

# Automotive Electrical and Engine Performance - 9th edition

## Ch4: Series, Parallel, and Series-Parallel Circuits

### Lesson Plan



#### **CHAPTER SUMMARY:**

1. Series Circuits, Ohm's Law and Series Circuits, Kirchhoff's Voltage Law, and Series Circuit Laws
2. Parallel Circuits, Kirchhoff's Current Law, and Parallel Circuit Laws
3. Determining Total Resistance in a Parallel Circuit, and Series-Parallel Circuits
4. Solving Series-Parallel Circuit Problems

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#### **OBJECTIVES:**



1. Define series circuits.
2. Discuss Ohm's law and series circuits.
3. Explain Kirchhoff's voltage law.
- 4 Explain series circuit laws.
5. Define parallel circuits.
6. Discuss Kirchhoff's current law.
7. Discuss parallel circuit laws.
8. Determine the total resistance of a parallel circuit.
9. Define series-parallel circuits.
10. Explain how to solve series-parallel problems.

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



1. Task Sheet: Parallel Circuit Worksheet #1
2. Task Sheet: Parallel Circuit Worksheet #2
3. Task Sheet: Parallel Circuit Worksheet #3
4. Task Sheet: Series Circuit Worksheet #1
5. Task Sheet: Series Circuit Worksheet #2
6. Task Sheet: Series Circuit Worksheet #3
7. Task Sheet: Series-Parallel Circuit Worksheet #1
8. Task Sheet: Series-Parallel Circuit Worksheet #2
9. Task Sheet: Series-Parallel Circuit Worksheet #3
10. Crossword Puzzle and Word Search
11. Videos: (A6) Electrical/Electronic Systems Videos
12. Animations: (A6) Electrical/Electronic Systems Animations

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#### **ACTIVITIES:**



1. Task Sheet: Parallel Circuit Worksheet #1
2. Task Sheet: Parallel Circuit Worksheet #2
3. Task Sheet: Parallel Circuit Worksheet #3
4. Task Sheet: Series Circuit Worksheet #1
5. Task Sheet: Series Circuit Worksheet #2
6. Task Sheet: Series Circuit Worksheet #3
7. Task Sheet: Series-Parallel Circuit Worksheet #1
8. Task Sheet: Series-Parallel Circuit Worksheet #2
9. Task Sheet: Series-Parallel Circuit Worksheet #3
10. Chapter PowerPoint
11. Crossword Puzzle and Word Search

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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. Ten (10) question end of Chapter Quiz.
  3. Five (5) end of chapter Review Question for class discussion.
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**NOTES AND EVALUATION:**

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