

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

## Chapter 97 – Brake Principles and Friction Materials

### Lesson Plan



#### **CHAPTER SUMMARY:**

1. Energy and work, inertia, and the coefficient of friction
  2. Brake fade, deceleration rates, brake friction materials, and asbestos
  3. Semimetallic friction materials and non-asbestos/ceramic friction materials
  4. Carbon fiber friction materials, brake pads and environmental concerns, and edge codes
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#### **OBJECTIVES:**

1. Discuss the energy principles that apply to brakes.
  2. Discuss the friction principles that apply to brakes.
  3. Describe how brakes can fade due to excessive heat.
  4. Describe how deceleration rates are measured.
  5. Discuss friction materials used in brake systems.
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**RESOURCES:** (All resources may be found at <http://www.jameshalderman.com>) Internet access required to hyperlink.

1. **Task Sheet:** Brake System Principles
  2. **Task Sheet:** Brake Friction Material Identification
  3. Chapter PowerPoint
  4. Chapter Crossword Puzzle and Word Search
  5. Videos: [\(A5\) Brakes Videos](#)
  6. Animations: [\(A5\) Brakes Animations](#)
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#### **ACTIVITIES:**

1. **Task Sheet:** Have students complete Brake System Principles Task Sheet.
  2. **Task Sheet:** Have students complete Brake Friction Material Identification 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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