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| CENTRAL FLORIDA ASSESSMENT COLLABORATIVE |
| Individual Test Item Specifications |
| Automotive Maintenance and Light Repair 1 |
| 2014 |

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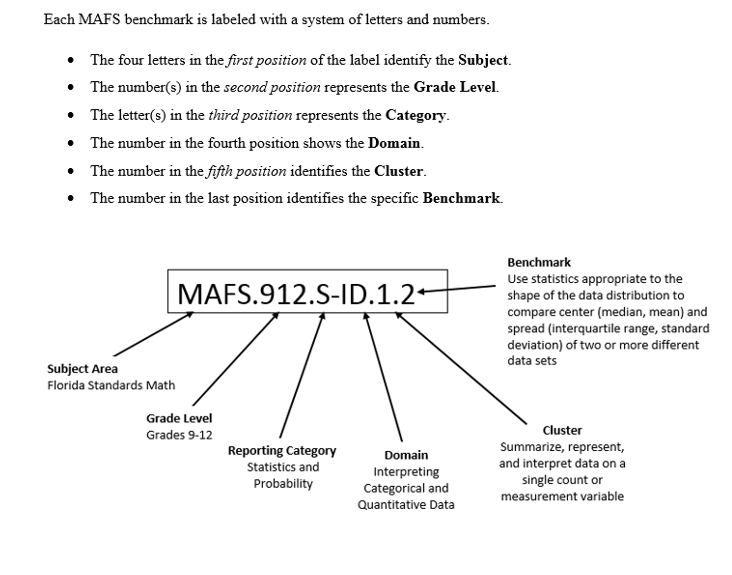
I. Guide to the Individual Benchmark Specifications

Content specific guidelines are given in the *Individual Benchmark Specifications* for each course. The *Specifications* contains specific information about the alignment of items with the Florida Standards. It identifies the manner in which each benchmark is assessed, provides content limits and stimulus attributes for each benchmark, and gives specific information about content, item types, and response attributes.

Benchmark Classification System

* Each Career and Technical Education course has its own set of course standards. The benchmarks are organized numerically, with two numbers separated by a decimal point. The first number is the standard number, and the second number is the benchmark number. You will see these numbers on the Item Specifications for each course.





**Definitions of Benchmark Specifications**

The *Individual Benchmark Specifications* provides standard-specific guidance for assessment item development for CFAC item banks. For each benchmark assessed, the following information is provided.

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| **Reporting Category** | is a grouping of related benchmarks that can be used to summarize and report achievement. |
| **Standard** | refers to the standard statement presented in the Florida Standards. |
| **Benchmark**  **Also Assesses** | refers to the benchmark statement presented in the Florida Standards. In some cases, two or more related benchmarks are grouped together because the assessment of one benchmark addresses another benchmark. Such groupings are indicated in the Also Assesses statement.  refers to the benchmarks that are closely related to the benchmark (see description above) |
| **Item Types**  **Cognitive**  **Complexity** | are used to assess the benchmark or group of benchmark.  ideal level at which item should be assessed. |
| **Benchmark Clarifications** | explain how achievement of the benchmark will be demonstrated by students. In other words, the clarification statements explain what the student will do when responding to questions. |
| **Content Limits** | define the range of content knowledge and that should be assessed in the items for the benchmark. |
| **Stimulus Attributes** | define the types of stimulus materials that should be used in the items, including the appropriate use of graphic materials and item context or content. |
| **Response Attributes**  **Content Focus** | define the characteristics of the answers that a student must choose or provide.  defines the content measured by each test item. Content focus addresses the broad content and skills associated with the examples found in the standards, benchmarks, or benchmark clarifications. |
| **Sample Items** | are provided for each type of question assessed. The correct answer for all sample items is provided. |

**II. Individual Benchmark Specifications**

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| **Benchmark Number** | 04.01 |
| **Standard** | 04.0 Proficiently explain and apply required shop and personal safety tasks relating to the automotive industry |
| **Benchmark** | Identify and apply general shop safety rules and procedures, EPA and OSHA standards. |
| **Also Assesses** | 04.08, 04.10, 04.14, 04.15 |
| **(K)Knowledge (P)Performance or (B)both** | (K) Knowledge |
| **Item Types** | Multiple Choice |
| **Cognitive Complexity Level** | Low, Moderate |
| **Benchmark Clarification** | The student will be able Identify and apply general shop safety rules and procedures, EPA and OSHA standards used in the automotive industry.   |  | | --- | |  | |
| **Content Limits** | Rules procedures and standards applicable to automotive shops and labs. |
| **Stimulus Attributes** | Items may include illustrations, photographs and description. |
| **Response Attributes** | The ability to understand safety rules and regulations that apply to the automotive industry and automotive regulation compliance. |
| **Sample Item** | What safety protection is the best to use when grinding metal on a floor mounted shop grinder?  A. wear a hat and sunglasses  B. wear a respiratory system  C. wear gloves and a welding helmet  D. wear gloves and safety glasses  **Correct Answer: D** |

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| **Benchmark Number** | 04.02 |
| **Standard** | 04.0 Proficiently explain and apply required shop and personal safety tasks relating to the automotive industry   |  | | --- | |  | |
| **Benchmark** | Demonstrate knowledge of appropriate automotive industry certifications |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (K) Knowledge |
| **Item Types** | Multiple Choice |
| **Cognitive Complexity Level** | Low |
| **Benchmark Clarification** | Student will demonstrate knowledge of automotive industry certification testing. |
| **Content Limits** | Automotive related certifications. |
| **Stimulus Attributes** | Items may include illustrations, photographs and descriptions. |
| **Response Attributes** | Ability to understand the different types of automotive industry certifications that a technician can obtain. |
| **Sample Item** | To become a master ASE certified automotive technician how many ASE exams do you need to pass?  A. 3  B. 5  C. 7  D. 8  **Correct Answer: D** |

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| **Benchmark Number** | 04.05 |
| **Standard** | 04.0 Proficiently explain and apply required shop and personal safety tasks relating to the automotive industry |
| **Benchmark** | Utilize and demonstrate safe procedures for handling of tools and equipment |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (P) Performance |
| **Item Types** | Performance Assessment |
| **Cognitive Complexity Level** | Moderate, High |
| **Benchmark Clarification** | Students will be able to utilize and demonstrate safe procedures for handling of tools and equipment. |
| **Content Limits** | Tools will be limited to; deep well sockets, shallow sockets, impact sockets, phillips screwdriver, flat head screwdriver, rubber mallet, ball-peen hammer, sledge hammer, slip joint pliers, needle nose pliers, diagonal cutting pliers, channel lock pliers, pneumatic impact wrenches, air (pneumatic) drill, electric drill, air (pneumatic) chisel, air (pneumatic) blow gun, drill press and bench grinder. Items will Not include any other types of tools. |
| **Stimulus Attributes** | Items may include common tools found in an automotive shop. |
| **Response Attributes** | Demonstrate knowledge of safe and proper tool usage. |
| **Sample Item** | Performance Assessment  The wheel on a vehicle has to be to be removed. A student will demonstrate how to safely remove the wheel.  Performance assessment items require more detailed instructions and a scoring rubric. The scoring rubric should have elements that will need to be included for students to earn credit. Will speed or cleanliness count? What tools should they use for this project? Does the student return all tools when the task is completed? |

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| **Benchmark Number** | 04.06 |
| **Standard** | 04.0 Proficiently explain and apply required shop and personal safety tasks relating to the automotive industry |
| **Benchmark** | Identify and use proper placement of floor jacks and jack stands |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (P) Performance |
| **Item Types** | Performance Assessment |
| **Cognitive Complexity Level** | Moderate, High |
| **Benchmark Clarification** | Student will be able to properly identify the area on the vehicle to position the jack and jack stands and demonstrate where to place them. |
| **Content Limits** | Hydraulic jacks and jack stands specific to the automotive industry. |
| **Stimulus Attributes** | Items will only include jack and jacks stand commonly used in an automotive shop. |
| **Response Attributes** | Identify the proper use, safety practices and storage of jacks and jack stands. |
| **Sample Item** | A vehicle needs to be jacked up to remove the wheel. The student will demonstrate proper jacking procedures and proper jack placement on the vehicle.    Performance assessment items require more detailed instructions and a scoring rubric. The scoring rubric should have elements that will need to be included for students to earn credit. Will speed or cleanliness count? What tools should they use for this project? Does the student return all tools when the task is completed? |

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| **Benchmark Number** | 04.07 |
| **Standard** | 04.0 Proficiently explain and apply required shop and personal safety tasks relating to the automotive industry |
| **Benchmark** | Identify and use proper procedures for safe lift usage |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (P) Performance |
| **Item Types** | Performance Assessment |
| **Cognitive Complexity Level** | Moderate, High |
| **Benchmark Clarification** | Student will be able to safely use an automotive lift. |
| **Content Limits** | Lifts specific to the automotive industry. |
| **Stimulus Attributes** | Lifts commonly used in an automotive shop. |
| **Response Attributes** | None Specified |
| **Sample Item** | A vehicle needs to be raised on the lift to remove the wheel. The student will demonstrate proper lifting procedures and lift pad placement on the vehicle.    Performance assessment items require more detailed instructions and a scoring rubric. The scoring rubric should have elements that will need to be included for students to earn credit. Will speed or cleanliness count? What tools should they use for this project? Does the student return all tools when the task is completed? |

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| **Benchmark Number** | 04.12 |
| **Standard** | 04.0 Proficiently explain and apply required shop and personal safety tasks relating to the automotive industry |
| **Benchmark** | Demonstrate knowledge of the procedures for using fire extinguishers and other safety equipment |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (K) Knowledge |
| **Item Types** | Multiple Choice |
| **Cognitive Complexity Level** | Low, Moderate |
| **Benchmark Clarification** | Students will be able to identify proper procedures for fire extinguisher use and other safety equipment. |
| **Content Limits** | Fire extinguishers and safety equipment specific automotive repair industry. |
| **Stimulus Attributes** | Items may include illustrations, photographs and descriptions. |
| **Response Attributes** | None Specified |
| **Sample Item** | When working in an automotive what type of shoes would give you the best protection?   1. closed toe shoes 2. open toe shoes 3. steel toe shoes 4. tennis shoes   **Correct Answer: C** |

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| **Benchmark Number** | 04.19 |
| **Standard** | 04.0 Proficiently explain and apply required shop and personal safety tasks relating to the automotive industry |
| **Benchmark** | Identify and describe typical automotive lubricants and lubricant properties |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (K) Knowledge |
| **Item Types** | Multiple Choice |
| **Cognitive Complexity Level** | Moderate |
| **Benchmark Clarification** | Students will be able to identify and describe the proper lubricants used on passenger vehicles. |
| **Content Limits** | Lubricants will be limited to engine oil, transmission fluid, power steering fluid, differential fluid, chassis grease and wheel bearing grease. |
| **Stimulus Attributes** | Items may include illustrations, photographs and descriptions. |
| **Response Attributes** | Descriptions, identifications, and functions of lubricants. |
| **Sample Item** | What should a fluid container marked 5W-30 be used to fill?  A. the crankcase  B. the differential  C. the power steering pump  D. the radiator  **Correct Answer: A** |

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| **Benchmark Number** | 04.20 |
| **Standard** | 04.0 Proficiently explain and apply required shop and personal safety tasks relating to the automotive industry |
| **Benchmark** | Identify and describe the proper procedure to apply and remove automotive fasteners, including thread inserts |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (K) Knowledge |
| **Item Types** | Multiple Choice |
| **Cognitive Complexity Level** | Low, Moderate |
| **Benchmark Clarification** | Students will be able to differentiate between different types of automotive fasteners. |
| **Content Limits** | Items will be limited to fasteners and thread inserts specific to the automotive industry. |
| **Stimulus Attributes** | Items may include illustrations, photographs and descriptions. |
| **Response Attributes** | Descriptions and function of automotive fasteners and thread inserts and repairs. |
| **Sample Item** | What type of repair is required when the spark plug hole threads are damaged on a typical internal combustion engine?  A. adapter insert  B. cosmetic insert  C. thread insert  D. seal insert  **Correct Answer: C** |

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| **Benchmark Number** | 04.21 |
| **Standard** | 04.0 Proficiently explain and apply required shop and personal safety tasks relating to the automotive industry |
| **Benchmark** | Identify and describe typical automotive seals and gaskets |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (K) Knowledge |
| **Item Types** | Multiple Choice |
| **Cognitive Complexity Level** | Low, Moderate |
| **Benchmark Clarification** | Students will be able to differentiate between different types of automotive seals and gaskets. |
| **Content Limits** | Item contents may include head gasket, water pump gaskets, thermostats gaskets, valve cover gaskets, cork gaskets, rubber gaskets, metal gaskets, MLS gaskets (multiple layer steel), wheel bearing seals, crankshaft seals, and axle seals. |
| **Stimulus Attributes** | Items may include illustrations, photographs and descriptions. |
| **Response Attributes** | Descriptions and function of head gasket, valve cover gaskets, wheel bearing seal and engine seals. |
| **Sample Item** | What is the gasket called that seals the engine block and cylinder head?  A. head gasket  B. oil pan gasket  C. rear main seal  D. timing cover gasket  **Correct Answer: A** |

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| **Benchmark Number** | 04.24 |
| **Standard** | 04.0 Proficiently explain and apply required shop and personal safety tasks relating to the automotive industry |
| **Benchmark** | Demonstrate awareness of the safety aspects of high voltage circuits (such as high intensity discharge (HID) lamps, ignition systems, injection systems, etc.). |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (K) Knowledge |
| **Item Types** | Multiple Choice |
| **Cognitive Complexity Level** | Low, Moderate |
| **Benchmark Clarification** | Students will be able to differentiate between different types of automotive circuits |
| **Content Limits** | Item contents may only include high voltage circuit’s specific to the automotive industry, items may not include aftermarket accessories. |
| **Stimulus Attributes** | Items may include illustrations, photographs and descriptions. |
| **Response Attributes** | Descriptions and function of automotive high voltage circuits. |
| **Sample Item** | When replacing a high intensity discharge lamp (HID) what will happen if you install the bulb with your unprotected fingers?  A. the bulb will break  B. the bulb will have a shorter life  C. the bulb will not work  D. the bulb will vapor lock  **Correct Answer: B** |

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| **Benchmark Number** | 04.25 |
| **Standard** | 04.0 Proficiently explain and apply required shop and personal safety tasks relating to the automotive industry |
| **Benchmark** | Locate and demonstrate knowledge of material safety data sheets (MSDS) |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (K) Knowledge |
| **Item Types** | Multiple Choice |
| **Cognitive Complexity Level** | Low, Moderate |
| **Benchmark Clarification** | Students will be able to locate and demonstrate knowledge of material safety data sheets (MSDS). |
| **Content Limits** | Items contained in the material safety data sheets (MSDS). |
| **Stimulus Attributes** | Items may include illustrations, photographs and descriptions. |
| **Response Attributes** | None Specified |
| **Sample Item** | When working with a new chemical in the automotive shop where should the chemical hazard information be located?  A. EPA book  B. MSDS book  C. OSHA book  D. parts book  **Correct Answer: C** |

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| **Benchmark Number** | 05.01 |
| **Standard** | 05.0 Explain and apply required task associated with the proper use and handling of tools and equipment relating to the automotive industry |
| **Benchmark** | Identify tools and equipment and their appropriate usage in automotive applications |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (K) Knowledge |
| **Item Types** | Multiple Choice |
| **Cognitive Complexity Level** | Low, Moderate |
| **Benchmark Clarification** | Student will be able to identify tools and their proper usage. |
| **Content Limits** | Items should not include tools and equipment used outside of the scope of a general automotive service technician. |
| **Stimulus Attributes** | Items may include illustrations, photographs and descriptions. |
| **Response Attributes** | Proper identification, description and usage of automotive related tools and equipment. |
| **Sample Item** | What is the **best** tool to use when loosening a bolt or a nut on a vehicle?  A. adjustable wrench  B. box end wrench  C. line wrench  D. open end wrench  **Correct Answer: B** |

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| **Benchmark Number** | 05.03 |
| **Standard** | 05.0 Explain and apply required task associated with the proper use and handling of tools and equipment relating to the automotive industry |
| **Benchmark** | Demonstrate proper cleaning, storage, and maintenance of tools |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (P) Performance |
| **Item Types** | Performance Assessment |
| **Cognitive Complexity Level** | Moderate |
| **Benchmark Clarification** | Students will be able to demonstrate how to properly clean, store, and maintain tools. |
| **Content Limits** | Items should not include tools and equipment used outside of the scope of a general automotive service technician. |
| **Stimulus Attributes** | Items will only include tools and equipment specific to the automotive industry. |
| **Response Attributes** | None Specified |
| **Sample Item** | After a tool has been used for repairs demonstrate the proper procedure for cleaning the tool and returning it to the proper storage area.  Performance assessment items require more detailed instructions and a scoring rubric. The scoring rubric should have elements that will need to be included for students to earn credit. Will speed or cleanliness count? What tools should they use for this project? Does the student return all tools when the task is completed? |

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| **Benchmark Number** | 06.01 |
| **Standard** | 06.0 Demonstrate the proficiency in preparing vehicle for routine pre/post maintenance and customer services |
| **Benchmark** | Identify information needed and the service requested on a repair order |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (K) Knowledge |
| **Item Types** | Multiple Choice |
| **Cognitive Complexity Level** | Low, Moderate |
| **Benchmark Clarification** | Students will be able to Identify information needed and the service requested on a repair order. |
| **Content Limits** | Repair orders that are found in an automotive repair shop. |
| **Stimulus Attributes** | Items may include illustrations, photographs and descriptions. |
| **Response Attributes** | None Specified |
| **Sample Item** | What type of information is **most** important on a vehicle repair order?    A. the customer advice  B. the customer complaint  C. the customer satisfaction  D. the customer survey  **Correct Answer : B** |

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| **Benchmark Number** | 06.02 |
| **Standard** | 06.0 Demonstrate the proficiency in preparing vehicle for routine pre/post maintenance and customer services |
| **Benchmark** | Identify automobiles according to engine location, cylinders, type of drive system, purpose, etc. |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (K) Knowledge |
| **Item Types** | Multiple Choice |
| **Cognitive Complexity Level** | Moderate |
| **Benchmark Clarification** | Students will be able to differentiate between front/rear wheel drive, engine location and engine configuration. |
| **Content Limits** | Engine configurations will be limited to four and six cylinder inline engines and six and eight cylinder V style engines. Engine location will be limited to front mounted and rear mounted engines. Drive configuration will be limited to front wheel drive, rear wheel drive, four wheel drive and all wheel drive. Items may include hybrid vehicles. Items are not to include alternative fuel vehicles. |
| **Stimulus Attributes** | Items may include illustrations, photographs and descriptions. |
| **Response Attributes** | Identify inline engines, V style engines, hybrid, front wheel drive, rear wheel drive and four wheel drive configurations. Identification of drive locations and purpose. |
| **Sample Item** | What type of vehicle uses a transaxle to transmit power from the engine to the wheel or wheels of the vehicle?    A. detached wheel drive vehicle  B. front wheel drive vehicle  C. rear wheel drive vehicle  D. standard wheel drive vehicle  **Correct Answer : B** |

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| **Benchmark Number** | 06.04 |
| **Standard** | 06.0 Demonstrate the proficiency in preparing vehicle for routine pre/post maintenance and customer services |
| **Benchmark** | Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (K) Knowledge |
| **Item Types** | Multiple Choice |
| **Cognitive Complexity Level** | Low, Moderate |
| **Benchmark Clarification** | Student will be able to interpret and explain customer information, vehicle information, service history and technician response (concern, cause and correction) found on a standard automotive work order |
| **Content Limits** | Customer information, vehicle information and technician response (concern, cause and correction) found on a standard automotive work order. |
| **Stimulus Attributes** | Items may include illustrations, photographs and Customer information, vehicle information and technician response (concern, cause and correction) found on a standard automotive work order. |
| **Response Attributes** | Understand necessity for customer information (Name and contact information), vehicle information (VIN, Make, Model, Year of vehicle) and Technician response (concern, cause and correction) found on a standard automotive work order. |
| **Sample Item** | When reading a work order what are the three Cs?  A. car, check, change  B. concern, cause, correction  C. correction , car, concern  D. classification, car, check  **Correct Answer: B** |

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| **Benchmark Number** | 06.07 |
| **Standard** | 06.0 Demonstrate the proficiency in preparing vehicle for routine pre/post maintenance and customer services |
| **Benchmark** | Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (P) Performance |
| **Item Types** | Performance Assessment |
| **Cognitive Complexity Level** | Moderate, High |
| **Benchmark Clarification** | Student will be able to interpret and explain customer information, vehicle information, service history and technician response (concern, cause and correction) found on a standard automotive work order. |
| **Content Limits** | Customer information, vehicle information and technician response (concern, cause and correction) found on a standard automotive work order. |
| **Stimulus Attributes** | Items may include illustrations, photographs and Customer information, vehicle information and technician response (concern, cause and correction) found on a standard automotive work order. |
| **Response Attributes** | Understand necessity for customer information (Name and contact information), vehicle information (VIN, Make, Model, Year of vehicle) and Technician response (concern, cause and correction) found on a standard automotive work order. |
| **Sample Item** | The student will **c**omplete a work order and include customer information, vehicle identifying information, customer concern, related service history, cause, and correction.  Performance assessment items require more detailed instructions and a scoring rubric. The scoring rubric should have elements that will need to be included for students to earn credit. Will speed or cleanliness count? What tools should they use for this project? Does the student return all tools when the task is completed? |

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| **Benchmark Number** | 06.23 |
| **Standard** | 06.0 Demonstrate the proficiency in preparing vehicle for routine pre/post maintenance and customer services |
| **Benchmark** | Determine fluid type requirements and identify fluid |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (K) Knowledge |
| **Item Types** | Multiple Choice |
| **Cognitive Complexity Level** | Moderate |
| **Benchmark Clarification** | Student will be able to determine fluid type requirements and identify fluids in an automobile. |
| **Content Limits** | Fluids specific to the automotive industry. Items are not to include hybrid or alternative fuel vehicles. |
| **Stimulus Attributes** | Items may include illustrations, photographs, descriptions, charts and maintenance tables. |
| **Response Attributes** | Application and identification of the different types of automotive fluids. |
| **Sample Item** | Diane is changing the oil in her vehicle. The owner’s manual states that the vehicle should use a SAE (society of automotive engineers) 5W – 20 oil in mild climates and be adjusted for extreme temperatures according to the viscosity adjustment chart. Diane will be taking the vehicle to a hotter climate, for the next few months, where the temperatures will reach a high of over ninety-five degrees Fahrenheit and a low of seventy degrees Fahrenheit on a daily average. Based on the viscosity adjustment chart, what viscosity grade of oil should Diane put in her car?  40 - 100 Degrees Fahrenheit = SAE 30  20 - 100 Degrees Fahrenheit = SAE 10W-30  10 - 100 Degrees Fahrenheit = SAE 5W-30  5 - 80 Degrees Fahrenheit = SAE 5W-20  A. SAE 30  B. SAE 10W-30  C. SAE 5W-30  D. SAE 5W-20  **Correct Answer: A** |

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| **Benchmark Number** | 06.24 |
| **Standard** | 06.0 Demonstrate the proficiency in preparing vehicle for routine pre/post maintenance and customer services |
| **Benchmark** | Check engine oil level and condition; service as required |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (P) Performance |
| **Item Types** | Performance Assessment |
| **Cognitive Complexity Level** | High |
| **Benchmark Clarification** | Student will be able to understand the procedure needed to properly check engine oil level and condition and demonstrate ability to do so. |
| **Content Limits** | Oil designed specifically for automotive use. |
| **Stimulus Attributes** | Items may include illustrations, photographs, descriptions, maintenance tables/records and vehicles. |
| **Response Attributes** | Ability to identify oil type, level and condition and service needed. |
| **Sample Item** | The student will be instructed to check the oil on a vehicle and make a proper recommendation on service needed based on oil condition and any available maintenance records or tables.  Performance assessment items require more detailed instructions and a scoring rubric. The scoring rubric should have elements that will need to be included for students to earn credit. Will speed or cleanliness count? What tools should they use for this project? Does the student return all tools when the task is completed? |

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| **Benchmark Number** | 06.30 |
| **Standard** | 06.0 Demonstrate the proficiency in preparing vehicle for routine pre/post maintenance and customer services |
| **Benchmark** | Check automatic transmission fluid level and condition; service as required |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (P) Performance |
| **Item Types** | Performance Assessment |
| **Cognitive Complexity Level** | High |
| **Benchmark Clarification** | Student will be able to understand the procedure needed to properly check automatic transmission fluid level and condition and service as required. |
| **Content Limits** | Fluid designed specifically for automotive transmission use. |
| **Stimulus Attributes** | Items may include illustrations, photographs, descriptions, maintenance tables/records and vehicles. |
| **Response Attributes** | Ability to identify fluid type, level and condition and service needed. |
| **Sample Item** | The student will be instructed to check the transmission fluid on a vehicle and make a proper recommendation on service needed based on oil condition and any available maintenance records or tables.  Performance assessment items require more detailed instructions and a scoring rubric. The scoring rubric should have elements that will need to be included for students to earn credit. Will speed or cleanliness count? What tools should they use for this project? Does the student return all tools when the task is completed? |

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| **Benchmark Number** | 06.42 |
| **Standard** | 06.0 Demonstrate the proficiency in preparing vehicle for routine pre/post maintenance and customer services |
| **Benchmark** | Document observed damage, unusual conditions, and concerns |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (P) Performance |
| **Item Types** | Performance Assessment |
| **Cognitive Complexity Level** | High |
| **Benchmark Clarification** | Student will be able to inspect vehicles, document observed damage, unusual conditions, and concerns and identify necessary repairs. |
| **Content Limits** | Items limited to passenger vehicles. |
| **Stimulus Attributes** | Items may include illustrations, photographs and descriptions vehicles. |
| **Response Attributes** | Ability to identify and document observed damage, unusual conditions, concerns and identify necessary repairs. |
| **Sample Item** | The student will be instructed to complete a visual inspection on a vehicle and make a proper recommendation on service needed based on vehicle condition and any available maintenance records or tables.  Performance assessment items require more detailed instructions and a scoring rubric. The scoring rubric should have elements that will need to be included for students to earn credit. Will speed or cleanliness count? What tools should they use for this project? Does the student return all tools when the task is completed? |

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| **Benchmark Number** | 06.36 |
| **Standard** | 06.0 Demonstrate the proficiency in preparing vehicle for routine pre/post maintenance and customer services |
| **Benchmark** | Inspect cooling system pipes and hoses for wear, damage, and proper routing |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (K) Knowledge |
| **Item Types** | Multiple Choice |
| **Cognitive Complexity Level** | Moderate |
| **Benchmark Clarification** | Student will be able to inspect cooling system hoses, pipes and heater hoses for wear, damage and proper routing and identify necessary repairs. |
| **Content Limits** | Automotive heater hoses and pipes. Items are not to include hybrid or alternative fuel vehicles. |
| **Stimulus Attributes** | Items may include illustrations, photographs and descriptions. |
| **Response Attributes** | Ability to identify damaged cooling system hoses and pipes and identify necessary repairs needed. |
| **Sample Item** | When inspecting an upper cooling system hose the technician finds which of the following conditions acceptable?  A. chafed or burned  B. firm and uncut  C. soft of spongy  D. swollen or oil soaked  **Correct Answer: B** |

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| **Benchmark Number** | 06.48 |
| **Standard** | 06.0 Demonstrate the proficiency in preparing vehicle for routine pre/post maintenance and customer services |
| **Benchmark** | Identify service considerations when equipped with a tire pressure monitoring system (TPMS). |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (K) Knowledge |
| **Item Types** | Multiple Choice |
| **Cognitive Complexity Level** | Low |
| **Benchmark Clarification** | Student will be able to identify a vehicle with equipped with a tire pressure monitoring system (TPMS) and apply appropriate service precautions. |
| **Content Limits** | Items will not include any aftermarket tires or rims. |
| **Stimulus Attributes** | Items may include illustrations, photographs and descriptions. |
| **Response Attributes** | Students should have the ability to identify vehicles equipped with a TPMS system. |
| **Sample Item** | Diane is adjusting the tire pressure on her car. Where should Diane look to determine the correct tire pressure for her car?  A. on the label by the driver’s door  B. on the label by the tire pump  C. on the label on the rim  D. on the label on the tire  **Correct Answer: A** |

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| **Benchmark Number** | 06.49 |
| **Standard** | 06.0 Demonstrate the proficiency in preparing vehicle for routine pre/post maintenance and customer services |
| **Benchmark** | Identify nitrogen-filled tires |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (K) Knowledge |
| **Item Types** | Multiple Choice |
| **Cognitive Complexity Level** | Moderate |
| **Benchmark Clarification** | Student will be able to identify vehicles that are equipped with nitrogen filled tires. |
| **Content Limits** | Tires specific to the automotive industry that are filled with nitrogen from the manufacturer or from an automotive repair facility that uses nitrogen to fill or refill the tires. |
| **Stimulus Attributes** | Items may include illustrations, photographs and descriptions. |
| **Response Attributes** | Ability to identify tires that are filled with nitrogen gas. |
| **Sample Item** | Diane is preparing to inflate her tire on her car. How can she determine if the tires on her car are filled with nitrogen?  A. by a black tire valve stem cap  B. by a green tire valve stem cap  C. by markings on the rim  D. by markings on the tire  **Correct Answer: B** |

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| **Benchmark Number** | 06.55 |
| **Standard** | 06.0 Demonstrate the proficiency in preparing vehicle for routine pre/post maintenance and customer services |
| **Benchmark** | Reinstall wheel; torque wheel fasteners to specification |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (P) Performance |
| **Item Types** | Performance Assessment |
| **Cognitive Complexity Level** | Moderate |
| **Benchmark Clarification** | Student will be able to reinstall wheels and torque wheel fasteners to factory specifications. |
| **Content Limits** | Standard (Original Equipment Manufacturer) wheel (five or six lug) and standard tapered lug nuts specific to the automotive industry. |
| **Stimulus Attributes** | Items may include illustrations, photographs and descriptions and vehicles. |
| **Response Attributes** | Demonstrate knowledge of wheel replacement and proper torque requirements. |
| **Sample Item** | A student will be instructed to remove and install a wheel and properly torque the fasteners.  Performance assessment items require more detailed instructions and a scoring rubric. The scoring rubric should have elements that will need to be included for students to earn credit. Will speed or cleanliness count? What tools should they use for this project? Does the student return all tools when the task is completed? |

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| **Benchmark Number** | 06.67 |
| **Standard** | 06.0 Demonstrate the proficiency in preparing vehicle for routine pre/post maintenance and customer services |
| **Benchmark** | Perform battery, starting, and charging system tests using appropriate tester |
| **Also Assesses** | Not Applicable |
| **(K)Knowledge (P)Performance or (B)Both** | (P) Performance |
| **Item Types** | Performance Assessment |
| **Cognitive Complexity Level** | Moderate, High |
| **Benchmark Clarification** | Student will be able to determine the correct tester to check the battery, starting and charging system and identify necessary repairs. |
| **Content Limits** | Standard 12V automotive systems. Items are not to include hybrid or alternative fuel vehicles. |
| **Stimulus Attributes** | Items may include illustrations, photographs and descriptions and vehicle batteries |
| **Response Attributes** | Demonstrate the ability to test and diagnose a battery, starting and charging system. |
| **Sample Item** | The student will be instructed to identify the appropriate tester and perform the proper test needed to check the battery and charging system and make recommendations on service needed.  Performance assessment items require more detailed instructions and a scoring rubric. The scoring rubric should have elements that will need to be included for students to earn credit. Will speed or cleanliness count? What tools should they use for this project? Does the student return all tools when the task is completed? |