

# Unit 8: Suspension

Content Area: **Applied Technology**  
Course(s):  
Time Period: **Marking Period 4**  
Length: **2-3 weeks**  
Status: **Published**

## Summary

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The operation and repair of the suspension system will be explored including spring types, shock absorbers, and struts. Activities will include removal and reassembly of suspension components and hands-on tasks of system operation. Students will review proper tire maintenance, how to mount and balance a tire, and how to diagnose simple tire-related problems. Emphasis will be placed on safety and proper use of shop equipment.

July 2024

## Essential Questions/Enduring Understandings

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### Essential Questions:

- How does the suspension systems work to maintain vehicle stability and control?
- What are problems that could occur in these systems and what are some methods of repair?

### Enduring Understandings:

- knowledge of the suspension system is essential to be able to correctly diagnose and repair it.
- proper diagnostic skills and procedures will enable them to properly repair a suspension system concern.
- safety is always a concern and practicing safety is a habit that needs to be practiced at all times.

## Objectives

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### Students Will Know:

- the proper safety procedures while working on the suspension system.
- the specialized vocabulary related to the automotive suspension systems.
- the major components of the suspension system, how they operate, and diagnostic procedures to determine common problems.
- how to perform basic suspension tests and determine the proper repair.

### Students Will be Skilled At:

- diagnosis and replacement of Suspension System components

- practicing safety procedures while replacing components.
- communicating repair procedures to others
- give a verbal description of and name key components.

## Learning Plan

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- Preview the essential questions and connect to learning throughout the unit
- Teacher presentation and student research into steering and suspension related components.
- Modern Automotive Technology text and workbook assignments.
- Hands on job sheets on steering and suspension related repairs and maintenance.
- Writing prompt on steering and suspension safety.
- Closing discussion.
- Use of a cooperative learning technique to evaluate unit mastery.
- Written test on steering and suspension.

## Assessment

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- **Formative**
  - answer the essential questions.
  - exit tickets
  - participate in research and discussions regarding steering and suspension maintenance and repair
  - demonstrate safe work habits, when working with and around related equipment.
  - inspect a steering and/or suspension concern using task sheets designed for specific areas of the system
  - complete hands-on tasks that demonstrate knowledge, skills, and understandings gained through this unit of study. Including but not limited to: performing an inspection of a steering and/or suspension to diagnose an reported problem. Removal, disassembly, reassembly and installation of major steering and suspension systems' components.
  - give a verbal description of each system and name key components.
- **Summative**
  - complete a written test on suspension
  - complete writing prompts to show understanding of each area.
- **Alternative**
  - research and present on suspension system of a car in the shop
- **Benchmark**
  - MidTerm/Final Exam

## Materials

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Modern Automotive Technology Text and Workbook

## Standards

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### Standards

- NJ Learning Standards

**ELA.L.KL.9–10.2** Apply knowledge of language to make effective choices for meaning, or style and to comprehend more fully when reading, writing, speaking or listening.

**ELA.L.KL.9–10.2.A** Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level.

**ELA.L.KL.9–10.2.C** Demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.
- Computer Science and Design

**CS.9-12.8.1.12.CS.3** [*Performance Expectation*] - Compare the functions of application software, system software, and hardware.

**CS.9-12.8.1.12.CS.4** [*Performance Expectation*] - Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors.

**CS.9-12.8.2.12.EC.1** [*Performance Expectation*] - Analyze controversial technological issues and determine the degree to which individuals, businesses, and governments have an ethical role in decisions that are made.
- NJ Career Readiness

**WRK.9.2.12.CAP.4** [*Performance Expectation*] - Evaluate different careers and develop various plans (e.g., costs of public, private, training schools) and timetables for achieving them, including educational/training requirements, costs, loans, and debt repayment.

**WRK.9.2.12.CAP.5** [*Performance Expectation*] - Assess and modify a personal plan to support current interests and post-secondary plans.

**WRK.9.2.12.CAP.2** [*Performance Expectation*] - Develop college and career readiness skills by participating in opportunities such as structured learning experiences, apprenticeships, and dual enrollment programs.
- Mathematics

**MATH.9-12.F.BF.A.1** [*Standard*] - Write a function that describes a relationship between two quantities
- ELA Practices

**ELA.L.SS.9–10.1** Demonstrate command of the system and structure of the English language when writing or speaking.

**ELA.L.KL.9–10.2** Apply knowledge of language to make effective choices for meaning, or style and to comprehend more fully when reading, writing, speaking or listening.

**ELA.L.VL.9–10.3.E** Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).

**ELA.RL.CR.9–10.1** Cite a range of thorough textual evidence and make relevant connections to strongly support analysis of multiple aspects of what a literary text says explicitly and inferentially, as well as including determining where the text leaves matters uncertain.

## Integrated Accommodations and Modifications

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[https://docs.google.com/spreadsheets/d/11Ej-WZghahz\\_kVoSbGd5jrLwq1j70EoM4UU5jXISQZs/edit?usp=sharing](https://docs.google.com/spreadsheets/d/11Ej-WZghahz_kVoSbGd5jrLwq1j70EoM4UU5jXISQZs/edit?usp=sharing)