

BRAINERD HIGH SCHOOL

Curriculum Map

Name: Mike Markum Course: Steering and Suspension Date: August 2007
 Pre-Assessment: Pretest
 Mid-Term Assessment: Nine week exam, competency check
 Final Assessment: Exam and competency checklist

<u>Month</u>	<u>Content</u>	<u>Essential Question(s)</u>	<u>Standards (SPI's)</u>	<u>Literacy Focus</u>	<u>Assessment</u>
Aug	<ul style="list-style-type: none"> • Self improvement, leadership skills • Safety procedures • OSHA and EPA requirements • Front suspension systems • Tire balancing, rotations, and wheel assemblies 	<p>How do leadership skills improve your chance of having a successful career?</p> <p>Describe safety procedures practiced in an automotive repair facility.</p> <p>What types of problems occur when an automobile's suspension system is not working properly?</p>	<p>2.0 Students will demonstrate automotive technology safety practices, including OSHA and EPA requirements for an automotive repair facility.</p> <p>5.0 Students will properly test, diagnose, service, and repair automotive front suspension systems.</p> <p>7.0 Students will use proper equipment and procedures to set front and rear wheel alignment angles.</p> <p>8.0 Students will properly test, diagnose, service, and repair wheel and tire</p> <p>9.0 Students will demonstrate communication skills required in the automotive service industry.</p>	<p>Students will focus on vocabulary development. (vocabulary specific to the automotive industry).</p> <p>Students will interpret OSHA and EPA requirements.</p> <p>Students will begin an on-line safety course.</p>	<input checked="" type="checkbox"/> Project/Presentation <input checked="" type="checkbox"/> Teacher Observation <input type="checkbox"/> Show and Tell <input checked="" type="checkbox"/> Self-Assessment <input checked="" type="checkbox"/> Test/Quiz <input checked="" type="checkbox"/> Other <u>Labwork</u>
Sept	<ul style="list-style-type: none"> • Safety • Develop a safety portfolio for equipment • Electronic front suspension systems • Control arms • Shock absorbers • Stabilizer bars • Rear suspension systems • Communication 	<p>What are the functions of the suspension system?</p> <p>When compressing a coil spring, what precautions must be taken?</p> <p>What components replace springs and shock absorbers in an active suspension system?</p>	<p>2.0 Students will demonstrate automotive technology safety practices, including OSHA and EPA requirements for an automotive repair facility.</p> <p>5.0 Students will properly test, diagnose, service, and repair automotive front suspension</p>	<p>Students will learn how to look up procedures for wheel alignment to determine proper torque and specialized tools needed to perform the procedure.</p>	<input checked="" type="checkbox"/> Project/Presentation <input checked="" type="checkbox"/> Teacher Observation <input type="checkbox"/> Show and Tell <input type="checkbox"/> Self-Assessment <input checked="" type="checkbox"/> Test/Quiz <input checked="" type="checkbox"/> Other <u>Labwork</u>

	<ul style="list-style-type: none"> • Suspension and steering problem solving • Teamwork 		<p>systems.</p> <p>6.0 Students will properly test, diagnose, service, and repair automotive rear suspension systems.</p> <p>8.0 Students will demonstrate communication skills required in the automotive service industry.</p>		
Oct	<ul style="list-style-type: none"> • Hydraulics • Properties of liquids • Steering system diagnosis • Steering columns • Steering linkage components • Power steering pumps • Control arm and spring assemblies • MacPherson struts • Repair/replacement of rear suspension components • Teamwork • Work ethics and personal job success • Customer service • Explore career opportunities 	<p>What science concepts apply to suspension and steering system technology?</p> <p>How is rotary motion of the steering wheel changed to linear movement of the tie rod?</p> <p>Discuss three career opportunities in the automotive field and their responsibilities.</p>	<p>3.0 Students will apply fundamental science concepts to automotive suspension and steering systems technology.</p> <p>4.0 Students will properly test, diagnose, service, and repair automotive steering systems.</p> <p>5.0 Students will properly test, diagnose, service, and repair automotive front suspension systems.</p> <p>6.0 Students will properly test, diagnose, service, and repair automotive rear suspension systems.</p> <p>8.0 Students will demonstrate communication skills required in the automotive service industry.</p> <p>9.0 Students will demonstrate interpersonal and employability skills required in the automotive service industry.</p>	<p>Students will practice reading a variable-ratio steering graph.</p> <p>Students will practice using service manuals to locate specific information.</p>	<input type="checkbox"/> Project/Presentation <input checked="" type="checkbox"/> Teacher Observation <input type="checkbox"/> Show and Tell <input type="checkbox"/> Self-Assessment <input checked="" type="checkbox"/> Test/Quiz <input checked="" type="checkbox"/> Other <u>Labwork</u>
Nov	<ul style="list-style-type: none"> • Power and manual steering gear boxes • Rack and pinion steering • Steering and tire wear problems • Communication • Problem solving • Teamwork • Customer service skills • Management roles in the 	<p>What is a bead-breaker used for?</p> <p>Why is it important to follow the proper procedure when removing or installing a tire and wheel assembly?</p> <p>How do you determine</p>	<p>1.0 Students will demonstrate leadership, citizenship, and teamwork skills required for success in the school, community, and workplace.</p> <p>2.0 Students will demonstrate automotive technology safety practices, including</p>	<p>Students will learn how to read a VIN number and interpret the information.</p> <p>Students will learn how to read and understand the information on a tire sidewall.</p>	<input type="checkbox"/> Project/Presentation <input checked="" type="checkbox"/> Teacher Observation <input type="checkbox"/> Show and Tell <input type="checkbox"/> Self-Assessment <input checked="" type="checkbox"/> Test/Quiz <input checked="" type="checkbox"/> Other <u>Labwork</u>

	industry	tire diameter?	<p>OSHA and EPA requirements for an automotive repair facility.</p> <p>3.0 Students will apply fundamental science concepts to automotive suspension and steering systems technology.</p> <p>4.0 Students will properly test, diagnose, service, and repair automotive steering systems.</p> <p>5.0, 6.0 Students will properly test, diagnose, service, and repair automotive front/rear suspension systems.</p> <p>7.0 Students will use proper equipment and procedures to set front and rear wheel alignment angles.</p> <p>8.0 Students will demonstrate communication skills required in the automotive service industry.</p> <p>9.0 Students will demonstrate interpersonal and employability skills required in the automotive service industry.</p>		
Dec	<ul style="list-style-type: none"> • Diagnosis and repair steering problems. • Alignment angles. • Set camber and toe. • Tire balance and rotation. • Communication skills. • Suspension problems. • Customer service. • Various opportunities in the industry. 	<p>Describe a negative and a positive camber.</p> <p>How does toe angle affect tire wear?</p> <p>How is wheel-base measured?</p> <p>How does the thrust angle affect the directional control of the vehicle?</p>	<p>7.0 Students will use proper equipment and procedures to set front and rear wheel alignment angles.</p> <p>8.0 Students will demonstrate communication skills required in the automotive service industry.</p> <p>9.0 Students will demonstrate interpersonal and employability skills required in the automotive service industry.</p>	<p>Students will continue to increase their vocabulary.</p> <p>Students will practice searching a data base to locate needed information.</p> <p>Students will explore various methods of finding employment in the automotive industry (on-line, newspapers)</p>	<input type="checkbox"/> Project/Presentation <input checked="" type="checkbox"/> Teacher Observation <input type="checkbox"/> Show and Tell <input checked="" type="checkbox"/> Self-Assessment <input checked="" type="checkbox"/> Test/Quiz <input checked="" type="checkbox"/> Other <u>Labwork</u>