



Automobile Mechanics Technology/Technician, Classification of Instructional Program (CIP) 47.0604

Units of Instruction and Task Grid Linked to Pennsylvania Core Standards

Secondary Competency Task List with Unit and Task Numbers:	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.0
100 ORIENTATION.	<p>CAREER CLUSTER: Transportation, Distribution and Logistics (Choose Standards) 1-2-3-4-5-6</p> <p>PATHWAYS INCLUDE Facility and Mobile Equipment Maintenance Career Pathway (Choose Standards) 1-2</p> <p>NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local Occupational Area.</p>	<p>KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc.</p> <p>CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F Analyze the author’s purpose in providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a text.</p>		
<p>101 Explain and follow all lab rules.</p> <p>102 Participate in basic shop management.</p> <p>103 Participate in parts ordering.</p> <p>104 Demonstrate auto shop safety and hygiene.</p> <p>105 Demonstrate the use of service information.</p> <p>106 Demonstrate proper telephone courtesy.</p> <p>107 Identify vehicle by: sight, V.I.N. and/or ID tag.</p> <p>108 Identify career paths within the career and technical education program.</p>				

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		<p>INTEGRATE KNOWLEDGE & IDEAS GRADES 9-10 Standard CC.3.5.9-10.G Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). Standard CC.3.5.9-10. H Assess the reasoning in a text to support the author’s claim for solving a technical problem. Standard CC.3.5.9-10. I Compare and contrast findings presented in a text to those from other sources, etc.</p> <p>INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem. Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding.</p> <p>RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>		

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200 SAFETY.				
<p>201 Identify and follow all safety rules.</p> <p>202 Demonstrate the ability to secure vehicles on jack stands and hydraulic lifts.</p> <p>203 Demonstrate the ability to safely set up/shut down oxygen acetylene welding equipment.</p> <p>204 Identify chemical safety, "Right To Know Laws" and Materials Safety Data Sheets (MSDS).</p> <p>205 Identify and demonstrate the safe use of hand tools.</p> <p>206 Identify and demonstrate the safe use of power tools.</p> <p>207 Identify and demonstrate the safe use of protective clothing and equipment.</p> <p>208 Identify and demonstrate the safe use of fire protection equipment.</p> <p>209 Identify and demonstrate the safe use of shop equipment.</p> <p>210 Explain EPA and OSHA Regulations.</p>	<p>CAREER CLUSTER: Transportation, Distribution and Logistics (Choose Standards) 1-2-3-4-5-6</p> <p>PATHWAYS INCLUDE Facility and Mobile Equipment Maintenance Career Pathway (Choose Standards) 1-2</p> <p>NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local Occupational Area.</p>	<p>KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc.</p> <p>CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain-specific words. Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a text.</p> <p>INTEGRATE KNOWLEDGE & IDEAS GRADES 9-10</p>		<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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		<p>Standard CC.3.5.9-10.G Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).</p> <p>Standard CC.3.5.9-10. H Assess the reasoning in a text to support the author’s claim for solving a technical problem.</p> <p>Standard CC.3.5.9-10. I Compare and contrast findings presented in a text to those from other sources, etc.</p> <p>INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12</p> <p>Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.</p> <p>Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.</p> <p>Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding.</p> <p>RANGE OF READING GRADES 9-10-11-12</p> <p>Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>		
300 TOOLS/FASTENERS.				
	<u>CAREER CLUSTER:</u> Transportation,	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A		NUMBERS AND OPERATIONS

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<p>301 Identify and use fasteners and bolts.</p> <p>302 Demonstrate the ability to correctly drill and use rethreading tools.</p> <p>303 Demonstrate the ability to correctly read and interpret precision automotive measuring tools.</p> <p>304 Demonstrate the ability to correctly use automotive tools.</p> <p>305 Perform common fastener and thread repairs, to include: remove broken bolt, restore internal and external threads, and repair internal threads with a threaded insert.</p>	<p>Distribution and Logistics (Choose Standards) 1-2-3-4-5-6</p> <p>PATHWAYS INCLUDE Facility and Mobile Equipment Maintenance Career Pathway (Choose Standards) 1-2</p> <p>NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local Occupational Area.</p>	<p>Standard CC.3.5.11-12 A Cite specific textual evidence, etc.</p> <p>Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc.</p> <p>Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc.</p> <p>CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain-specific words.</p> <p>Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc.</p> <p>Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F Analyze the author’s purpose in providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a text.</p> <p>INTEGRATE KNOWLEDGE & IDEAS GRADES 9-10 Standard CC.3.5.9-10.G Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).</p> <p>Standard CC.3.5.9-10. H</p>		<p>Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p>Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems.</p> <p>Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p>Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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		<p>Assess the reasoning in a text to support the author’s claim for solving a technical problem. Standard CC.3.5.9-10. I Compare and contrast findings presented in a text to those from other sources, etc.</p> <p>INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem. Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding.</p> <p>RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>		
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400 CERTIFICATIONS.				
401 Prepare to obtain Pennsylvania Safety Inspection Certification. 402 Prepare to obtain EPA 609 Refrigerant	<u>CAREER CLUSTER:</u> Transportation, Distribution and Logistics (Choose Standards) 1-2-3-4-5-6	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content.	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or

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<p>Recovery, Recycling Certification.</p> <p>403 Prepare to obtain Emission Inspection Certification.</p>	<p>PATHWAYS INCLUDE Facility and Mobile Equipment Maintenance Career Pathway (Choose Standards) 1-2</p> <p>NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local Occupational Area.</p>	<p>Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc.</p> <p>CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain-specific words. Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F Analyze the author’s purpose in providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a text.</p> <p>INTEGRATE KNOWLEDGE & IDEAS GRADES 9-10 Standard CC.3.5.9-10.G Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). Standard CC.3.5.9-10. H Assess the reasoning in a text to support the author’s claim for solving a technical problem. Standard CC.3.5.9-10. I</p>	<p>Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D Produce clear and coherent writing...appropriate to task, purpose, and audience. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E. Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p>RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F Conduct short and more sustained research to answer a question or solve a problem. Standard CC.3.6.9-10.G.</p>	<p>mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p>GEOMETRY Standard 2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles. Standard 2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. Standard 2.3.HS.A.13 Analyze relationships between two dimensional and three dimensional objects.</p>

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500 SUSPENSION AND STEERING.				
<p>501 Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction.</p> <p>502 Identify and interpret suspension and steering system concerns; determine necessary action.</p> <p>503 Research applicable vehicle and service information,</p>	<p><u>CAREER CLUSTER:</u> Transportation, Distribution and Logistics (Choose Standards) 1-2-3-4-5-6</p> <p>PATHWAYS INCLUDE</p>	<p>KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to</p>

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<p>such as suspension and steering system operation, vehicle service history, service precautions, and technical service bulletins.</p> <p>504 Locate and interpret vehicle and major component identification numbers.</p> <p>505 Disable and enable supplemental restraint system (SRS).</p> <p>506 Remove and replace steering wheel; center/time supplemental restraint system (SRS) coil (clock spring).</p> <p>507 Remove and replace rack and pinion steering gear; inspect mounting bushings and brackets.</p> <p>508 Inspect and replace rack and pinion steering gear inner tie rod ends (sockets) and bellows boots.</p> <p>509 Determine proper power steering fluid type; inspect fluid level and condition.</p> <p>510 Flush, fill, and bleed power steering system.</p> <p>511 Diagnose power steering fluid leakage; determine necessary action.</p> <p>512 Remove, inspect, replace, and adjust power steering pump belt.</p> <p>513 Remove and reinstall power steering pump.</p> <p>514 Remove and reinstall press fit power steering pump pulley; check pulley and belt alignment.</p> <p>515 Inspect and replace power steering hoses and fittings.</p> <p>516 Inspect and replace pitman arm, relay (centerlink/intermediate) rod, idler arm and mountings, and steering linkage damper.</p> <p>517 Inspect, replace, and adjust tie rod ends (sockets), tie rod sleeves, and clamps.</p> <p>518 Inspect and test electric power assist steering.</p> <p>519 Remove, inspect, and install upper and lower control arms, bushings, shafts, and rebound bumpers.</p> <p>520 Remove, inspect and install strut rods and bushings.</p>	<p>Facility and Mobile Equipment Maintenance Career Pathway (Choose Standards) 1-2</p> <p>NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local Occupational Area.</p>	<p>Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc.</p> <p>CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10.D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain-specific words.</p> <p>Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc.</p> <p>Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F Analyze the author’s purpose in providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a text.</p> <p>INTEGRATE KNOWLEDGE & IDEAS GRADES 9-10 Standard CC.3.5.9-10.G Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).</p> <p>Standard CC.3.5.9-10.H Assess the reasoning in a text to support the author’s claim for solving a technical problem.</p> <p>Standard CC.3.5.9-10.I Compare and contrast findings presented in a text to those from other sources, etc.</p>	<p>explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12.C Produce clear and coherent writing...appropriate to task, purpose, and audience.</p> <p>Standard CC.3.6.9-10.D Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p> <p>Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E. Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p>RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F Conduct short and more sustained research to answer a question or solve a problem.</p> <p>Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G Gather relevant information from multiple authoritative</p>	<p>understand problems and to guide the solution of multistep problems.</p> <p>Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p>Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p>GEOMETRY Standard 2.3.HS.A.13 Analyze relationships between two dimensional and three dimensional objects.</p>

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<p>521 Remove, inspect, and install upper and/or lower ball joints.</p> <p>522 Remove, inspect, and install steering knuckle assemblies.</p> <p>523 Remove, inspect, and install short and long arm suspension system coil springs and spring insulators.</p> <p>524 Remove, inspect, install, and adjust suspension system torsion bars; inspect mounts.</p> <p>525 Remove, inspect, and install stabilizer bar bushings, brackets, and links.</p> <p>526 Remove, inspect, and install strut cartridge or assembly, strut coil spring, insulators (silencers), and upper strut bearing mount.</p> <p>527 Inspect, remove, and replace shock absorbers.</p> <p>528 Remove, inspect, and service or replace front and rear wheel bearings.</p> <p>529 Lubricate suspension and steering systems.</p> <p>530 Perform pre-alignment inspection and measure vehicle ride height; perform necessary action.</p> <p>531 Prepare vehicle for wheel alignment on the alignment machine; perform four wheel alignment by checking and adjusting front and rear wheel caster, camber; and toe as required; center steering wheel.</p> <p>532 Check SAI (steering axis inclination) and included angle; determine necessary action.</p> <p>533 Check rear wheel thrust angle; determine necessary action.</p> <p>534 Check for front wheel setback; determine necessary action.</p> <p>535 Check front and/or rear cradle (subframe) alignment; determine necessary action.</p> <p>536 Inspect tire condition; identify tire wear patterns; check and adjust air pressure; determine necessary action.</p>		<p>INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.</p> <p>Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.</p> <p>Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding.</p> <p>RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>print and digital sources, following a standard format for citation.</p> <p>Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H. Draw evidence from informational texts to support analysis, reflection, and research.</p> <p>RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	

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537 Diagnose wheel/tire vibration, shimmy, and noise; determine necessary action. 538 Rotate tires according to manufacturer's recommendations. 539 Measure wheel, tire, axle flange, and hub runout; determine necessary action. 540 Diagnose tire pull problems; determine necessary action. 541 Dismount, inspect, and remount tire on wheel; Balance wheel and tire assembly (static and dynamic). 542 Dismount, inspect, and remount tire on wheel equipped with tire pressure monitoring system sensor. 543 Reinstall wheel; torque lug nuts. 544 Inspect tire and wheel assembly for air loss; perform necessary action. 545 Repair tire using internal patch.				

600 BRAKES.				
601 Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction. 602 Identify and interpret brake system concern; determine necessary action. 603 Research applicable vehicle and service information, such as brake system operation, vehicle service history, service precautions, and technical service bulletins. 604 Locate and interpret vehicle and major component identification numbers. 605 Measure brake pedal height, travel, and free play (as	<p><u>CAREER CLUSTER:</u> Transportation, Distribution and Logistics (Choose Standards) 1-2-3-4-5-6</p> <p>PATHWAYS INCLUDE Facility and Mobile Equipment Maintenance Career Pathway (Choose Standards) 1-2</p>	<p>KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p>

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Units of Instruction and Task Grid Linked to Pennsylvania Core Standards

Secondary Competency Task List with Unit and Task Numbers:	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.0
<p>applicable); determine necessary action.</p> <p>606 Check master cylinder for internal/external leaks and proper operation; determine necessary action.</p> <p>607 Remove, bench bleed, and reinstall master cylinder.</p> <p>608 Inspect brake lines, flexible hoses, and fittings for leaks, dents, kinks, rust, cracks, bulging or wear; tighten loose fittings and supports; determine necessary action.</p> <p>609 Replace brake lines, hoses, fittings, and supports.</p> <p>610 Fabricate brake lines using proper material and flaring procedures (double flare and ISO types).</p> <p>611 Select, handle, store, and fill brake fluids to proper level.</p> <p>612 Inspect, test, and/or replace components of brake warning light system.</p> <p>613 Bleed and/or flush brake system.</p> <p>614 Diagnose poor stopping, noise, vibration, pulling, grabbing, dragging or pedal pulsation concerns; determine necessary action.</p> <p>615 Remove, clean, inspect, and measure brake drums; determine necessary action.</p> <p>616 Refinish brake drum; measure final drum diameter.</p> <p>617 Remove, clean, and inspect brake shoes, springs, pins, clips, levers, adjusters/self-adjusters, other related brake hardware, and backing support plates; lubricate and reassemble.</p> <p>618 Inspect and install wheel cylinders.</p> <p>619 Pre-adjust brake shoes and parking brake; install brake drums or drum/hub assemblies and wheel bearings.</p> <p>620 Install wheel, torque lug nuts, and make final checks and adjustments.</p> <p>621 Diagnose poor stopping, noise, vibration, pulling, grabbing, dragging or pulsation concerns; determine</p>	<p>NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local Occupational Area.</p>	<p>Determine the meaning of symbols, key terms, and other domain-specific words.</p> <p>Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc.</p> <p>Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F Analyze the author’s purpose in providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a text.</p> <p>INTEGRATE KNOWLEDGE & IDEAS GRADES 9-10 Standard CC.3.5.9-10.G Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). Standard CC.3.5.9-10. H Assess the reasoning in a text to support the author’s claim for solving a technical problem. Standard CC.3.5.9-10. I Compare and contrast findings presented in a text to those from other sources, etc.</p> <p>INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem. Standard CC.3.5.11-12. H</p>	<p>Standard CC.3.6.11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E. Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p>RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F Conduct short and more sustained research to answer a question or solve a problem. Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H. Draw evidence from informational texts to support analysis, reflection, and research.</p>	<p>Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p>GEOMETRY Standard 2.3.HS.A.13 Analyze relationships between two dimensional and three dimensional objects.</p>

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Units of Instruction and Task Grid Linked to Pennsylvania Core Standards

Secondary Competency Task List with Unit and Task Numbers:	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.0
<p>necessary action.</p> <p>622 Remove caliper assembly; inspect for leaks and damage to caliper housing; determine necessary action.</p> <p>623 Clean and inspect caliper mounting and slides/pins for operation, wear, and damage; determine necessary action.</p> <p>624 Reassemble, lubricate, and reinstall caliper, pads, and related hardware; seat pads, and inspect for leaks.</p> <p>625 Clean, inspect, and measure rotor thickness, lateral runout, and thickness variation; determine necessary action.</p> <p>626 Remove and reinstall rotor.</p> <p>627 Refinish rotor on vehicle; measure final rotor thickness.</p> <p>628 Refinish rotor off vehicle; measure final rotor thickness.</p> <p>629 Install wheel, torque lug nuts, and make final checks and adjustments.</p> <p>630 Check brake pad wear indicator system operation; determine necessary action.</p> <p>631 Test pedal free travel; check power assist operation.</p> <p>632 Check vacuum supply to vacuum type power booster.</p> <p>633 Remove, clean, inspect, repack, and install wheel bearings and replace seals; install hub and adjust bearings.</p> <p>634 Check parking brake cables and components for wear, binding, and corrosion; clean, lubricate, adjust or replace as needed.</p> <p>635 Check parking brake and indicator light system operation; determine necessary action.</p> <p>636 Check operation of brake stop light system;</p>		<p>Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding.</p> <p>RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	

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Units of Instruction and Task Grid Linked to Pennsylvania Core Standards

Secondary Competency Task List with Unit and Task Numbers:	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.0
determine necessary action. 637 Replace wheel bearing and race. 638 Inspect and replace wheel studs. 639 Remove and reinstall sealed wheel bearing assembly. 640 Identify and inspect electronic brake control system components; determine necessary action. 641 Diagnose electronic brake control system electronic control(s) and components by retrieving diagnostic trouble codes, and/or using recommended test equipment; determine necessary action. 642 Depressurize high pressure components of the electronic brake control system. 643 Bleed the electronic brake control system hydraulic circuits. 644 Identify traction control/vehicle stability control system components.				

700 ELECTRICAL/ELECTRONIC SYSTEMS.				
701 Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction. 702 Identify and interpret electrical/electronic system concern; determine necessary action. 703 Research applicable vehicle and service information, such as electrical/electronic system operation, vehicle service history, service precautions, and technical service bulletins. 704 Locate and interpret vehicle and major component identification numbers. 705 Use wiring diagrams during diagnosis of electrical circuit problems. 706 Check electrical circuits with a test light; determine necessary action.	<p>CAREER CLUSTER: Transportation, Distribution and Logistics (Choose Standards) 1-2-3-4-5-6</p> <p>PATHWAYS INCLUDE Facility and Mobile Equipment Maintenance Career Pathway (Choose Standards) 1-2</p> <p>NOTE: Refer to the Common</p>	<p>KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc.</p> <p>CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols,</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6</p>

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Units of Instruction and Task Grid Linked to Pennsylvania Core Standards

Secondary Competency Task List with Unit and Task Numbers:	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.0
<p>707 Check electrical circuits using fused jumper wires; determine necessary action.</p> <p>708 Locate shorts, grounds, opens, and resistance problems in electrical/electronic circuits; determine necessary action.</p> <p>709 Measure and diagnose the cause(s) of excessive parasitic draw; determine necessary action.</p> <p>710 Inspect and test fusible links, circuit breakers, and fuses; determine necessary action.</p> <p>711 Inspect and test switches, connectors, relays, solenoid solid state devices, and wires of electrical/electronic circuits; perform necessary action.</p> <p>712 Remove and replace terminal end from connector; replace connectors and terminal ends.</p> <p>713 Repair wiring harness (including CAN/BUS systems).</p> <p>714 Perform solder repair of electrical wiring.</p> <p>715 Identify location of hybrid vehicle high voltage circuit disconnect (service plug) location and safety procedures.</p> <p>716 Perform battery state of charge test; determine necessary action.</p> <p>717 Perform battery capacity test; confirm proper battery capacity for vehicle application; determine necessary action.</p> <p>718 Maintain or restore electronic memory functions.</p> <p>719 Inspect, clean, fill, and/or replace battery, battery cables, connectors, clamps, and hold downs.</p> <p>720 Perform battery charge.</p> <p>721 Start a vehicle using jumper cables or an auxiliary power supply.</p> <p>722 Identify electronic modules, security systems, radios, and other accessories that require reinitialization or code entry following battery disconnect.</p> <p>723 Perform starter current draw tests; determine</p>	<p>Career Technical Core Standards Booklet if you wish to add more Pathways, for your local Occupational Area.</p>	<p>key terms, and other domain-specific words.</p> <p>Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc.</p> <p>Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F Analyze the author’s purpose in providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a text.</p> <p>INTEGRATE KNOWLEDGE & IDEAS GRADES 9-10 Standard CC.3.5.9-10.G Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). Standard CC.3.5.9-10. H Assess the reasoning in a text to support the author’s claim for solving a technical problem. Standard CC.3.5.9-10. I Compare and contrast findings presented in a text to those from other sources, etc.</p> <p>INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem. Standard CC.3.5.11-12. H Evaluate the hypotheses, data,</p>	<p>Produce clear and coherent writing...appropriate to task, purpose, and audience.</p> <p>Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p> <p>Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E. Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p>RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F Conduct short and more sustained research to answer a question or solve a problem. Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H. Draw evidence from informational texts to support analysis, reflection, and research.</p>	<p>Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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Units of Instruction and Task Grid Linked to Pennsylvania Core Standards

Secondary Competency Task List with Unit and Task Numbers:	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.0
<p>necessary action.</p> <p>724 Perform starter circuit voltage drop tests; determine necessary action.</p> <p>725 Inspect and test starter relays and solenoids; determine necessary action.</p> <p>726 Remove and install starter in a vehicle.</p> <p>727 Inspect and test switches, connectors, and wires of starter control circuits; perform necessary action.</p> <p>728 Differentiate between electrical and engine mechanical problems that cause a slow crank or no crank condition.</p> <p>729 Perform charging system output test; determine necessary action.</p> <p>730 Diagnose charging system for the cause of undercharge, no charge, and overcharge conditions.</p> <p>731 Inspect, adjust, or replace generator (alternator) drive belts, pulleys, and tensioners; check pulley and belt alignment.</p> <p>732 Remove, inspect, and install generator (alternator).</p> <p>733 Perform charging circuit voltage drop tests; determine necessary action.</p> <p>734 Diagnose the cause of brighter than normal, intermittent, dim, or no light operation; determine necessary action.</p> <p>735 Inspect, replace, and aim headlights and bulbs.</p> <p>736 Inspect and diagnose incorrect turn signal or hazard light operation; perform necessary action.</p> <p>737 Inspect and test gauges and gauge sending units for cause of abnormal gauge readings; determine necessary action.</p> <p>738 Inspect and test connectors, wires, and printed circuit boards of gauge circuits; determine necessary action.</p> <p>739 Diagnose the cause of incorrect operation of warning devices and other driver information systems;</p>		<p>analysis, and conclusions in a technical text, verifying the data when possible.</p> <p>Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding.</p> <p>RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	

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Units of Instruction and Task Grid Linked to Pennsylvania Core Standards

Secondary Competency Task List with Unit and Task Numbers:	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.0
determine necessary action. 740 Diagnose incorrect horn operation; perform necessary action. 741 Diagnose incorrect wiper operation; diagnose wiper speed control and park problems; perform necessary action. 742 Diagnose incorrect washer operation; perform necessary action. 743 Diagnose incorrect operation of motor driven accessory circuits; determine necessary action. 745 Disarm and enable the airbag system for vehicle service. 746 Remove and reinstall door panel.				

800 ENGINE PERFORMANCE.				
801 Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction. 802 Identify and interpret engine performance concern; determine necessary action. 803 Research applicable vehicle and service information, such as engine management system operation, vehicle service history, service precautions, and technical service bulletins. 804 Locate and interpret vehicle and major component identification numbers. 805 Inspect engine assembly for fuel, oil, coolant, and other leaks; determine necessary action. 806 Diagnose abnormal engine noise or vibration concerns; determine necessary action. 807 Diagnose abnormal exhaust color, odor, and sound; determine necessary action. 808 Perform engine absolute (vacuum/boost) manifold	<p>CAREER CLUSTER: Transportation, Distribution and Logistics (Choose Standards) 1-2-3-4-5-6</p> <p>PATHWAYS INCLUDE Facility and Mobile Equipment Maintenance Career Pathway (Choose Standards) 1-2</p> <p>NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more</p>	<p>KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc.</p> <p>CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain-specific words. Standard CC.3.5.9-10.E</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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Units of Instruction and Task Grid Linked to Pennsylvania Core Standards

Secondary Competency Task List with Unit and Task Numbers:	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.0
<p>pressure tests; determine necessary action.</p> <p>809 Perform cylinder power balance test; determine necessary action.</p> <p>810 Perform cylinder cranking and running compression tests; determine necessary action.</p> <p>811 Perform cylinder leakage test; determine necessary action.</p> <p>812 Diagnose engine mechanical, electrical, electronic, fuel, and ignition concerns; determine necessary action.</p> <p>813 Verify engine operating temperature; determine necessary action.</p> <p>814 Perform cooling system pressure tests; check coolant condition; inspect and test radiator, pressure cap, coolant recovery tank, and hoses; perform necessary action.</p> <p>815 Verify correct camshaft timing.</p> <p>816 Retrieve and record diagnostic trouble codes, OBD monitor status, and freeze frame data; clear codes when applicable.</p> <p>817 Diagnose the causes of emissions or drivability concerns with stored or active diagnostic trouble codes; obtain, graph, and interpret scan tool data.</p> <p>818 Access and use service information to perform step by step diagnosis.</p> <p>819 Perform active tests of actuators using a scan tool; determine necessary action.</p> <p>820 Describe the importance of running all OBDII monitors for repair verification.</p> <p>821 Diagnose ignition system related problems such as no starting, hard starting, engine misfire, poor drivability, spark knock, power loss, poor mileage, and emissions concerns; determine necessary action.</p> <p>822 Inspect and test ignition primary and secondary circuit</p>	<p>Pathways, for your local Occupational Area.</p>	<p>Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc.</p> <p>Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F Analyze the author’s purpose in providing an explanation, describing a procedure...and</p> <p>Analyze the structure of the relationships among concepts in a text.</p> <p>INTEGRATE KNOWLEDGE & IDEAS GRADES 9-10</p> <p>Standard CC.3.5.9-10.G Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).</p> <p>Standard CC.3.5.9-10. H Assess the reasoning in a text to support the author’s claim for solving a technical problem.</p> <p>Standard CC.3.5.9-10. I Compare and contrast findings presented in a text to those from other sources, etc.</p> <p>INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12</p> <p>Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.</p> <p>Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.</p>	<p>Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p> <p>Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E. Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p>RESEARCH GRADES 9-10-11-12</p> <p>Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F Conduct short and more sustained research to answer a question or solve a problem.</p> <p>Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.</p> <p>Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H. Draw evidence from informational texts to support analysis, reflection, and research.</p> <p>RANGE OF WRITING GRADES 9-10-11-12</p> <p>Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I.</p>	<p>GEOMETRY Standard 2.3.HS.A.13 Analyze relationships between two dimensional and three dimensional objects.</p>

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Units of Instruction and Task Grid Linked to Pennsylvania Core Standards

<p align="center">Secondary Competency Task List with Unit and Task Numbers:</p>	<p align="center">Common Career Technical Core Standards</p>	<p align="center">Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5</p>	<p align="center">Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6</p>	<p align="center">Pennsylvania Core Standards for Mathematics Standard 2.0</p>
<p>wiring and solid state components; test ignition coil(s); perform necessary action.</p> <p>823 Inspect and test crankshaft and camshaft position sensor(s); perform necessary action.</p> <p>824 Inspect, test, and/or replace ignition control module, powertrain/engine control module; reprogram as necessary.</p> <p>825 Diagnose hot or cold no starting, hard starting, poor drivability, incorrect idle speed, poor idle, flooding, hesitation, surging, engine misfire, power loss, stalling, poor mileage, dieseling, and emissions problems; determine necessary action.</p> <p>826 Inspect and test fuel pumps and pump control systems for pressure, regulation, and volume; perform necessary action.</p> <p>827 Replace fuel filters.</p> <p>828 Inspect throttle body, air induction system, intake manifold and gaskets for vacuum leaks and/or unmetered air.</p> <p>829 Inspect and test fuel injectors.</p> <p>830 Verify idle control operation.</p> <p>831 Inspect the integrity of the exhaust manifold, exhaust pipes, muffler(s), catalytic converter(s), resonator(s), tail pipe(s), and heat shield(s); perform necessary action.</p> <p>832 Diagnose oil leaks, emissions, and drivability concerns caused by the positive crankcase ventilation (PCV) system; determine necessary action.</p> <p>833 Inspect, test and service positive crankcase ventilation (PCV) filter/breather cap, valve, tubes, orifices, and hoses; perform necessary action.</p> <p>834 Diagnose emissions and drivability concerns caused by the exhaust gas recirculation (EGR) system; determine necessary action.</p>		<p>Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding.</p> <p>RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	

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Units of Instruction and Task Grid Linked to Pennsylvania Core Standards

<p align="center">Secondary Competency Task List with Unit and Task Numbers:</p>	<p align="center">Common Career Technical Core Standards</p>	<p align="center">Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5</p>	<p align="center">Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6</p>	<p align="center">Pennsylvania Core Standards for Mathematics Standard 2.0</p>
<p>835 Inspect, test, service and replace components of the EGR system, including EGR tubing, exhaust passages, vacuum/pressure controls, filters and hoses; perform necessary action.</p> <p>836 Inspect and test electrical/electronic sensors, controls, and wiring of exhaust gas recirculation (EGR) systems; perform necessary action.</p> <p>837 Inspect and test mechanical components of secondary air injection systems; perform necessary action.</p> <p>838 Inspect and test electrical/electronically operated components and circuits of air injection systems; perform necessary action.</p> <p>839 Inspect and test catalytic converter efficiency.</p> <p>840 Diagnose emissions and drivability concerns caused by the evaporative emissions control system; determine necessary action.</p> <p>841 Inspect and test components and hoses of the evaporative emissions control system; perform necessary action.</p> <p>842 Interpret diagnostic trouble codes (DTCs) and scan tool data related to the emissions control systems; determine necessary action.</p> <p>843 Remove and replace timing belt; verify correct camshaft timing.</p> <p>844 Remove and replace thermostat and gasket/seal.</p> <p>845 Inspect and test mechanical/electrical fans, fan clutch, fan shroud/ducting, air dams, and fan control devices; perform necessary action.</p> <p>846 Perform engine oil and filter change.</p>				