

Standards Correlations

Small Engine Repair (8021, 8082)

Task	SOL Correlations
Demonstrating Personal Qualities and Abilities	
Demonstrate creativity and innovation.	<p>English: 6.1, 6.3, 6.4, 6.6, 6.7, 6.9, 7.1, 7.3, 7.4, 7.6, 7.7, 7.9, 8.1, 8.3, 8.4, 8.6, 8.7, 8.9, 9.1, 9.5, 9.6, 9.8, 10.1, 10.5, 10.6, 10.8, 11.1, 11.5, 11.6, 11.8, 12.1, 12.5, 12.6, 12.8</p> <p>History and Social Science: CE.1, CE.4, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WG.4, WHI.1, WHII.1</p> <p>Mathematics: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.10, 6.11, 6.12, 7.2, 7.3, 7.8, 7.9, 8.2, 8.4, 8.6, 8.7, 8.11, 8.12, 8.17, 8.18, A.9, AFDA.3, AFDA.4, AFDA.5, AFDA.6, AFDA.7, AFDA.8, AII.9, COM.1, COM.3, COM.4, COM.5, COM.8, DM.7, DM.1*, DM.10, DM.2*, DM.3*, PS.3*, PS.4*, PS.7*, PS.9*, PS.10*</p> <p>Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PS.1</p>
Demonstrate critical thinking and problem solving.	<p>English: 6.1, 6.3, 6.4, 6.5, 6.6, 6.7, 6.9, 7.1, 7.3, 7.4, 7.5, 7.6, 7.7, 7.9, 8.1, 8.3, 8.4, 8.5, 8.6, 8.7, 8.9, 9.1, 9.5, 9.6, 9.8, 10.1, 10.5, 10.6, 10.8, 11.1, 11.5, 11.6, 11.8, 12.1, 12.5, 12.6, 12.8</p> <p>History and Social Science: CE.1, CE.4, CE.11, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WG.4, WHI.1, WHII.1</p> <p>Mathematics: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.10, 6.11, 7.2, 7.3, 7.8, 7.12, 7.13, 8.2, 8.4, 8.8, 8.9, 8.10, 8.11, A.8, A.9, G.1, G.13, G.14, AFDA.3, AFDA.5, AFDA.8, AII.9, AII.10, AII.11, COM.1, COM.3, COM.4, COM.5, COM.8, DM.4, DM.7, DM.1*, DM.2*, DM.3*, DM.9*, PS.9*, PS.10*</p> <p>Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PS.1</p>

Task	SOL Correlations
Demonstrate initiative and self-direction.	English: 6.1, 6.4, 6.6, 6.7, 6.9, 7.1, 7.4, 7.6, 7.7, 7.9, 8.1, 8.4, 8.6, 8.7, 8.9, 9.1, 9.5, 9.6, 9.8, 10.1, 10.5, 10.6, 10.8, 11.1, 11.5, 11.6, 11.8, 12.1, 12.5, 12.6, 12.8 History and Social Science: CE.1, CE.4, CE.11, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1
Demonstrate integrity.	English: 6.1, 7.1, 8.1, 9.1, 9.5, 10.1, 10.5, 11.1, 11.5, 12.1, 12.5 History and Social Science: CE.1, CE.3, CE.4, GOVT.1, GOVT.16, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1
Demonstrate work ethic.	English: 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1 History and Social Science: CE.1, CE.4, CE.14, GOVT.1, GOVT.16, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Science: CH.1
Demonstrating Interpersonal Skills	
Demonstrate conflict-resolution skills.	English: 6.1, 6.2, 6.4, 6.6, 6.7, 6.9, 7.1, 7.2, 7.4, 7.6, 7.7, 7.9, 8.1, 8.2, 8.4, 8.6, 8.7, 8.9, 9.1, 10.1, 11.1, 12.1 History and Social Science: CE.1, CE.4, GOVT.1, USI.1, VUS.1
Demonstrate listening and speaking skills.	English: 6.1, 6.2, 6.4, 6.6, 7.1, 7.2, 7.4, 7.6, 8.1, 8.2, 8.4, 8.6, 9.1, 10.1, 11.1, 12.1 History and Social Science: CE.1, CE.4, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1
Demonstrate respect for diversity.	English: 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1 History and Social Science: CE.1, CE.3, CE.4, GOVT.1, GOVT.16, USI.1, USII.1, USII.9, VUS.1, VUS.13, WG.1, WHI.1, WHII.1
Demonstrate customer service skills.	English: 6.1, 6.4, 6.7, 7.1, 7.4, 7.7, 8.1, 8.4, 8.7, 9.1, 9.5, 9.6, 10.1, 10.5, 10.6, 11.1, 11.5, 11.6, 12.1, 12.5, 12.6 History and Social Science: CE.1, CE.4, GOVT.1, GOVT.16, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1
Collaborate with team members	English: 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1

Task	SOL Correlations
	History and Social Science: CE.1, CE.3, CE.4, GOVT.1, GOVT.16, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1
Demonstrating Professional Competencies	
Demonstrate big-picture thinking.	English: 6.1, 6.4, 7.1, 7.4, 8.1, 8.4, 9.1, 9.5, 10.1, 10.5, 11.1, 11.5, 12.1, 12.5 History and Social Science: CE.1, CE.4, CE.12, GOVT.1, GOVT.15, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1
Demonstrate career- and life-management skills.	English: 6.1, 6.7, 7.1, 7.7, 8.1, 8.7, 9.1, 9.6, 10.1, 10.6, 11.1, 11.6, 12.1, 12.6 History and Social Science: CE.1, CE.4, CE.12, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Mathematics: 8.4
Demonstrate continuous learning and adaptability.	English: 6.1, 6.4, 6.7, 6.9, 7.1, 7.4, 7.7, 7.9, 8.1, 8.4, 8.7, 8.9, 9.1, 9.5, 9.6, 9.8, 10.1, 10.5, 10.6, 10.8, 11.1, 11.5, 11.6, 11.8, 12.1, 12.5, 12.6, 12.8 History and Social Science: CE.1, CE.3, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Science: BIO.1, CH.1, LS.1, PH.1, PH.4, PS.1
Manage time and resources.	English: 6.1, 6.2, 6.4, 6.7, 6.9, 7.1, 7.2, 7.4, 7.7, 7.9, 8.1, 8.2, 8.4, 8.7, 8.9, 9.1, 9.5, 9.6, 9.8, 10.1, 10.5, 10.6, 10.8, 11.2, 11.5, 11.6, 11.8, 12.2, 12.5, 12.6, 12.8 History and Social Science: CE.1, CE.4, CE.11, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Mathematics: 6.10, 6.11, 6.12, 7.2, 7.3, 7.8, 7.9, 7.10, 7.11, 7.12, 7.13, 8.4, 8.11, 8.12, 8.13, 8.14, 8.17, 8.18, A.4, A.5, A.8, A.9, AFDA.3, AFDA.4, AFDA.5, AFDA.6, AFDA.7, AFDA.8, COM.1, COM.3, COM.5, COM.8
Demonstrate information-literacy skills.	English: 6.1, 6.2, 6.4, 6.6, 6.7, 6.9, 7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 7.9, 8.1, 8.2, 8.3, 8.4, 8.6, 8.7, 8.9, 9.2, 9.5, 9.6, 9.8, 10.2, 10.5, 10.6, 10.8, 11.2, 11.5, 11.6, 11.8, 12.2, 12.5, 12.6, 12.8 History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1

Task	SOL Correlations
	Mathematics: 6.10, 6.11, 7.8, 7.9, 8.11, 8.12, A.8, A.9, AFDA.3, AFDA.4, AFDA.6, AFDA.7, AFDA.8, DM.8, PS.1*, PS.2*, PS.3*, PS.4*, PS.7*, PS.8*, PS.9*, PS.10* Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PH.1, PS.1
Demonstrate an understanding of information security.	English: 6.1, 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 7.8, 7.9, 8.1, 8.2, 8.3, 8.4, 8.6, 8.7, 8.8, 8.9, 9.1, 9.2, 9.5, 9.6, 9.8, 10.1, 10.2, 10.5, 10.6, 10.8, 11.1, 11.2, 11.5, 11.6, 11.8, 12.1, 12.2, 12.5, 12.6, 12.8 History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Mathematics: COM.10
Maintain working knowledge of current information-technology (IT) systems.	English: 6.1, 6.3, 6.4, 6.6, 6.9, 7.1, 7.3, 7.4, 7.6, 7.9, 8.1, 8.3, 8.4, 8.6, 8.9 History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Mathematics: 7.8, COM.1, COM.2, COM.7, COM.9, COM.10, COM.11, COM.16, COM.18, PS.17 Science: BIO.1, CH.1, ES.1, PH.1
Demonstrate proficiency with technologies, tools, and machines common to a specific occupation.	History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Mathematics: 6.10, 6.11, 7.9, 8.4, A.7, A.8, A.9, AFDA.1, AFDA.3, AFDA.5, AII.4, AII.7, AII.9, COM.1, COM.7, COM.10, COM.11, COM.12, COM.16 Science: CH.1, ES.1, LS.1, PH.1, PS.1
Apply mathematical skills to job-specific tasks.	English: 6.4, 6.6, 6.7, 7.4, 7.6, 7.7, 8.4, 8.6, 8.7, 9.5, 9.6, 10.5, 10.6, 11.5, 11.6, 12.5, 12.6 History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Mathematics: 6.1, 6.2, 6.5, 6.6, 6.12, 6.13, 6.14, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.8, 7.9, 7.11, 7.12, 7.13, 8.4, 8.5, 8.6, 8.8, 8.9, 8.10, 8.11, 8.12, 8.13, 8.14, 8.15, 8.16, 8.17, 8.18, A.1, A.3, A.4, A.5, A.7, A.8, A.9, AFDA.1, AFDA.3, AFDA.5, AFDA.8, AII.3, AII.7, AII.9, AII.10, COM.1, COM.7 Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PH.1, PS.1

Task	SOL Correlations
Demonstrate professionalism.	English: 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1 History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1
Demonstrate reading and writing skills.	English: 6.1, 6.6, 6.7, 7.1, 7.6, 7.7, 8.1, 8.6, 8.7, 9.1, 9.5, 9.6, 9.7, 10.1, 10.5, 10.6, 10.7, 11.1, 11.5, 11.6, 11.7, 12.1, 12.5, 12.6, 12.7 History and Social Science: CE.1, CE.4, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Science: 6.1, PH.1, PS.1
Demonstrate workplace safety.	English: 6.4, 7.4, 8.4, 9.5, 10.5, 11.5, 12.5 History and Social Science: CE.1, CE.4, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Science: CH.1
Examining All Aspects of an Industry	
Examine aspects of planning within an industry/organization.	History and Social Science: GOVT.16
Examine aspects of management within an industry/organization.	
Examine aspects of financial responsibility within an industry/organization.	
Examine technical and production skills required of workers within an industry/organization.	
Examine principles of technology that underlie an industry/organization.	
Examine labor issues related to an industry/organization.	History and Social Science: GOVT.16
Examine community issues related to an industry/organization.	History and Social Science: GOVT.16

Task	SOL Correlations
Examine health, safety, and environmental issues related to an industry/organization.	History and Social Science: GOVT.16
Addressing Elements of Student Life	
Identify the purposes and goals of the student organization.	
Explain the benefits and responsibilities of membership in the student organization as a student and in professional/civic organizations as an adult.	
Demonstrate leadership skills through participation in student organization activities, such as meetings, programs, and projects.	
Identify Internet safety issues and procedures for complying with acceptable use standards.	
Exploring Work-Based Learning	
Identify the types of work-based learning (WBL) opportunities.	
Reflect on lessons learned during the WBL experience.	
Explore career opportunities related to the WBL experience.	
Participate in a WBL experience, when appropriate.	
Exploring Leadership Opportunities through FFA	
Identify the role of supervised agricultural experiences (SAEs) in agricultural education.	English: 9.3, 9.5, 10.3, 10.5
Participate in an SAE.	English: 9.5, 9.8, 10.5, 10.8

Task	SOL Correlations
Identify the benefits and responsibilities of FFA membership.	English: 9.5, 9.6, 9.7, 9.8, 10.5, 10.6, 10.7, 10.8
Describe leadership characteristics and opportunities as they relate to agriculture and FFA.	English: 9.5, 10.5 History and Social Science: VUS.8, VUS.9, VUS.10, VUS.11, WHIL.8, WHIL.10, WHIL.11
Apply for an FFA degree and/or an agricultural proficiency award.	English: 9.5, 10.5
Applying Safety Practices	
Demonstrate the use of personal protective equipment (PPE).	English: 9.5, 10.5, 11.5, 12.5 Science: CH.1
Use safety shields and guards on all equipment.	English: 9.5, 10.5, 11.5, 12.5
Demonstrate safety practices for flammable materials.	English: 9.5, 10.5, 11.5, 12.5 History and Social Science: GOVT.15
Identify safety practices followed in the operation of small-engine equipment.	English: 9.5, 10.5, 11.5, 12.5
Identify marked safety zones and nonskid areas.	English: 9.5, 10.5, 11.5, 12.5
Identify the location and use of eye wash stations.	English: 9.5, 10.5, 11.5, 12.5 Science: CH.1
Identify the location of posted evacuation routes.	English: 9.5, 10.5, 11.5, 12.5
Demonstrate knowledge of Safety Data Sheets (SDS).	English: 9.5, 10.5, 11.5, 12.5 History and Social Science: GOVT.15 Science: CH.1

Task	SOL Correlations
Demonstrate the precautions for the use of chemicals.	
Demonstrate the use of standard and metric hand tools.	English: 9.5, 10.5, 11.5, 12.5
Demonstrate the use of power tools.	English: 9.5, 10.5, 11.5, 12.5
Demonstrate the use of standard and metric precision measuring tools.	English: 9.5, 10.5, 11.5, 12.5
Explain the use of fire protection equipment.	English: 9.5, 10.5, 11.5, 12.5
Demonstrate the use of specialty tools.	English: 9.5, 10.5, 11.5, 12.5
Follow federal, state, and local standards, regulations, and procedures.	English: 9.5, 9.8, 10.5, 10.8, 11.5, 11.8, 12.5, 12.8 History and Social Science: GOVT.15
Describe the Operation of an Internal Combustion Engine	
Explain the operation of a four-stroke engine.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.5, PH.6, PH.7
Explain the operation of a two-stroke engine.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.5, PH.6, PH.7
Explain the interrelationship of parts during each stroke for an internal combustion engine.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.5, PH.6
Selecting and Using Tools	
Demonstrate torque technique for threaded fasteners.	English: 9.5, 10.5, 11.5, 12.5
Identify the basic hand tools and commonly used power tools in small engine repair.	English: 9.5, 10.5, 11.5, 12.5

Task	SOL Correlations
Identify measuring and testing devices.	English: 9.5, 10.5, 11.5, 12.5
Demonstrate the use of measuring and testing devices.	English: 9.5, 10.5, 11.5, 12.5
Selecting Repair Parts	
Identify manufacturer, model number, serial number, specification number, and other unique equipment numbers.	English: 9.5, 10.5, 11.5, 12.5
Use service, repair, and operating manuals for equipment.	English: 9.5, 10.5, 11.5, 12.5
Locate replacement part numbers.	
Repairing Manual Starters	
Identify the components of a manual starter.	English: 9.5, 10.5, 11.5, 12.5
Repair a manual starter.	English: 9.5, 10.5, 11.5, 12.5
Identifying Electric Starters	
Identify the components of an electric starter.	English: 9.5, 10.5, 11.5, 12.5
Repair an electric starter.	English: 9.5, 10.5, 11.5, 12.5
Repairing Ignition Systems	
Identify types of ignition systems used in small engines.	English: 9.5, 10.5, 11.5, 12.5
Identify parts used in repairing the ignition circuit.	English: 9.5, 10.5, 11.5, 12.5
Service ignition parts.	English: 9.5, 10.5, 11.5, 12.5
Evaluating Battery Systems	
Describe the safety hazards associated with battery systems.	English: 9.5, 10.5, 11.5, 12.5
Evaluate system operation.	

Task	SOL Correlations
Install a battery.	English: 9.5, 10.5, 11.5, 12.5
Test a battery.	
Examining Functions and Types of Fuel Systems	
Explain the principles of a fuel delivery system.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.5, PH.6, PH.7
Identify the types of fuel delivery systems, system components, and fuel types.	English: 9.5, 10.5, 11.5, 12.5
Evaluate and service the fuel system.	English: 9.5, 10.5, 11.5, 12.5
Repairing Carburetors and/or Fuel Injection Systems	
Identify types of carburetors and fuel injection systems.	English: 9.5, 10.5, 11.5, 12.5
Explain the operation of a carburetor and a fuel injection system.	English: 9.5, 10.5, 11.5, 12.5
Evaluate the operation of a carburetor.	English: 9.5, 10.5, 11.5, 12.5
Service a carburetor and/or fuel injection system.	
Determine the replacement vs. repair of a carburetor and/or a fuel injection system.	English: 9.5, 10.5, 11.5, 12.5
Replace a carburetor.	English: 9.5, 10.5, 11.5, 12.5
Repairing Governors	
Identify types of governors.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.5, PH.7
Explain the operation of a governor.	
Evaluate operation of a governor.	

Task	SOL Correlations
Adjust the governor.	
Servicing Valves on Four-Stroke Engines	
Describe the operation of intake and exhaust valves.	English: 9.5, 10.5, 11.5, 12.5
Describe the differences between the OVH and L-head valve design.	
Evaluate valve clearance.	
Evaluate valves and accessories for defects.	
Install valves and accessories.	
Replace the cylinder head.	English: 9.5, 10.5, 11.5, 12.5
Repairing Valves on Two-Stroke Engines	
Identify types of valves.	English: 9.5, 10.5, 11.5, 12.5
Explain how valves work.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.7
Evaluate the reed valve for proper operation.	English: 9.5, 10.5, 11.5, 12.5
Replace the reed valve assembly.	English: 9.5, 10.5, 11.5, 12.5
Examining Internal Engine Parts	
Remove internal engine parts.	English: 9.5, 10.5, 11.5, 12.5
Identify internal engine parts.	English: 9.5, 10.5, 11.5, 12.5
Explain how pistons and the compression system work.	English: 9.5, 10.5, 11.5, 12.5
Explain how various piston rings work.	English: 9.5, 10.5, 11.5, 12.5
Inspect the cylinders for wear.	
Analyze the camshaft assembly for defects.	English: 9.5, 10.5, 11.5, 12.5

Task	SOL Correlations
Evaluate a crankshaft.	English: 9.5, 10.5, 11.5, 12.5
Servicing Air Filters	
Identify types of air filters.	English: 10.5, 11.5, 12.5
Service air filters.	English: 10.5, 11.5, 12.5
Servicing the Lubrication System	
Select engine oil.	English: 10.5, 11.5, 12.5
Change the engine oil.	English: 9.5, 10.5, 11.5, 12.5
Change the oil filter.	English: 9.5, 10.5, 11.5, 12.5
Inspect the breather.	English: 9.5, 10.5, 11.5, 12.5
Servicing Spark Plugs	
Identify the components of a spark plug.	English: 9.5, 10.5, 11.5, 12.5
Evaluate the spark plug.	
Set the spark plug electrode gap.	