**Automotive Heating and Air Conditioning 9th Edition**

**Chapter 3 – The Refrigeration Cycle**

**Lesson Plan**

**CHAPTER SUMMARY:**

1. The Refrigeration Cycle, How the AC System Works, Expansion Devices, and Evaporators

2. Condensers, Refrigerant Charge Level, and Evaporator Icing Controls

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**OBJECTIVES:**

1. Prepare for the ASE Heating and Air Conditioning (A7) certification test content area “A” (A/C System Service, Diagnosis and Repair).

2. Define the terms superheat and sub cooling.

3. Discuss pressure-temperature relationship.

4. Explain heating and cooling load.

5. Explain flooded versus starved evaporator.

6. Describe saturated liquid/vapor.

7. Explain how the refrigeration system works.

8. Identify the low and high side of an A/C system.

9. Explain the purpose and function of evaporators in an A/C system.

10. Explain the purpose and function of thermal expansion valves and orifice tube systems.

11. Explain the purpose and function of condensers.

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

1. Task Sheet: A/C Component Purpose and Function

2. Chapter PowerPoint

3. [Crossword Puzzle and Word Search (A7)](https://jameshalderman.com/a7_puzzles_lib_page/)

4. [Videos: (A7) Heating & Air Conditioning](https://jameshalderman.com/a7_vid_lib_page/)

5. [Animations: (A7) Heating & Air Conditioning](https://jameshalderman.com/a7_anim_lib_page/)

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**ACTIVITIES:**

1. Task Sheet: A/C Component Purpose and Function

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**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.

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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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