or chisel plowing	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
WATER MANAGEMENT					
15 Drainage	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
16 Irrigation	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
17 Terraces	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
PLANT NUTRIENT APPLICATION					
18 N: A-Low; B-Medium; C-High	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)
19 P: A-Add; B-None; C-Deplete	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)
20 K: A-Add; B-None; C-Deplete	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)
21 Limer: A-Add; B-None	(A)(B)	(A)(B)	(A)(B)	(A)(B)	(A)(B)
NUTRIENT POLLUTION POTENTIAL					
22 Nitrogen pollution potential:	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)
23 Phosphorus pollution potential:	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)

Part III - Homelife Practices (3 points each, 72 total per site)					
SITE SELECTION & CONSTRUCTION PRACTICES					
	1	2	3	4	5
1 Is the soil suitable for a homelife?	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
2 Preserve trees & plant new ones	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
3 Maintain soil cover during construction	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
4 Improve surface drainage	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
5 Is the soil suitable for a basement?	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
6 Design for high-day subsoils	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
7 Potential construction hazards on slopes	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
8 Install diversion structures and drains	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
9 Provide foundation drainage	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
10 High risk for cave-in during construction	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
LANDSCAPE AND LAWN PRACTICES					
11 Manage soil reaction for acid-loving shrubs	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)
12 Manage soil reaction for lawns	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)
13 Apply phosphorus (P) to lawn	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
14 Apply potassium (K) to lawn	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
ON-SITE SEWAGE DISPOSAL - SUITABILITY					
15 Is soil suitable for an absorption field?	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
SEPTIC TANK PRACTICES					
16 Septic tank outlet filter cleaning interval	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)
17 Septic tank pumping interval (PI, years)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)	(A)(B)(C)
SOIL ABSORPTION FIELD PRACTICES					
18 Subsurface trench, gravity flow system	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
19 Subsurface trench, flood dose system	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
20 Subsurface trench, pressure distrib. system	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
21 Elevated sand mound system	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
22 Elev. sand mound & subsurface drain	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
23 Drip distribution & secondary treatment	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)
24 Secondary treatment	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)	(Y)(N)

$$PI = \frac{(D \times G) / 1,000}{R}$$

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D=Disp. (Y = 7; N = 10); G = tank size, gal.; R = Resid.