Anoka-Hennepin Secondary Curriculum Unit Plan

Department:	Career and Technical Education	Course:	Advanced Automotive I: Brakes	Unit 1 Title:	Fundamentals of Automotive Service Industry	Grade Level(s):	11-12
Assessed Trimester:		Pacing:		Date Created:		Last Revision Date:	11/2014

Course Understandings: *Students will understand:*

- Specified academic and technical content, make connections, and apply in the automotive industry.
- The various levels of effective communication and its integral role in working with people and technology.
- How problem solving is a scientific process that translates into both personal and business situations.
- The automotive industry as a multifaceted system integrating policies and procedures at many levels.
- Resource management and obtaining information within diverse situations.

DESIRED RESULTS (Stage 1) - WHAT WE WANT STUDENT TO KNOW AND BE ABLE TO DO?

Established Goals

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Transfer

Students will be able to independently use their learning to: (product, high order reasoning)

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Meaning

Unit Understanding(s):

Students will understand:

- The systems of engineering, science, and technology that apply to automotive diagnosis and service
- Governing policies and procedures on safety and hazard prevention and their effects on personal and shop operation uses
- The resources and tools of the automotive trade within many systems
- Career pathways available in the automotive industry
- How communication has many different components and success in the industry thrives on expertise on all levels

Essential Question(s):

Students will keep considering:

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Acquisition

Knowledge - Students will:

- The position of elements in the periodic table to the following:
  - Their atomic structure
  - The way they bond to one another and to other elements based on their atomic structure
  - The way these bonding characteristics affect their properties
- Basic types of chemical reactions
- Basic units and principles of optics
- Identification of common hand and power tools
- Construction and operation of gasoline engines, automatic transmission

Skills - Students will:

- Predict the properties of elements based on their atomic structure and bonding characteristics
- Investigate and analyze chemical reactions
- Identify, interpret, and apply the meaning of basic physics, concept of mechanics, forces, thermodynamics, heat, electricity, magnetism, optics, wave motion, acoustics, and atomic and nuclear physics
- Identify and interpret the basic units of waves and acoustics
- Diagnose and repair gasoline engine components, automatic transmission, heating, ventilation, and air conditioning systems

• The principles and functions of heating, ventilating, and air conditioning systems • Appropriate formats for communication • Dimensions, symbols, types of lines, views, and scale in blueprint reading • Algebraic or service and repair procedures and geometric concepts as they relate to blueprint reading • Understand the factors that influence solving problems and making decisions • Appropriate types of measurement for a particular production process • The impact of government regulations and business and industry procedures on the performance of particular job functions and services • Safety requirements and appropriate use of safety equipment • Mechanisms to identify hazards • A wide range of resources for use in obtaining materials in a given situation • Hardware, commonly used software, and online services • Factors that affect goals, self esteem, • Lifestyle, and the family and examine short and long term consequences **Reasoning - Students will:** •	• Exhibit good customer relations • Differentiate between consumer rights and business responsibilities • Develop and revise technical documents to express complex ideas and concepts • Demonstrate proper procedures for reading and interpreting blueprints and diagrams in production or service technology • Formulate, implement, monitor, and revise action plans • Demonstrate general and precision techniques and calculations • Differentiate among federal, state, and local regulations; the various agencies involved in government oversight; and local business and industry procedures and services • Inspect and implement safety programs and document results • Participate and employ the appropriate role within a group using effective communication, interpersonal skills, and learning techniques with people from diverse backgrounds • Classify hazards and analyze material safety data sheets • Implement methods of accident and hazard prevention in a production, service, or laboratory environment • Conduct routine maintenance, repair, and write computer programs as necessary • Apply knowledge of self, educational opportunities, and occupations to develop a career plan

Common Misunderstandings	**Essential new vocabulary**
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