



ENVIRONMENT AND NATURAL RESOURCES

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ASSOCIATE SUPERINTENDENT CONTACT INFORMATION

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PURPOSE

The Environment and Natural Resources skill activity aims to assess students' abilities in areas such as water quality, sustainable agricultural practices, soil and water conservation, surveying, and biological waste handling.

Participants in this activity will engage with concepts and equipment related to residential and recreational irrigation.

GENERAL INFORMATION

- All students must wear safety glasses during the skill activities. To enter the CDE area, **students must have safety glasses** in their possession.
- **No iPad, tablet and cell phone devices** will be allowed in the contest area. The activity may involve problem-solving and calculations. A calculator is highly recommended. See the [Computer/Calculator requirements](#).

Possible activities for the 2025 event- ENR skill area will be focused on residential/recreational turf irrigation.

- Perform checks and preventive maintenance common to seasonal changes on residential or recreational turf irrigation systems.
- Repair or install equipment common to residential or recreational turf irrigation systems
- Use water testing equipment to calculate flow rates and use those results to
 - design or planning of residential or recreational turf irrigation systems
 - select irrigation equipment and techniques

COMPETENCIES

- Select irrigation systems for specific conditions
- Select irrigation equipment and techniques
- Install components of irrigation systems for specific applications
- Apply water pressure, flow, and head concepts.

AGRICULTURE, FOOD AND NATURAL RESOURCES CONTENT STANDARDS

- PST.04.03.04.c.- Install and/or repair pipes and plumbing equipment and fixtures in AFNR structures.
- PST.04.03.04.a. Compare and contrast the characteristics of materials used in plumbing and water systems
- PST.04.03.04.b. Calculate the cost of a water system in an AFNR structure
- CS.04.01.01.b. Analyze available practices to steward natural resources in AFNR systems
- ESS.03.02.05.b. Analyze how interactions between groundwater and surface water affect flow and availability of water.

SUGGESTED RESOURCES

In addition to the general references specified for the Agricultural Technology and Mechanical Systems CDE, the following references are suggested for the Compact Equipment Skill Activity. Note: Specific references are listed below, but others may be added at a later date, and remember:

PLEASE REVIEW THESE REFERENCES FOR THE CDE

- General Rainbird videos
 - <https://www.rainbird.com/homeowner-learning>
- Mobile Irrigation Lab (MIL) Handbook
 - https://agedweb.org/water/Docs/MIL_Technical_Handbook_May_2017.pdf
- Mobile Irrigation Lab (MIL) Technical Handbook
 - https://ccmedia.fdacs.gov/content/download/61247/file/MIL_Technical_Handbook_May_2017.pdf
- Irrigation Systems Management
 - <https://asabe.org/portals/0/apubs/books/ism/irrigationsystemsmanagement.pdf>
 - <https://www.nrcs.usda.gov/sites/default/files/2023-01/7385.pdf>
- USDA-NRCS National Engineering Handbook Irrigation Guide.
 - <https://www.nrcs.usda.gov/sites/default/files/2023-01/7385.pdf>
- Rain Bird Landscape Irrigation Design Manual
 - <https://www.rainbird.com/sites/default/files/media/documents/2018-02/IrrigationDesignManual.pdf>