

Maine Department of Education
Career and Technical Education
CTE Intersections with College and Career Readiness Standards-English Language Arts
with
Automotive Mechanics Technology; CIP: 47.0604
Maintenance and Light Repair-MLR (NATEF)

Maintenance and Light Repair (MLR) Duties, Skills, and Tasks	English Language Arts Standards	Criteria for Demonstration of Proficiency (possible; to be determined at the local level)
Shop and Personal Safety (required supplemental tasks)		
<ul style="list-style-type: none"> a. Identify general shop safety rules and procedures. b. Utilize safe procedures for handling of tools and equipment. c. Identify and use proper placement of floor jacks and jack stands. d. Identify and use proper procedures for safe lift operation. e. Utilize proper ventilation procedures for working within the lab/shop area. f. Identify marked safety areas. g. 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 fire safety equipment. h. Identify the location and use of eye wash stations. i. Identify the location of the posted evacuation routes. j. Comply with the required use of safety glasses, ear protection, gloves, and shoes during lab/shop activities. k. Identify and wear appropriate clothing for lab/shop activities. l. Secure hair and jewelry for lab/shop activities. m. Demonstrate awareness of the safety aspects of supplemental restraint systems (SRS), electronic brake control systems, and hybrid vehicle high voltage circuits. n. Demonstrate awareness of the safety aspects of high voltage circuits (such as high intensity discharge (HID) lamps, ignition systems, injection systems, etc.). o. Locate and demonstrate knowledge of material safety data sheets (MSDS). 	<p>RST.3.11-12 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</p> <p>RST.4.11-12 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.</p> <p>RST.7.11-12 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem</p> <p>WHST.9.11-12 Draw evidence from informational texts to support analysis, reflection and research.</p> <p>SL.2.11-12 Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.</p>	<p>Demonstration includes:</p> <p>Understanding of industry/shop safety rules and proper safety procedures, symbols and key terms and the ability to maintain learned safety standards daily throughout the entirety of the course.</p> <p>Applying industry/shop safety rules and proper safety procedures, symbols and key terms and the ability to maintain learned safety standards daily throughout the entirety of the course.</p> <p>Analyze importance of following industry/shop safety rules and proper safety procedures, symbols and key terms and the ability to maintain learned safety standards daily throughout the entirety of the course.</p>

Tools and Equipment (required supplemental tasks)		
<p>a. Identify tools and their usage in automotive applications.</p> <p>b. Identify standard and metric designation.</p> <p>c. Demonstrate safe handling and use of appropriate tools.</p> <p>d. Demonstrate proper cleaning, storage, and maintenance of tools and equipment.</p> <p>e. Demonstrate proper use of precision measuring tools (i.e. micrometer, dial-indicator, dial-caliper).</p>	<p>RST.3.11-12 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</p>	<p>Identify and understand the proper use and maintenance of industry tools.</p>
	<p>RST.4.11-12 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.</p>	<p>Apply the proper use and maintenance of industry tools.</p>
	<p>RST.7.11-12 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.</p>	<p>Analyze outcomes of improper tool use.</p>
	<p>WHST.9.11-12 Draw evidence from informational texts to support analysis, reflection and research.</p>	
	<p>SL.2.11-12 Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.</p>	

Preparing Vehicle for Service		
<p>a. Locate and use paper and electronic service information.b. Locate and use Technical Service Bulletins (TSBs).c. Demonstrate awareness of special service messages, service campaigns/recalls, vehicle/service warranty applications, and service interval recommendations.d. Vehicle identification information. Locate Vehicle Identification Number (VIN) and production date code.f. Apply knowledge of Vehicle Identification Number (VIN) information.g. Demonstrate awareness of other vehicle information labels (such as tire, emissions, etc.).h. Identify information needed and the service requested on a repair order.i. Identify purpose and demonstrate proper use of fender covers, mats.j. Demonstrate use of the three C's (concern, cause, and correction).k. Review vehicle service history.l. Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction.</p>	<p>RST.3.11-12 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</p> <p>RST.4.11-12 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.</p> <p>RST.5.11-12 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.7.11-12 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem</p> <p>WHST.2.11-12 A-D Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.4.11-12 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> <p>SL.1.11-12 Initiate and participate effectively in a range of collaborative discussions (one on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.</p>	<p>Demonstration includes:</p> <p>Locating service information from multiple sources (i.e. internet sources, service manuals, etc.).</p> <p>Verifying and analyzing service information from multiple sources of media in order to gather the most complete and relevant information needed for diagnostic purposes.</p> <p>Completing work order containing vehicle information, concern, cause, and correction written to industry standards.</p>

Preparing Vehicle for Customer		
<p>a. Ensure vehicle is prepared to return to customer per school/company policy (floor mats, steering wheel cover, etc.).</p> <p>b. Provide basic vehicle service:</p> <ul style="list-style-type: none"> • Determine fluid type requirements and identify fluid. • Check and adjust engine oil level. • Check and adjust engine coolant level. • Check and adjust power steering fluid level. • Check and adjust brake fluid level. • Check and adjust windshield washer fluid level. • Check and adjust differential/transfer case fluid level. • Check and adjust transmission fluid level. • Check and replace wiper blades. • Inspect, replace, and adjust drive belts, tensioners, and pulleys; check pulley and belt alignment. • Inspect and replace air filter. • Check and adjust tire air pressure. • Inspect exhaust system components. 	<p>RST.3.11-12 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</p> <p>RST.7.11-12 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem</p>	<p>Demonstration includes:</p> <p>Following a multistep procedure to check fluid levels and inspect for basic routine maintenance and address any deficiency.</p> <ul style="list-style-type: none"> - follow service procedure by checklist - live work - lab work

<p>c. Perform engine repair</p> <ul style="list-style-type: none"> • Demonstrate knowledge of four-cycle engine operation. • Inspect engine assembly for fuel, oil, coolant, and other leaks; determine necessary action. • Perform cooling system pressure tests; test coolant condition; inspect and test radiator, pressure cap, coolant recovery tank, and hoses; perform necessary action. • Test cooling system for the presence of combustion gases. • Drain and recover coolant; flush and refill cooling system with recommended coolant; bleed air as required. • Perform oil and filter change; reset oil life monitoring system where applicable. • Remove and replace radiator; replace radiator hoses. • Inspect power-train mounts; determine necessary action. 	<p>RST.3.11-12 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</p> <p>RST.2.11-12 Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.</p> <p>RST.7.11-12 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem</p> <p>RST.9.11-12 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>SL.1.11-12 Initiate and participate effectively in a range of collaborative discussions (one on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.</p> <p>SL.4.11-12 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range or formal and informal tasks.</p>	<p>Demonstration includes:</p> <p>Understanding functional concepts of different systems within engines.</p> <p>Analyzing inspection or testing results.</p> <p>-testing, labs</p> <p>-discussion/articulation</p>
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<p>d. Check automatic transmission: Perform visual inspection of transmission; replace fluid and filters.</p> <p>e. Check manual drive train and axles.</p> <ul style="list-style-type: none"> • Diagnose fluid loss, level, and condition concerns; determine necessary action. • Drain and fill transmission/transaxle and final drive unit. • Identify and inspect clutch pedal linkage, cables, automatic adjuster mechanisms, brackets, bushings, pivots, and springs; determine necessary action. • Identify and inspect hydraulic clutch slave and master cylinders, lines, and hoses; determine necessary action. • Bleed clutch hydraulic system. • Inspect and replace wheel studs and lug nuts. • Inspect constant velocity (CV) joint boots. • Remove and replace rear wheel drive driveshaft. 	<p>RST.3.11-12 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</p> <p>RST.2.11-12 Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.</p> <p>RST.7.11-12 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem</p> <p>RST.8.11-12 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.</p> <p>RST.9.11-12 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>SL.1.11-12 Initiate and participate effectively in a range of collaborative discussions (one on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.</p> <p>SL.4.11-12 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range or formal and informal tasks.</p>	<p>Demonstration includes:</p> <p>Understanding functional concepts of different systems within the transmission both automatic and manual.</p> <p>Analyzing inspection or testing results and determine necessary action.</p> <p>-testing, labs</p> <p>-discussion/articulation</p>
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<p>f. Check suspension and steering</p> <ul style="list-style-type: none"> • Identify and interpret suspension and steering system concerns; determine necessary action. • Determine proper power steering fluid type; inspect fluid levels and condition. • Flush, fill, and bleed power steering system. • Diagnose power steering fluid leakage; determine necessary action. • Lubricate suspension and steering systems. • Inspect, remove, and replace shock absorbers. • Inspect, remove, and install stabilizer bar bushings, brackets, and links. • Inspect, remove, and install strut cartridge or assembly, strut coil spring, insulators (silencers), and upper strut bearing mount. • Perform pre-alignment inspection and measure vehicle ride height; determine necessary action. • Demonstrate knowledge of the principals of steering geometry using caster, camber and toe. • Inspect tires; identify abnormal tire wear patterns; determine necessary action. • Demonstrate knowledge of the causes of wheel tire vibration, shimmy, and noise. • Identify vehicles equipped with a tire pressure monitoring system (TPMS). • Demonstrate knowledge of service considerations of vehicles equipped with a tire pressure monitoring system (TPMS). • Rotate tires according to manufacturer's recommendations. • Balance wheel and tire assembly. • Dismount, inspect, and remount tire on wheel. • Repair tire using internal patch. • Reinstall wheel; torque lug nuts. 	<p>RST.11-12.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</p> <p>RST.7.11-12 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem</p> <p>RST.9.11-12 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>SL.1.11-12 Initiate and participate effectively in a range of collaborative discussions (one on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.</p> <p>SL.4.11-12 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range or formal and informal tasks.</p>	<p>Demonstration includes:</p> <p>Understanding functional concepts of suspension and steering.</p> <p>Understanding functional concepts of alignment principles.</p> <p>Analyzing inspection or testing results.</p> <p>-testing, labs</p> <p>-discussion/articulation</p>
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<p>g. Check brakes</p> <ul style="list-style-type: none"> • Inspect brake lines, flexible hoses, and fittings for leaks, dents, kinks, rust, cracks, bulging or wear; tighten loose fittings and supports; determine necessary action. • Select, handle, store, and fill brake fluids to proper level. • Bleed brake system. • Test brake fluid for contamination; determine necessary action. <p>Remove, clean, inspect, and measure brake drums; determine necessary action.</p> <ul style="list-style-type: none"> • Refinish brake drum; measure final drum diameter. • Remove, clean, and inspect brake shoes, springs, pins, clips, levers, adjusters/self-adjusters, other related brake hardware, and backing support plates; lubricate and reassemble. • Inspect and install wheel cylinders. • Pre-adjust brake shoes and parking brake; install brake drums or drum/hub assemblies and wheel bearings. • Install wheel, torque lug nuts, and make final checks and adjustments. • Remove caliper assembly; inspect for leaks and damage to caliper housing; determine necessary action. • Clean and inspect caliper mounting and slides/pins for wear, operation, and damage; determine necessary action. • Remove, inspect and replace pads and retaining hardware; determine necessary action. • Reassemble, lubricate, and reinstall caliper, pads, and related hardware; seat pads, and inspect for leaks. • Clean, inspect, and measure rotor thickness, lateral run-out and thickness variation; determine necessary action. • Remove and reinstall rotor. • Refinish rotor on vehicle; measure final rotor thickness. • Refinish rotor off vehicle; measure final rotor thickness. • Install wheel, torque lug nuts, and make final checks and adjustments. • Check vacuum supply (manifold or auxiliary pump) to vacuum-type power booster. • Inspect vacuum-type power booster unit for leaks; inspect the check valve for proper operation; verify proper booster function. • Demonstrate knowledge of the causes of wheel bearing noises, wheel shimmy, and vibration concerns. • Check parking brake cables and components for wear, binding, and corrosion; clean, lubricate, adjust or replace 	<p>RST.7.11-12 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem</p> <p>RST.8.11-12 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.</p> <p>RST.9.11-12 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>SL.1.11-12 Initiate and participate effectively in a range of collaborative discussions (one on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.</p> <p>SL.4.11-12 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range or formal and informal tasks</p> <p>RST.3.11-12.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</p> <p>RST.2.11-12 Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.</p>	<p>Demonstration includes:</p> <p>Understanding functional concepts of braking systems.</p> <p>Analyzing inspection or testing results to determine necessary actions.</p> <p>Applying braking fundamentals to make informed decisions based on course content.</p> <p>-testing, labs</p> <p>-discussion/articulation</p>
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as needed.

- Check parking brake and indicator light system operation; determine necessary action.
- Check operation of brake stop light system; determine necessary action.
- Replace tapered roller wheel bearing and race.
- Clean, inspect, lubricate, install and adjust wheel bearing.
- Identify and inspect electronic brake control system components; determine necessary action.
- Demonstrate knowledge of the operation of the brake hydraulic failure warning light.

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<p>h. Check electrical/electronic systems</p> <ul style="list-style-type: none"> • Demonstrate knowledge of the operation of series, parallel and series-parallel circuits using principles of electricity (Ohm's Law). • Use wiring diagrams during diagnosis of electrical circuit problems. • Demonstrate the proper use of a digital multi-meter (DMM) during diagnosis of electrical circuit problems, including source voltage, voltage drop, current flow and resistance. • Check electrical circuits with a test light; determine necessary action. • Check electrical circuits using fused jumper wires; determine necessary action. • Demonstrate knowledge of the causes and effects of shorts, grounds, opens, and resistance problems in electrical/electronic circuits. • Measure key-off battery drain (parasitic draw); determine necessary action. • Inspect and test fusible links, circuit breakers, and fuses; determine necessary action. • Inspect and test switches, connectors, relays, and wires of electrical/electronic circuits. • Repair connectors and terminal ends. • Perform solder repair of electrical wiring. • Perform battery state-of-charge test; determine necessary action. • Perform battery capacity test; confirm proper battery capacity for vehicle application; determine necessary action. • Maintain or restore electronic memory functions. • Inspect, clean, fill, and/or replace battery, battery cables, connectors, clamps, and hold-downs. • Perform battery charge. • Start a vehicle using jumper cables or an auxiliary power supply. • Perform starter current draw tests; determine necessary action. • Perform starter circuit voltage drop tests; determine necessary action. 	<p>RST.2.11-12 Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.</p> <p>RST.4.11-12 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.</p> <p>RST.7.11-12 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem</p> <p>RST.8.11-12 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.</p> <p>RST.9.11-12 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>SL.1.11-12 Initiate and participate effectively in a range of collaborative discussions (one on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.</p> <p>SL.4.11-12 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range or formal and informal tasks</p>	<p>Demonstration includes:</p> <p>Understanding basic principles of electricity.</p> <p>Understanding differences in electrical circuits.</p> <p>Understanding electrical faults.</p> <p>Identifying electrical components in symbols and diagrams.</p> <p>Understanding how a multimeter functions.</p>
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<p>i. Check heating and air conditioning</p> <ul style="list-style-type: none"> • Identify and visually inspect A/C system components. • Locate refrigerant label and identify specified refrigerant type (e.g., R-12, R-134a). • Conduct preliminary performance test of A/C system (i.e., verify compressor engagement, measure outlet duct temperature, sense temperature change across A/C components); determine necessary action. • Identify refrigerant type; select and connect proper gauge set; record temperature and pressure readings. • Conduct performance test of the heater/ventilation system. • Inspect and replace cabin air filter. • Perform cylinder leakage test; determine necessary action. • Verify engine operating temperature; determine necessary action. • Prepare 4 or 5 gas analyzer; inspect and prepare vehicle for test and obtain exhaust readings; determine necessary action. • Retrieve and record stored diagnostic trouble codes, OBD monitor status, and freeze frame data; clear codes when applicable. • Obtain and interpret scan tool data. • Perform fuel pressure test. • Replace fuel filters. • Remove and replace secondary ignition components. • Remove and replace thermostat and gasket/seal. • Perform common fastener and thread repair, to include: remove broken bolt, restore internal and external threads, and repair internal threads with a threaded insert. • Perform cylinder power balance test; determine necessary action. • Perform cylinder cranking compression test; determine necessary action. • Perform cylinder leakage test; determine necessary action. • Verify engine operating temperature; determine necessary action. 	<p>RST.2.11-12 Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.</p> <p>RST.3.11-12 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</p> <p>RST.4.11-12 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics</p> <p>RST.7.11-12 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.</p> <p>RST.8.11-12 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.</p> <p>RST.9.11-12 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>SL.1.11-12 Initiate and participate effectively in a range of collaborative discussions (one on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.</p> <p>SL.4.11-12 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.</p>	<p>Demonstration includes:</p> <p>Identifying different components within the HVAC system.</p>
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<p>j. Check engine performance</p> <ul style="list-style-type: none"> • Perform engine cranking and running vacuum tests; determine necessary action. • Perform cylinder power balance test; determine necessary action. • Perform cylinder cranking compression test; determine necessary action. • Prepare 4 or 5 gas analyzer; inspect and prepare vehicle for test and obtain exhaust readings; determine necessary action. • Retrieve and record stored diagnostic trouble codes, OBD monitor status, and freeze frame data; clear codes when applicable. • Obtain and interpret scan tool data. • Perform fuel pressure test. • Replace fuel filters. • Remove and replace secondary ignition components. • Remove and replace thermostat and gasket/seal. • Perform common fastener and thread repair, to include: remove broken bolt, restore internal and external threads, and repair internal threads with a threaded insert. 	<p>RST.2.11-12 Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.</p> <p>RST.4.11-12 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics</p> <p>RST.7.11-12 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.</p> <p>RST.8.11-12 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.</p> <p>RST.9.11-12 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>SL.1.11-12 Initiate and participate effectively in a range of collaborative discussions (one on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.</p> <p>SL.4.11-12 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range or formal and informal tasks</p> <p>WHST.4.11-12 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> <p>WHST.9.11-12 Draw evidence from informational texts to support analysis, reflection, and research.</p>	
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