Automotive Technology Evaluation Tool

2020 Curricular Materials Review

Idaho CTE Trades and Industry (T&I) Automotive Technology Program Standards[[1]](#footnote-1)

**Publisher information**

* Publisher Name:
* Title:
* Grade Level:
* ISBN #:
* Author:
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# Instructions:

Complete the Publisher Standards Alignment Report below. Please provide written justification as to how the material meets the standard along with location references. If a justification requires additional space, please submit response on an additional document.

# Publisher STANDARDS ALIGNMENT Report:

## Standard AUTO.1.0: Identify and Utilize Safety Procedures and Proper Tools

### Performance Standard AUTO.1.1 Demonstrate General Lab Safety Rules and Procedures

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.1.1.1 Describe general shop safety rules and procedures. |  |
| CTE AUTO.1.1.2 Utilize safe procedures for handling of tools and equipment. |  |
| CTE AUTO.1.1.3 Identify and use proper placement of floor jacks and jack standards. |  |
| CTE AUTO.1.1.4 Identify and use proper procedures for safe vehicle life operation. |  |
| CTE AUTO.1.1.5 Utilize proper ventilation procedures for working within the lab/shop area. |  |
| CTE AUTO.1.1.6 Identify marked safety areas. |  |
| CTE AUTO.1.1.7 Identify the location and the types of fire extinguishers and other fire safety equipment; demonstrate knowledge of the procedures for using fire extinguishers and other safety equipment. |  |
| CTE AUTO.1.1.8 Identify the location and use of eye wash stations. |  |
| CTE AUTO.1.1.9 Identify the location of the posted evacuation routes. |  |
| CTE AUTO.1.1.10 Comply with the required use of safety glasses, ear protection, gloves, and shoes during lab/shop activities. |  |
| CTE AUTO.1.1.11 Identify and wear appropriate clothing for lab/shop activities. |  |
| CTE AUTO.1.1.12 Secure hair and jewelry for lab/shop activities. |  |
| CTE AUTO.1.1.13 Identify safety aspects of supplemental restraint systems (SRS), electronic brake control systems, and hybrid vehicle high voltage circuits. |  |
| CTE AUTO.1.1.14 Identify safety aspects of high voltage circuits (such as high intensity discharge (HID) lamps, ignition systems, injection systems) |  |

### Performance Standard AUTO.1.2 Identify and Utilize Proper Tools

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.1.2.1 Identify tools and their usage in automotive applications. |  |
| CTE AUTO.1.2.2 Identify standard and metric designations and fasteners. |  |
| CTE AUTO.1.2.3 Demonstrate safe handling and use of appropriate tools. |  |
| CTE AUTO.1.2.4 Demonstrate proper cleaning, storage, and maintenance of tools and equipment. |  |
| CTE AUTO.1.2.5 Demonstrate proper use of precision measuring tools (e.g., micrometer, dial‐indicate, dial‐caliper). |  |

## Standard AUTO.2.0: Perform Basic Vehicle Service

### Performance Standard AUTO.2.1 Identify and Utilize Vehicle Service Information

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.2.1.1 Locate and utilize paper and/or electronic service information. |  |
| CTE AUTO.2.1.2 Locate and utilize Technical Service Bulletins (TSBs). |  |
| CTE AUTO.2.1.3 Demonstrate knowledge of special service messages, quotes, service campaigns/recalls, vehicle/service warranty applications and service interval recommendations. |  |
| CTE AUTO.2.1.4 Locate Vehicle Identification Number (VIN) and production data code. |  |
| CTE AUTO.2.1.5 Analyze Vehicle Identification Number (VIN) information. |  |
| CTE AUTO.2.1.6 Identify other vehicle information labels (such as tire, emissions, etc.) |  |

### Performance Standard AUTO.2.2 Prepare a Vehicle for the Customer

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.2.2.1 Ensure vehicle is prepared to return to customer per school/company policy (floor mats, steering wheel cover, etc.) |  |
| CTE AUTO.2.2.2 Verify vehicle repair. |  |

## Standard AUTO.3.0: Apply Concepts of Engine Repair (A1)

### Performance Standard AUTO.3.1 Demonstrate General Engine Service Techniques

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.3.1.1 Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins. |  |
| CTE AUTO.3.1.2 Verify operation of the instrument panel engine warning indicators. |  |
| CTE AUTO.3.1.3 Inspect engine assembly for fuel, oil, coolant, and other leaks; determine necessary action. |  |
| CTE AUTO.3.1.4 Install engine covers using gaskets, seals and sealers as required. |  |
| CTE AUTO.3.1.5 Demonstrate knowledge of timing belt removal and replacement. |  |
| CTE AUTO.3.1.6 Perform common fastener and thread repair, to include: remove broken bolt, restore internal and external threads, and repair internal threads with thread insert. |  |
| CTE AUTO.3.1.7 Identify hybrid vehicle internal combustion engine service precautions. |  |

### Performance Standard AUTO.3.2 Perform Cylinder Head and Valve Train Service and Repair

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.3.2.1 Identify various cylinder head configurations (i.e., OHV, OHC, DOHC, VVT). |  |
| CTE AUTO.3.2.2 Demonstrate knowledge of valve adjustment (mechanic and hydraulic lifters). |  |

### Performance Standard AUTO.3.3 Perform Lubrication and Cooling System Service and Repair

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.3.3.1 Diagnose various cooling system faults including block test, thermostat operation, coolant restrictions, leaks, and fan operation. |  |
| CTE AUTO.3.3.2 Inspect, replace and adjust drive belts, tensioners, and pulleys, check pulley and belt alignment. |  |
| CTE AUTO.3.3.3 Inspect and test coolant; drain and recover coolant; flush and refill cooling system with recommended coolant; bleed air as required. |  |
| CTE AUTO.3.3.4 Perform oil and filter change. |  |

## Standard AUTO.4.0: Analyze Automatic Transmission/Transaxle for Service (A2)

### Performance Standard AUTO.4.1 Perform General Transmission/Transaxle Service

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.4.1.1 Research applicable vehicle and service information, fluid type, vehicle service history, service precautions, and technical service bulletins. |  |
| CTE AUTO.4.1.2 Check fluid level in a transmission, or a transaxle equipped with a dip-stick. |  |
| CTE AUTO.4.1.3 Check fluid level in a transmission, or a transaxle not equipped with a dip-stick. |  |
| CTE AUTO.4.1.4 Check transmission fluid condition; check for leaks. |  |
| CTE ALC.4.1.5 Discuss how citizens and interest groups can affect agricultural policies. |  |

### Performance Standard AUTO.4.2 Perform In-vehicle Transmission/Transaxle Service and Repair

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.4.2.1 Inspect, adjust, and replace external manual valve shift linkage, transmission range sensor/switch, and park/neutral position switch. |  |
| CTE AUTO.4.2.2 Inspect for leakage at external seals, gaskets, and bushings. |  |
| CTE AUTO.4.2.3 Inspect powertrain mounts.  |  |
| CTE AUTO.4.2.4 Drain and replace fluid and filter (s). |  |

## Standard AUTO.5.0: Analyze Manual Drivetrain and Axles for Service (A3)

### Performance Standard AUTO.5.1 Perform General Drive Train Service

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.5.1.1 Research applicable vehicle and service information, fluid type, vehicle service history, service precautions, and technical service bulletins. |  |
| CTE AUTO.5.1.2 Drain and refill manual transmission/transaxle and final drive unit. |  |
| CTE AUTO.5.1.3 Check fluid condition; check for leaks. |  |

### Performance Standard AUTO.5.2 Investigate Clutch Systems for Service and Repair

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.5.2.1 Check and adjust clutch master cylinder fluid level. |  |
| CTE AUTO.5.2.2 Check for system leaks. |  |
| CTE AUTO.5.2.3 Describe basic operation of a manual clutch system. |  |

### Performance Standard AUTO.5.3 Perform Drive Shaft and Half Shaft, Universal, and Constant Velocity (CV) Joint Service and Repair

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.5.3.1 Diagnose, inspect, remove and replace front wheel drive (FWD) bearings, hubs, and seals. |  |
| CTE AUTO.5.3.2 Diagnose, inspect, service and replace shafts, yokes, boots, and universal/CV joints. |  |

### Performance Standard AUTO.5.4 Assess Differential Case Assembly for Service

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.5.4.1 Demonstrate knowledge of differential operation. |  |
| CTE AUTO.5.4.2 Clean and inspect differential housing; check for leaks; inspect housing vent. |  |
| CTE AUTO.5.4.3 Check and adjust differential housing fluid level + A71. |  |
| CTE AUTO.5.4.4 Drain and fill differential housing. |  |

### Performance Standard AUTO.5.5 Perform Drive Axle Service and Repair

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.5.5.1 Inspect and replace drive axle wheel studs. |  |
| CTE AUTO.5.5.2 Inspect front‐wheel bearings and locking hubs. |  |

## Standard AUTO.6.0: Perform Suspension and Steering Service and Repair (A4)

### Performance Standard AUTO.6.1 Prepare Vehicle for General Suspension and Steering Systems Service

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.6.1.1 Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins. |  |
| CTE AUTO.6.1.2 Disable and enable supplemental restraint system (SRS). |  |

### Performance Standard AUTO.6.2 Perform Steering Systems Service and Repair

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.6.2.1 Demonstrate knowledge of various power steering systems. |  |
| CTE AUTO.6.2.2 Identify and inspect various steering system components. |  |
| CTE AUTO.6.2.3 Demonstrate knowledge of various suspension systems. |  |
| CTE AUTO.6.2.4 Identify and inspect various suspension system components. |  |
| CTE AUTO.6.2.5 Inspect electric power-assisted steering. |  |
| CTE AUTO.6.2.6 Identify electronically controlled suspension systems and safety precautions. |  |
| CTE AUTO.6.2.7 Identify hybrid vehicle power steering system electrical circuits and safety precautions. |  |

### Performance Standard AUTO.6.3 Investigate Wheel Alignment Conditions

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.6.3.1 Demonstrate knowledge of alignment angles, including camber, caster, toe, and SAI. |  |
| CTE AUTO.6.3.2 Perform pre‐alignment inspection and measure vehicle ride height, perform necessary action. |  |

**Performance Standard AUTO.6.4 Perform Wheel and Tire Service, and Repair**

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.6.4.1 Inspect tire condition; identify tire wear patterns; check for correct size and application (load and speed ratings) and adjust air pressure; determine necessary action. |  |
| CTE AUTO.6.4.2 Rotate tires according to manufacturer's recommendations. |  |
| CTE AUTO.6.4.3 Dismount, inspect, and remount tire on wheel; balance wheel and tire assembly (static and dynamic). |  |
| CTE AUTO.6.4.4 Dismount, inspect, and remount tire on wheel equipped with tire pressure monitoring system sensor. |  |
| CTE AUTO.6.4.5 Inspect tire and wheel assembly for air loss; perform necessary action. |  |
| CTE AUTO.6.4.6 Repair tire according to industry standards. |  |
| CTE AUTO.6.4.7 Identify TPMS maintenance and relearn procedures. |  |

## Standard AUTO.7.0: Analyze Brake Systems for Service and Repair (A5)

### Performance Standard AUTO.7.1 Demonstrate Knowledge of General Brake Systems

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.7.1.1 Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins. |  |
| CTE AUTO.7.1.2 Describe procedure for performing a road test to check brake system operation, including the anti‐lock brake system (ABS). |  |
| CTE AUTO.7.1.3 Demonstrate knowledge of basic hydraulic principles. |  |

### Performance Standard AUTO.7.2 Perform Hydraulic System Service and Repair

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.7.2.1 Measure brake pedal height, travel, and free play (as applicable); determine necessary action. |  |
| CTE AUTO.7.2.2 Check master cylinder for internal/external leaks and proper operation. |  |
| CTE AUTO.7.2.3 Inspect brake lines, flexible hoses, and fittings for leaks, dents, kinks, rust, cracks bulging, wear, loose fittings and support; determine necessary action. |  |
| CTE AUTO.7.2.4 Select, handle, store, and fill break fluids to proper level. |  |
| CTE AUTO.7.2.5 Identify components of brake warning light system. |  |
| CTE AUTO.7.2.6 Bleed and/or flush brake system. |  |
| CTE AUTO.7.2.7 Test brake fluid for contamination. |  |

### Performance Standard AUTO.7.3 Perform Drum Brake Service and Repair

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.7.3.1 Remove, clean, inspect, and measure brake drum diameter; determine necessary action. |  |
| CTE AUTO.7.3.2 Refinish brake drum and measure final drum diameter; compare with specifications. |  |
| CTE AUTO.7.3.3 Remove, clean, and inspect brake shoes, springs, pins, clips, levers, adjusters/self‐adjusters, other related brake hardware, and backing support plates; lubricate and reassemble. |  |
| CTE AUTO.7.3.4 Inspect wheel cylinders for leaks and proper operation; remove and replace as needed. |  |
| CTE AUTO.7.3.5 Readjust brake shoes and parking brake; install brake drums or drum/hub assemblies, wheel bearings; make final checks and adjustments. |  |
| CTE AUTO.7.3.6 Install wheel and torque lug nuts to proper specifications. |  |

### Performance Standard AUTO.7.4 Perform Disc Brake Service and Repair

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.7.4.1 Remove and clean caliper assembly; inspect for leaks and damage/wear to caliper housing; determine necessary action. |  |
| CTE AUTO.7.4.2 Clean, inspect and lubricate clipper mounting and slides/pins for proper operation wear, and damage; determine necessary action. |  |
| CTE AUTO.7.4.3 Remove, inspect and replace pads and retaining hardware; determine necessary action. |  |
| CTE AUTO.7.4.4 Lubricate and reinstall caliper, pads, and related hardware; seat pads and inspect for leaks. |  |
| CTE AUTO.7.4.5 Clean and inspect rotor, measure rotor thickness, thickness variation, and lateral run out; determine necessary action. |  |
| CTE AUTO.7.4.6 Remove and reinstall rotor. |  |
| CTE AUTO.7.4.7 Refinish rotor on vehicle; measure final rotor thickness and compare with specifications. |  |
| CTE AUTO.7.4.8 Refinish rotor off vehicle; measure final rotor thickness and compare with specifications. |  |
| CTE AUTO.7.4.9 Retract and readjust caliper piston on an integral parking brake system. |  |
| CTE AUTO.7.4.10 Check brake pad wear indicator; determine necessary action. |  |
| CTE AUTO.7.4.11 Describe importance of operating vehicle to burnish/break‐in replacement brake pads according to manufacturer's recommendations. |  |

### Performance Standard AUTO.7.5 Analyze Power Assist Units

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.7.5.1 Check brake pedal free‐travel with, and without, engine running to verify proper power booster operation. |  |
| CTE AUTO.7.5.2 Check vacuum supply (manifold or auxiliary pump) to vacuum‐type power booster. |  |
| CTE AUTO.7.5.3 Identify alternative power assist units. |  |

### Performance Standard AUTO.7.6 Perform Miscellaneous Service and Repair (Wheel Bearings, Parking Brakes, Electrical, etc.)

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.7.6.1 Remove, clean, inspect, repack, and install wheel bearings, races, seals; install hub and adjust bearings. |  |
| CTE AUTO.7.6.2 Check parking brake cables and components for wear, binding, and corrosion; clean, lubricate, adjust or replace as needed. |  |
| CTE AUTO.7.6.3 Check parking brake operation and parking brake indicator light system operation; determine necessary action. |  |
| CTE AUTO.7.6.4 Check operation of brake stop light system. |  |

## Standard AUTO.8.0: Analyze Electrical/Electronic Systems (A6)

### Performance Standard AUTO.8.1 Perform General Electronic Systems Service

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.8.1.1 Research applicable vehicle and service information vehicle service history, service precautions, and technical service bulletins. |  |
| CTE AUTO.8.1.2 Demonstrate knowledge of electrical/electronic series, parallel, and series-parallel circuits using principles of electricity (Ohm's and Watt's Law). |  |
| CTE AUTO.8.1.3 Use and interpret wiring diagrams to trace electrical/electronic circuits. |  |
| CTE AUTO.8.1.4 Demonstrate proper use of digital millimeter (DMM) when measuring source voltage, voltage drop (including grounds), current flow, and resistance. |  |
| CTE AUTO.8.1.5 Research the causes and effects from shorts, grounds, opens, and resistance problems in electrical/electronic circuits. |  |
| CTE AUTO.8.1.6 Check operations of electrical circuits with a test light. |  |
| CTE AUTO.8.1.7 Check operation of electrical circuits using fused jumper wires. |  |
| CTE AUTO.8.1.8 Measure key-off battery drain (parasitic draw). |  |
| CTE AUTO.8.1.9 Inspect and test fusible links, circuit breakers, and fuses; determine necessary action. |  |
| CTE AUTO.8.1.10 Perform solder repair of electrical wiring. |  |
| CTE AUTO.8.1.11 Replace electrical connectors and terminal ends. |  |

### Performance Standard AUTO.8.2 Perform Battery Service

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.8.2.1 Perform battery state-of-charge test; determine necessary action. |  |
| CTE AUTO.8.2.2 Confirm proper battery capacity for vehicle application; perform battery capacity test; determine necessary action. |  |
| CTE AUTO.8.2.3 Maintain or restore electronic memory functions. |  |
| CTE AUTO.8.2.4 Inspect and clean battery; fill battery cells, clean battery cables, connectors, clamps, and hold-downs. |  |
| CTE AUTO.8.2.5 Perform slow/fast battery charge according to manufacturer recommendations. |  |
| CTE AUTO.8.2.6 Jump‐start vehicle using jumper cables and a booster battery or an auxiliary power supply. |  |
| CTE AUTO.8.2.7 Identify high voltage circuits of electric or hybrid electric vehicle and related safety precautions. |  |
| CTE AUTO.8.2.8 Identify electronic modules, security systems, radios, and other accessories that require re-initialization or code entry after reconnecting vehicle battery. |  |

### Performance Standard AUTO.8.3 Perform Starting System Service and Repair

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.8.3.1 Perform starter current draw test; determine necessary action. |  |
| CTE AUTO.8.3.2 Perform starter circuit voltage drop tests; determine necessary action. |  |
| CTE AUTO.8.3.3 Inspect and test starter relays and solenoid; determine necessary action. |  |
| CTE AUTO.8.3.4 Remove and install starter in a vehicle. |  |
| CTE AUTO.8.3.5 Inspect and test switches, connectors, and wires of starter control circuits; determine necessary action. |  |

### Performance Standard AUTO.8.4 Perform Charging System Service and Repair

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.8.4.1 Perform charging system output test; determine necessary action. |  |
| CTE AUTO.8.4.2 Inspect, adjust, or replace generator (alternator) drive belts; check pulleys and tensioners for wear; check pulley and belt alignment. |  |
| CTE AUTO.8.4.3 Remove, inspect and reinstall generator (alternator). |  |
| CTE AUTO.8.4.4 Perform charging circuit voltage drop tests; determine necessary action. |  |

### Performance Standard AUTO.8.5 Perform Lighting Systems Service and Repair

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.8.5.1 Inspect interior and exterior lamps and sockets including headlights and auxiliary lights (fog lights/driving lights); replace as needed. |  |
| CTE AUTO.8.5.2 Aim headlights. |  |

### Performance Standard AUTO.8.6 Perform Accessories Service and Repair

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.8.6.1 Disable and enable the airbag system for vehicle service; verify indicator lamp operation. |  |
| CTE AUTO.8.6.2 Remove and reinstall door panel. |  |
| CTE AUTO.8.6.3 Describe the operation of keyless entry/remote‐start system. |  |
| CTE AUTO.8.6.4 Verify operation of instrument panel gauges and warning/indicator lights; reset maintenance indicators. |  |
| CTE AUTO.8.6.5 Verify windshield wiper and washer operation; replace wiper blades. |  |

## Standard AUTO.9.0: Analyze Heating and Air Conditioning Systems (A7)

### Performance Standard AUTO.9.1 Demonstrate Knowledge of A/C Systems

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.9.1.1 Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins. |  |
| CTE AUTO.9.1.2 Identify A/C components on a vehicle. |  |

### Performance Standard AUTO.9.2 Inspect Refrigeration System Components

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.9.2.1 Inspect and replace A/C compressor drive belts, pulleys, and tensioners; determine necessary action. |  |
| CTE AUTO.9.2.2 Research hybrid vehicle A/C system electrical circuits and the service/safety precautions. |  |
| CTE AUTO.9.2.3 Inspect A/C condenser for airflow restrictions; determine necessary action. |  |

### Performance Standard AUTO.9.3 Inspect Heating, Ventilation, and Engine Cooling Systems

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.9.3.1 Inspect engine cooling and heater system hoses; perform necessary action. |  |

### Performance Standard AUTO.9.4 Inspect Operating Systems and Related Controls

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.9.4.1 Inspect A/C‐heater ducts, doors, hoses, cabin filters, and outlets; perform necessary action. |  |
| CTE AUTO.9.4.2 Identify the source of A/C system odors. |  |

## Standard 10.0: Analyze Engine Performance (A8)

### Performance Standard AUTO.10.1 Perform General Engine Service

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.10.1.1 Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins. |  |
| CTE AUTO.10.1.2 Demonstrate knowledge of 4-stroke engine. |  |
| CTE AUTO.10.1.3 Perform engine absolute (vacuum) manifold pressure tests; determine necessary action.  |  |
| CTE AUTO.10.1.4 Perform cylinder cranking and running compressions tests; determine necessary action. |  |
| CTE AUTO.10.1.5 Perform cylinder leakage test; determine necessary action. |  |
| CTE AUTO.10.1.6 Verify engine operating temperature. |  |
| CTE AUTO.10.1.7 Remove and replace spark plugs; inspect secondary ignition components for wear and damage. |  |

### Performance Standard AUTO.10.2 Analyze Computerized Engine Controls

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.10.2.1 Retrieve and record diagnostic trouble codes, OBD monitor status, and freeze frame data; clear codes when applicable. |  |
| CTE AUTO.10.2.2 Describe the importance of operating all OBDII monitors for repair verification. |  |

### Performance Standard AUTO.10.3 Perform Fuel, Air Induction, and Exhaust Systems Service Repair

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.10.3.1 Replace fuel filter(s). |  |
| CTE AUTO.10.3.2 Inspect, service, or replace air filters, filter housing and intake duct work. |  |
| CTE AUTO.10.3.3 Inspect the integrity of the exhaust manifold, exhaust pipes, muffler(s), catalytic converter(s), resonator(s), tail pipe(s), and heat shields; determine necessary action. |  |
| CTE AUTO.10.3.4 Inspect condition of exhaust system hangers, brackets, clamps, and heat shields; repair or replace as needed. |  |
| CTE AUTO.10.3.5 Describe diesel exhaust fluid (DEF). |  |

### Performance Standard AUTO.10.4 Perform Emissions Control Systems Service and Repair

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE AUTO.10.4.1 Demonstrate knowledge of basic emission control components. |  |

# Indicators of quality Rubric:

Standards aligned and Integrated Curriculum:

| Standards | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| 1. The curriculum is based on industry-validated technical standards and competencies.
 |  |
| 1. The curriculum is aligned with relevant content and standards for core subjects, such as reading, math and science, including federal, state and/or local standards, as appropriate.
 |  |
| 1. The curriculum incorporates employability skill standards that help students succeed in the workplace, such as problem solving, critical thinking, teamwork, communications and workplace etiquette.
 |  |
| 1. The curriculum allows for student application of integrated knowledge and skills in authentic scenarios.
 |  |
| 1. Materials used reflect current workplace, industry and/or occupational practices and requirements.
 |  |

Access and Equity:

| Standards | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| 1. Materials are provided in a way that ensures all students have the opportunity to achieve success in the program of study, including by meeting Title IX, Americans with Disabilities Act and other accessibility requirements.
 |  |
| 1. Materials and assessments are free from bias, inclusive and non-discriminatory, and offered in a way that ensures all students have the opportunity to achieve success in the program of study.
 |  |
| 1. Contains guidance to support differentiated and culturally responsive (i.e., purposefully represents diverse cultures, linguistic backgrounds, learning styles and interests) instruction in the classroom so that every student’s need are addressed by including:
	1. Suggestions for how to promote equitable instruction by making connections to culture, home, neighborhood, and community as appropriate.
	2. Appropriate scaffolding, interventions, and supports, including integrated and appropriate reading, writing, listening, and speaking alternatives (e.g., translations, picture support, graphic organizers) that neither sacrifice content nor avoid language development for English language learners, special needs, or below grade level readers.
	3. Digital and print resources that provide various levels of readability.
	4. Modifications and extensions for all students, including those performing above their grade level, to deepen understanding of the content.
	5. Materials in multiple language formats.
 |  |

Student Focus:

| Standards | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| 1. The material supports the sequential and cumulative development of foundational skills and progresses in specificity to build students’ depth of knowledge and skills. Those skills are necessary for a student’s independent comprehension of grade-level complex texts and mastery of tasks called for by the standards.
 |  |
| 1. Content and standards within the program of study are non-duplicative and vertically aligned to prepare students to transition seamlessly to the next level of education.
 |  |
| 1. The material provides many and varied opportunities for students to work with each standard within the grade level.
 |  |
| 1. The material cross-refers and integrates other content areas.
 |  |
| 1. The material has a balance of text types and lengths that encourage close, in-depth reading and rereading, analysis, comparison, and synthesis of texts.
 |  |
| 1. The material includes sufficient supplementary activities or assignments that are appropriately integrated into the text.
 |  |
| 1. The material has activities and assignments that develop problem-solving skills and foster synthesis and inquiry at both an individual and group level.
 |  |
| 1. The material has activities and assignments that reflect varied learning styles of students.
 |  |
| 1. The material includes appropriate instructional strategies.
 |  |
| 1. Project-based learning and related instructional approaches, such as problem-based, inquiry-based and challenge-based learning, are fully integrated into the material.
 |  |

Pedagogical Approach:

| Standards | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| 1. Provides guidance for teachers throughout for how learning experiences build on each other to support students in developing a deep understanding of the content.
 |  |
| 1. Provides scaffolded supports for teachers to facilitate learning of the content so that students are increasingly responsible for making sense of the content.
 |  |
| 1. The material provides opportunities for supporting English language learners to regularly and actively participate with grade-level text.
 |  |
| 1. The material gives clear and concise instruction to teachers and students. It is easy to navigate and understand.
 |  |
| 1. Includes appropriate academic and content-specific vocabulary in the context of the learning experience that is accessible, introduced, reinforced, reviewed, and augmented with visual representations when appropriate.
 |  |
| 1. Allows teachers to access, revise, and print form digital resources (e.g., readings, labs, assessments, rubrics).
 |  |
| 1. Uses varied modes (selected, constructed, project-based, extended response, and performance tasks) of instruction-embedded pre-, formative, summative, peer, and, self-assessment measures of learning.
 |  |
| 1. Includes editable and aligned rubrics, scoring guidelines, and exemplars that provide guidance for assessing student performance and to support teachers in planning instruction and providing ongoing feedback to students.
 |  |
| 1. Provides multiple opportunities for students to demonstrate and receive feedback on performance of practices connected with their understanding of concepts.
 |  |

Presentation and Design:

| Standards | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| 1. The material has an aesthetically appealing appearance.
 |  |
| 1. Digital and print materials are consistently formatted, visually focused, and uncluttered for efficient use.
 |  |
| 1. The material has a reasonable and appropriate balance between text and illustration. The material has grade-appropriate font size.
 |  |
| 1. The illustrations clearly cross-reference the text, are directly relevant to the content (not simply decorative), and promote thinking, discussion, and problem solving.
 |  |
| 1. Non-text content (performance clips, images, maps, globes, graphs, pictures, charts, databases, and models) are accurate and well integrated into the text.
 |  |

Technology:

| Standards | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| 1. Technology and digital media support, extend, and enhance learning experiences.
 |  |
| 1. The material has “platform neutral” technology (i.e., cloud based) and availability for networking.
 |  |
| 1. The material has a user-friendly and interactive interface allowing the user to control (shift among activities).
 |  |

For Questions Contact

Content & Curriculum

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1. [Idaho T&I Automotive Technology Program Standards](https://cte.idaho.gov/wp-content/uploads/2016/01/Automotive_Technology_Foundational_Standards-1.pdf) [↑](#footnote-ref-1)