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**Coal City Unit District #1**  
**Small Engines and Automotive**  
**Career and Technical Curriculum**

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**CTE.SEA:1 Students will demonstrate knowledge of the shop safety rules. ( NATEFS 3, 6, 7, 8, 9)**

- CTE.SEA:1-1 Identify and reduce potential hazards in shop activities.
- CTE.SEA:1-2 Demonstrate safety rules for handling tools and equipment.
- CTE.SEA:1-3 Appraise the use of personal safety equipment, wearing safety glasses, wearing appropriate clothing/shoes/gloves for lab/shop activities.

**CTE.SEA:2 Students must identify and safely use hand tools. ( NATEFS 3, 6, 7, 8, 9)**

- CTE.SEA:2-1 Differentiate between safe and unsafe handling of appropriate tools.
- CTE.SEA:2-2 Distinguish between the different types of tools.
- CTE.SEA:2-3 Identify the proper name of the tool.
- CTE.SEA:2-4 Demonstrate how to use the tool properly.

**CTE.SEA:3 Students must identify engine parts. ( NATEFS 3, 6, 7, 8, 9)**

- CTE.SEA:3-1 Identify working parts of a four stroke engine.
- CTE.SEA:3-2 Explain the operation of the cylinder head, cam shaft, timing chain, crankshaft and valves.
- CTE.SEA:3-3 Differentiate between the operation of a four stroke engine and a 2-stroke engine.
- CTE.SEA:3-4 Describe and explain the operation and position of pistons to valves.
- CTE.SEA:3-5 Describe the following cycles: intake, compression, power, exhaust.

**CTE.SEA:4 Students must disassemble and re-assemble a small engine. ( NATEFS 3, 6, 7, 8, 9)**

- CTE.SEA:4-1 Show how to disassemble and inspect various engine components.
- CTE.SEA:4-2 Demonstrate the proper use of a technical manual.
- CTE.SEA:4-3 Identify the correct tools used to assemble a small engine.
- CTE.SEA:4-4 Perform reassembly of engine and inspect various engine components.

**CTE.SEA:5 Students will demonstrate knowledge of automotive history. (NATEFS 3, 6, 9)**

CTE.SEA:5-1 Identify the people that have impacted the automotive industry.

CTE.SEA:5-2 Identify the progression of the automobile.

CTE.SEA:5-3 Identify and differentiate makes and models.

**CTE.SEA:6 Students will perform exterior and interior detailing. (NATEFS 3, 6, 9)**

CTE.SEA:6-1 Choose the proper method for washing.

CTE.SEA:6-2 Choose the proper method for oxidation removal.

CTE.SEA:6-3 Differentiate between the improper and the proper method for waxing.

CTE.SEA:6-4 Demonstrate the proper method for spotting body repairs.

CTE.SEA:6-5 Choose the proper method and materials for interior cleaning.

**CTE.SEA:7 Students will demonstrate knowledge of steering and suspension systems. (NATEFS 3, 6, 9)**

CTE.SEA:7-1 Demonstrate the proper method for changing tires.

CTE.SEA:7-2 Identify tire wear patterns and the causes of the wear.

CTE.SEA:7-3 Distinguish between shocks and struts.

CTE.SEA:7-4 Demonstrate the proper method for testing shocks and struts.

CTE.SEA:7-5 Identify the different types of springs.

CTE.SEA:7-6 Identify the following parts: tie rods, ball joints and power steering.

**CTE.SEA:8 Students will demonstrate knowledge of electrical systems. (NATEFS 3, 6, 9)**

CTE.SEA:8-1 Describe proper use, connection, and construction of batteries.

CTE.SEA:8-2 Differentiate between the correct and incorrect fluids and fluid levels in a lead/acid battery.

CTE.SEA:8-3 Describe the purpose of alternators and generators.

CTE.SEA:8-4 Identify alternators and generators.

CTE.SEA:8-5 Show how to test fuses and fusible links.

CTE.SEA:8-6 Practice troubleshooting electrical systems.

CTE.SEA:8-7 Practice changing serpentine belts.

CTE.SEA:8-8 Show how to change lights and halogen bulbs.

**CTE.SEA:9 Students will demonstrate knowledge of lubrication systems. (NATEFS 3, 6, 9)**

- CTE.SEA:9-1 Distinguish between automotive fluid types and their different maintenance requirements.
- CTE.SEA:9-2 Explain oil grades and classifications.
- CTE.SEA:9-3 Identify the causes of leaks.
- CTE.SEA:9-4 Practice troubleshooting leakage problems.

**CTE.SEA:10 Students will demonstrate knowledge of cooling systems. (NATEFS 3, 6, 9)**

- CTE.SEA:10-1 Demonstrate the proper and safe use of a hydrometer.
- CTE.SEA:10-2 Distinguish between types of coolant.
- CTE.SEA:10-3 Explain methods of repairing leaks.
- CTE.SEA:10-4 Identify parts of a cooling system including pumps, hoses and belts.
- CTE.SEA:10-5 Show how to remove and replace a serpentine belt.

**CTE.SEA:11 Students will demonstrate knowledge of how to buy a used car.**

- CTE.SEA:11-1 Evaluate the process of how to shop and budget for a car.
- CTE.SEA:11-2 Distinguish between dealerships, private owners and auto auctions.
- CTE.SEA:11-3 Explain methods of pricing and financing.
- CTE.SEA:11-4 Identify additional auto expenses such as repairs, license fees and insurance.
- CTE.SEA:11-5 Perform research and team presentation.