Unit 4 ELECTRICAL

Content Area: **Applied Technology**
Course(s):
Time Period: **Marking Period 1**
Length: **10 - 15 class periods**
Status: **Published**

Brief Summary of Unit

This unit expands on the student's knowledge of the electrical system. In this unit, they will perform a variety of tasks pertaining to automotive electrical including but not limited to the battery, alternator, starter, and various electrical circuits. Each lesson will be presented in the form of a teacher-led discussion with accompanying visual and internet integrations. Students will be required to use computer-based software and textbooks for reference material and diagnostic tools. The objective of this course is to instill confidence in the student's critical thinking and diagnostic ability, as well as their problem-solving skills and ability to function in a group atmosphere.

July 2022

ESESSENTIAL QUESTIONS/ ENDURING UNDERSTANDINGS

Essential Questions

- What is the automotive electrical system and how does it create and distribute electrical energy?
- What are the precautions that need to be taken when servicing electrical system components?
- How do you test for opens or shorts in an electrical circuit and what tools are used?

Enduring Understandings

- Students will understand the major parts and the basic function of each electrical system component. Their understanding will include common problems in the system, how are they diagnosed, and what the necessary repairs will include.
- The students will also understand that the electrical system is a critical area of automotive repair, and the necessary precautions to be taken while working on the system.

OBJECTIVES

STUDENT WILL KNOW

- How to explain the principles of an automotive electrical system and be able to identify the major components of an electrical system.
- How to define the basic functions and operation of the electrical system.
- How to use diagnostic equipment such as a Digital Multi-Meter, and Scan Tools.
- The function and operation of input sensors, output sensors PCM's relays, and switches.

STUDENTS WILL BE SKILLED AT

- Diagnosis of the automotive electrical system and electrical components.
- Practicing good safety procedures while servicing the electrical system.
- Removal and repair of common electrical components.

LEARNING PLAN

- Teacher-led discussions pertaining to the electrical system.
- Hands-on Job Sheets on electrical component location, operation, and repair.
- Use of the text and workbook Modern Automotive Technology.
- Written tests and writing prompts on related topics.
- Group discussions and essential questions about electrical components and function throughout the unit.

ASSESSMENT

Summative

Written tests on electrical components and their function.

Hands on Job Sheets pertaining to the electrical system.

Writing prompts and essays on the electrical system.

Formative

Verbal questioning throughout unit.

Visual observations.

Alternative

Student presentation on the electrical system.(i.e. point out location of key components and explain their function).

Benchmark

Midterm/Final Exam

MATERIALS

Text Book: Modern Automotive Technology

Job Sheets

Visual aids

Videos

Shop vehicles

All Data Automotive Internet Program

Google

Electrical, Pneumatic, and Hydraulic tools

Various hand tools

Accomodations

https://docs.google.com/spreadsheets/d/1CvoX6NXdGUPtTPcEqPOsnWbqpDLS4Ego1W1eaIrGYTo/