

# Safe Tractor Driving

Academic Content Area: Mathematics – Grade 11

## Career Development Event Content

1. Students must have an understanding of and ability to perform the following:
  - Tractor inspection
  - Tractor starting procedures
  - Tractor hitching
  - Tractor operations
  - Tractor safety
2. Complete a written examination on safety and various aspects of machinery/tractor uses and maintenance.
3. Participate in a troubleshooting activity to demonstrate inspection and detection of ten errors.
4. Demonstrate proficiency in tractor maintenance on twelve serviceable systems.

## Related Academic Standards/Anchors

Objectives 1-4: 2.2.11.A,B; 2.3.11.A,C

## Connecting Examples: CDE Objectives and Standards/Anchors

Ex. 1 – Related to 2.2.11.B: Use estimation to solve problems for which an exact answer is not needed. **Students must be prepared to make estimations on fluid levels and lever/brake pressure/force.**

Ex. 2 – Related to 2.3.11.A: Select and use appropriate units and tools to measure to the degree of accuracy required in particular measurement situations. **Students must be able to determine the appropriate tools for each specific task and know the degree of accuracy required for proper system maintenance. For example, students must be able to use a hydrometer for battery service and battery ignition system care. Also, students must perform a compression test, valve tappet adjustments and cooling system levels ingredient ratios.**

# Safe Tractor Driving

Academic Content Area: Science and Technology – Grade 10

## Career Development Event Content

1. Students must have an understanding of and ability to perform the following:
  - Tractor inspection
  - Tractor starting procedures
  - Tractor hitching
  - Tractor operations
  - Tractor safety
2. Complete a written examination on safety and various aspects of machinery/tractor uses and maintenance.
3. Participate in a troubleshooting activity to demonstrate inspection and detection of ten errors.
4. Demonstrate proficiency in tractor maintenance on twelve serviceable systems.

## Related Academic Standards/Anchors

Objectives 1-4: **3.1.10.A,B,D,E; 3.2.10.D; 3.4.10.C; 3.7.10.B**

## Connecting Examples: CDE Objectives and Standards/Anchors

**Ex. 1 – Related to 3.1.10.A: Discriminate among the concepts of systems, feedback and control in solving technological problems. Sub-point, identify the function of subsystems within a larger system (e.g., role of thermostat in an engine, pressure switch).** Students must have proficient knowledge and experience working with various systems on tractors and machinery. For example, students must demonstrate proficiency in tractor maintenance on twelve serviceable systems.

**Ex. 2 – Related to 3.2.10.D: Identify and apply the technological design process to solve problems. Sub-point, examine the problem, and rank all necessary information and all questions that must be answered. Students must participate in a troubleshooting activity to demonstrate inspection and detection of ten errors within tractor systems.**

**Ex. 3 – Related to 3.4.10.C: Distinguish among the principles of force and motion. Sub-points, identify the relationship of electricity and magnetism as an electromagnetic force, identify elements of simple machines in compound machines and explain fluid power systems. Students must have a knowledge and understanding of electrical systems, elements of simple and compound machines and fluid power systems. For example, students must understand magnetos in the electrical system and ignition, coolant and hydraulic systems.**