Unit 8: Suspension

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

Summary

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

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

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

- 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

- **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

Modern Automotive Technology Text and Workbook

Corresponding Job Sheets

Spring , Shocks , Struts

Automotive Data System

Standards

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

https://docs.google.com/spreadsheets/d/1lEj-

WZghahz_kVoSbGd5jrLwq1j70EoM4UU5jXISQZs/edit?usp=sharing