

2021 - 2022 Ag Mechanics CDE – Description Sheet

Team Activity:

Area and State Information – Team Activity will focus on small engines. Students will need to be familiar with the Honda GCV 160 engine and the following sections of the Honda GCV 160 repair manual:

- Section 1 – Specifications
- Section 2 – Service Information
- Section 3 – Maintenance
- Section 8 – Cam Pulley/Crankshaft/Piston/Cylinder Block

Skill Activities:

A. Electrical Systems

Necessary tools will be provided. You may bring colored pencils for use on drawing diagrams.

Area and State Information – 3 or 4 boxes will be mounted to 2" x 4" boards. The contestant will make hooks and secure the wires to the correct locations but will not cut wire. Connections to boxes and connection of devices inside the box must be made according to NEC recommendations and accepted wiring practices (AAVIM)

B. Compact Equipment

Necessary tools will be provided. Students will be required to

- measure selected parts using dial calipers, micrometers, and/or feeler gauges
- answer related problem-solving questions
- Install and adjust specific engine components/parts

Area and State Information

Briggs and Stratton Single Cylinder OHV Air-Cooled Engine, Briggs and Stratton Single Cylinder OHV Air-Cooled Engine Illustrated Parts list and Repair Manual (276781 – 8/09). Be familiar with the following sections:

- Section 1 – Safety, Maintenance, and Adjustments
- Section 2 – Troubleshooting
- Section 6 – Cylinder Heads and Valves
- Section 12 – Engine Specifications

C. Environmental/Natural Resources (ENR)

This year's activity will focus on differential leveling. Students will need to be able to:

- Determine the difference in elevation between two points using methods of differential leveling.
- Determine the distance between two points using the stadia hairs on an automatic level and an engineer's rod.

Area Information

Students will need to determine elevation difference using pictures and diagrams or rod readings.

State Information

Students will need to be able to:

- Set up and use an automatic level
- Read and record the measurement on an engineer's rod
- Determine distance and elevation using an automatic level and engineer's rod

D. Structures:

Area Information

Welding Skill will be SMAW (stick) Single-Pass Tee joint on 3/16" thick plate.

State Information

Welding Skill will be a SMAW (stick) Single-Pass Pipe on Plate.

Welding Equipment List for Contestants:

1. Teams will be penalized under "Safety" on score sheet for not having the following items:
 - SMAW Electrodes – at least 4 per student (Any type or size up to 1/8" will be allowed)
 - Welding Helmet – Shade 10 minimum
 - Body cover- leathers, Shop Jackets, non-flammable Coveralls
 - Welding Gloves
 - Pliers/Tongs
 - Safety glasses –approved with shields
 - Wire brush
 - Soapstone
 - Chipping Hammer
 - Tape Measure
2. Please do not share tools and equipment between team members (bring one of each for each student).
3. All other materials and tools will be provided.

Approved Safety Glasses are required for Team Activity and Skill Activities. (Meets or exceeds ANSI Z87.1-2003 safety standards)