**Automotive Electricity and Electronics**

**Chapter 19 –** **Battery Testing and Service**

**Lesson Plan**

**CHAPTER SUMMARY:**

1. Battery Service Safety Considerations and Symptoms of a Weak or Defective Battery

2. Battery Maintenance, Battery Voltage Test, Hydrometer Testing, and Battery Load Testing

3. Electronic Conductance Testing, Battery Charging, and Battery Charge Time

4. Float-Type Battery Chargers, Jump Starting, and Battery Electrical Drain Test

5. Maintaining Electronic Memory Functions and Battery Symptom Guide

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**OBJECTIVES:**

1. List the precautions for working with batteries.

2. List the symptoms of a weak or defective battery.

3. Describe how to inspect and clean terminals and hold-downs.

4. Discuss how to test batteries for open circuit voltage and specific gravity.

5. Describe how to perform a battery load test and a conductance test.

6. Discuss how to perform a battery drain test.

7. Describe how to prevent loss of memory functions and reinitialize memory functions.

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

1. Task Sheet: Key Off Battery Drain

2. Task Sheet: Battery State-of-Charge

3. Task Sheet: Battery Capacity Test

4. Task Sheet: Electronic Memory Saver Usage

5. Task Sheet: Reinitialization

6. Task Sheet: Service and Replace the Battery

7. Task Sheet: Battery Charging

8. Task Sheet: Jump Starting

9. Task Sheet: Hybrid Auxiliary Battery

10. Chapter PowerPoint

11. [Crossword and Word Search Puzzles (A6)](https://jameshalderman.com/a6_puzzles_lib_page/)

12. [Videos: (A6) Electrical/Electronic Systems](https://jameshalderman.com/a6_vid_lib_page/)

13. [Animations: (A6) Electrical/Electronic Systems](https://jameshalderman.com/a6_anim_lib_page/)

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**ACTIVITIES:**

1. Task Sheet: Key Off Battery Drain

2. Task Sheet: Battery State-of-Charge

3. Task Sheet: Battery Capacity Test

4. Task Sheet: Electronic Memory Saver Usage

5. Task Sheet: Reinitialization

6. Task Sheet: Service and Replace the Battery

7. Task Sheet: Battery Charging

8. Task Sheet: Jump Starting

9. Task Sheet: Hybrid Auxiliary Battery

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**Lesson Plan**

**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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