North Montco Technical Career Center
1265 Sumneytown Pike, Lansdale PA 19446

Performance Evaluation/Assessment

Automotive Technology

NATEF Steering & Suspension

Standardized Integration Module (SIM)

Task 6: Wheel and Tire Diagnosis and Repair
Hours: 16
Date: 9/01/2008

Exit Outcome/Terminal Performance Objective:

- Demonstrate the ability to perform wheel and tire diagnosis and repair.

Enabling Objectives:

- Explains basic wheel and tire theory.
- Explains basic wheel and tire operation/functionality.
- Explains steps to diagnosis wheel and tire problems.
- Performs wheel and tire diagnosis.
- Identifies basic wheel and tire components.
- Explains steps to perform wheel and tire repairs and service.
- Performs wheel and tire repairs and service.
- Locate correct diagnostic, repair, service & maintenance information using ShopKey.

Mastery: All hands-on tasks must be completed to 100% accuracy and to industry standards. To achieve Mastery of this task, the student must:

1. Participate in a lecture, view either the PowerPoint presentation or video of the material.
2. Participate in a demonstration of the task.
3. Participate in a guided application of the task.
4. Practice the task without the instructor.
5. Complete task to 100% accuracy.
6. Demonstrate or practice the task with another student.

PA Academic Standards/Assessment Anchors/Eligible Content
Science
PA Academic Standard:
3.7.10.B Apply appropriate instruments and apparatus to examine a variety of objects and processes.
3.4.10.C Distinguish among the principles of force and motion.
Assessment Anchor:
S11.A.2.2 Evaluate appropriate technologies for a specific purpose, or describe the information the instrument can provide.
S11.C.3.1 Use the principles of motion and force to solve real-world challenges.

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Eligible Content:
S11.A.2.2.1 Evaluate appropriate methods, instruments, and scale for precise quantitative and qualitative observations
S11.C.3.1.5 Calculate the mechanical advantage of moving an object by using a simple machine.
S11.C.3.1.6 Identify elements of simple machines in compound machines.

Math

PA Academic Standard:
2.9.11.F Use the properties of angles, arcs, chords, tangents and secants to solve problems involving circles.
2.9.11.G Solve problems using analytic geometry.
Assessment Anchor:
M11.C.1.1 Identify and/or use parts of circles and segments associated with circles.
M11.C.3.1 Solve problems using analytic geometry.
Eligible Content:
M11.C.1.1.1 Identify and/or use the properties of a radius, diameter and/or tangent of a circle (given numbers should be whole.)
M11.C.1.1.2 Identify and/or use the properties of arcs, semicircles, inscribed angles and/or central angles.
M11.C.3.1.1 Calculate the distance and/or midpoint between 2 points on a number line or on a coordinate plane (formula provided on the reference sheet).

Language Arts:

PA Academic Standard:
1.1.11.G Demonstrate after reading understanding and interpretation of both fiction and nonfiction text, including public documents.
1.2.11.A Read and understand essential content of informational texts and documents in all academic areas.
Assessment Anchor:
R11.A.2.5 Summarize a nonfictional text as a whole.
R11.A.2.6 Identify, describe, and analyze genre of text.
Eligible Content:
R11.A.2.5.1 Summarize the major points, processes, and/or events of a nonfictional text as a whole.
R11.A.2.6.1 Identify and/or describe the author's intended purpose of text.
R11.A.2.6.1 Describe and/or analyze examples of text that support the author's intended purpose.

Social Studies:

PA Academic Standard:
6.1.12.C Assess the strength of the regional, national and/or international economy and compare it to another time period based upon economic indicators.

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Career Education & Work

PA Academic Standard:

13.3.11.B Evaluate team member roles to describe and illustrate active listening techniques

SAFETY NOTICE: In addition to following all North Montco Technical Career Center Automotive Technology Program Safety and MSDS Policies, refer to the specific vehicle's manufacturer's shop manual for complete safety details when performing these tasks.

NOTE: ***Safety is not an option!*** Although this information is very thorough, it is general and does not fully cover all safety rules, procedures and hazards.

Performance Evaluation

PERFORMANCE CRITERIA	Needs Practice	Satisfactory
Safety glasses must be worn at all times! Read all safety materials provided and observe all safety precautions demonstrated by your instructor.		
Inspect tire condition; identify tire wear patterns; check and adjust air pressure; determine necessary action. P-1		
Diagnose wheel/tire vibration, shimmy, and noise; determine necessary action. P-2		
Rotate tires according to manufacturer's recommendations. P-1		
Measure wheel, tire, axle flange, and hub runout; determine necessary action. P-2		
Diagnose tire pull problems; determine necessary action. P-2		
Dismount, inspect, and remount tire on wheel; Balance wheel and tire assembly (static and dynamic). P-1		
Dismount, inspect, and remount tire on wheel equipped with tire pressure monitoring system sensor. P-2		
Reinstall wheel; torque lug nuts. P-1		
Inspect tire and wheel assembly for air loss; perform necessary action. P-1		
Repair tire using internal patch. P-1		
Inspect, diagnose, and calibrate tire pressure monitoring system. P-2		
Complete an Outline, Reading Grid, Summary and "Last-Word" Worksheet Packet for Chapters 1-10, 80, 65, 66, 67, 68, 69, 70 and 74 in *Modern Automotive Technology*		

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Score a 80% or better on *Modern Automotive Technology* chapter tests 1-10 & 80		
Score a 80% or better on *Modern Automotive Technology* chapter tests 65, 66, 67, 68, 69, 70 and 74		
Score 80% or better on Intro Math Lessons 1-5 & Math Lessons 1, 12 and 13 Homework Sheets		
Score 80% or better on ASE Practice Test 4		
Earn a passing grade on the AYES Steering and Suspension Exit Exam A-4		

NOTES: