

# Automotive Technology 6<sup>th</sup> Edition

## Chapter 13 – Scientific Principle and Materials

### Lesson Plan



#### **CHAPTER SUMMARY:**

1. Scientific Method
  2. Energy principles, torque, work, power and horsepower
  3. Newton's Laws of Motion, kinetic energy, and inertia
  4. Mechanical principles, heat and temperature, and Acids and bases
  5. Gas laws, sound, and acoustics
  6. Plastics, iron and steel, SAE steel designations, and aluminum alloys
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#### **OBJECTIVES:**

1. Discuss the use of scientific methods and energy principles in solving problems.
  2. Explain the relationship between torque, work, power, and horsepower.
  3. Explain the importance of Newton's laws of motion, kinetic energy, inertia, and mechanical principles in brake design.
  4. Discuss the concepts of heat, temperature, pH scale, gas laws, and acoustics.
  5. Describe the types of plastics, iron, steel, and aluminum alloys.
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**RESOURCES:** (All resources may be found at <http://www.jameshalderman.com>) Internet access required to hyperlink.

1. **Task Sheet:** Water Boil Experiment
  2. Chapter PowerPoint
  3. Chapter Crossword Puzzle and Word Search
  4. Videos: [\(A0\) Automotive Fundamentals Videos](#)
  5. Animations: [\(A0\) Automotive Fundamentals Animations](#)
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#### **ACTIVITIES:**

1. **Task Sheet:** Have students complete Water Boil Experiment Task Sheet.
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#### **ASSIGNMENTS:**

1. Chapter crossword and word search puzzles.
  2. Complete end of chapter 10 question quiz.
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#### **CLASS DISCUSSION:**

1. Review and group discussion chapter [Frequently Asked Questions](#) and [Tech Tips](#) sections.
  2. Review and group discussion of the five (5) chapter [Review Questions](#).
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#### **NOTES AND EVALUATION:**

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