

# Automotive Technology 7<sup>th</sup> Edition

## Chapter 94 – Braking Principles and Friction Materials

### Lesson Plan



#### **CHAPTER SUMMARY:**

1. Energy and Work, Inertia, Coefficient of Friction, Brake Fade, and Deceleration Rates
2. Brake Friction Materials, Asbestos, and Semimetallic Friction Materials
3. Non-Asbestos/Ceramic Friction Materials, Brake Pads and Environmental Concerns, and Edge Codes



#### **OBJECTIVES:**

1. Discuss the energy principles that apply to brakes.
2. Discuss inertia as it applies to brakes.
3. Discuss the friction principles that apply to brakes.
4. Describe how brakes can fade due to excessive heat.
5. Describe how deceleration rates are measured.
6. Describe brake friction materials.
7. Discuss asbestos as it applies to brakes.
8. Describe semimetallic friction materials.
9. Discuss non-asbestos/ceramic friction materials.
10. Explain brake pad environmental concerns.
11. Discuss the use of edge codes on friction materials.



#### **RESOURCES:** (All resources may be found at [jameshalderman.com](http://jameshalderman.com))

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



#### **ACTIVITIES:**

1. Task Sheet: Brake System Principles
2. Task Sheet: Brake Friction Material Identification
3. Crossword Puzzle and Word Search



#### **ASSIGNMENTS:**

1. Chapter crossword and word search puzzles from the website.
2. Complete end of chapter quiz from the textbook.
3. Complete multiple choice and short answer quizzes downloaded from the website.



#### **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](#).



#### **NOTES AND EVALUATION:**