

Intro to Ag Power and Tech Standards

State Standards

Cluster Skills

- CS.06.02.01.a.** Use proper safety practices/personal protective equipment.
- CS.07.04.01.a.** Research applicable regulatory and safety standards (e.g., MSDS, bioterrorism).
- CS.07.04.02.a.** Handle chemicals and equipment in a safe and appropriate manner.
- CS.08.01.01.a.** Identify standard tools, equipment, and safety procedures related to a specific task.
- CS.08.01.02.a.** Follow operating instructions related to specific tools and equipment needed to complete a task.
- CS.08.02.01.a.** Use the appropriate procedures for the use and operation of specific tools and equipment.
- CS.08.02.01.b.** Demonstrate safety precautions when using tools for a specific task around bystanders.
- CS.08.03.01.a.** Describe the conditions that cause the need for tool maintenance.

Power, Structural and Technical Systems

- PST.01.02.01.a.** Classify lubricants by source, sustainability and equipment compatibility.
- PST.01.02.01.b.** Classify lubricants by SAE viscosity and API service classifications.
- PST.01.03.01.a.** Identify and demonstrate safe use and maintenance of measurement and layout tools.
- PST.01.03.01.b.** Select, maintain and use hand and power tools in service, construction and fabrication.
- PST.02.01.01.a.** Identify and schedule power unit and equipment lubrication.
- PST.02.01.01.b.** Ensure the presence and function of safety systems and hardware on tools and equipment.
- small gas
 - shop equipment
 - safety guards
- PST.02.01.02.a.** Service filtration systems and maintain fluid levels on power units and equipment.
- PST.02.01.02.b.** Adjust equipment, including belts and drives, chains and sprockets, and maintain fluid conveyance components, such as hoses, lines and nozzles.
- hydraulic systems
- PST.02.01.03.a.** Maintain the cleanliness and appearance of power units and equipment to assure functionality.
- small gas
 - welding
- PST.02.02.01.a.** Identify power unit and equipment controls and instruments, along with their functions.
- PST.02.02.01.b.** Perform start-up and shut-down procedures on power units and equipment as specified in technical manuals.
- small gas
 - welding/cutting
- PST.02.02.02.a.** Perform pre-operation inspection according to manufacturers' specifications and/or prevailing industry standards.
- PST.02.02.02.b.** Demonstrate safe practices and regulations in the operation of power units and equipment.
- PST.03.01.01.a.** Identify components and systems of internal combustion engines.
- 2-cycle/4-cycle
 - ethanol vs. natural diesel
- PST.03.01.02.a.** Describe the operation of internal combustion engines by types of fuel used.

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- PST.03.04.01.a.** Apply the meaning and measurement of electricity, including amperage, voltage and wattage.
PST.03.04.01.b. Assess and install electrical circuits, including conductors, insulators and controls.
- PST.03.04.02.a.** Identify the kinds and applications of electricity, including direct and alternating current.
PST.03.04.02.b. Interpret electrical system symbols and diagrams.
- PST.04.01.01.a.** Identify symbols and drawing techniques used to develop plans and sketches.
PST.04.01.01.b. Develop plans and sketches using drafting equipment and computer programs.
 - wood, metal
- PST.04.01.02.a.** Prepare bills of materials to accompany plans and sketches.
PST.04.01.02.b. Use scale measurement and dimension to develop plans and sketches.
- PST.04.03.01.a.** Identify criteria in selecting materials in agricultural construction/fabrication.
PST.04.03.01.b. Select types of materials, determine quantities and estimate their costs and other costs associated with a specified project plan.
- PST.04.04.01.a.** Construct and/or repair with wood and metal.
PST.04.04.01.b. Install and/or repair pipes and plumbing equipment and fixtures.
- PST.04.04.02.a.** Identify electricity measurements and make measurement calculations.
PST.04.04.02.b. Distinguish electrical circuits and components of each.
- PST.04.04.05.a.** Measure and calculate materials for concrete, brick, stone or masonry units in agricultural construction.
PST.04.04.05.b. Construct and/or repair with concrete, brick, stone or masonry units.
 - concrete basics
 - slope
- PST.04.04.06.a.** Measure and calculate fencing materials.
PST.04.04.06.b. Construct and/or repair fencing, including wood, static wire, electrical wire and other fencing materials.
- PST.04.04.07.a.** Identify kinds and characteristics of metal materials.
PST.04.04.07.b. Distinguish welding processes, positions, and materials preparation.
PST.04.04.07.c. Construct and/or repair metal structures and equipment using welding fabrication procedures, including those associated with SMAW, GMAW, GTAW, fuel-oxygen and plasma arc torch methods.
- PST.05.01.01.a.** Discuss various types and sources of electricity.
PST.05.01.01.b. Use volt and amp meters and continuity testers to demonstrate electricity principles.
- PST.05.02.01.a.** Recognize common electrical symbols.
PST.05.02.01.b. Read and design schematic drawings for an electrical control system.
- PST.05.02.03.a.** Identify hazards and safety practices in planning, installing and using electricity.
PST.05.02.03.b. Distinguish and select materials and tools used in electrical control circuit installation.
- PST.05.03.01.a.** Identify geospatial technologies, including global positioning, geographical information and remote sensing.
PST.05.03.01.b. Explain and evaluate concepts and principles of geospatial technologies.
 - OSU Okmulgee
- PST.05.03.02.a.** Explain site-specific agriculture as related to geospatial technologies.
PST.05.03.02.b. Describe equipment and processes used in geospatial technologies.
 - where used – over spraying, fence rows, etc.