

Chapter 10 Review Chart

- Students should review the Key Ideas. Ask students to draw a labelled circuit diagram to illustrate each bullet.
- Students could work in groups. The groups could then have a contest to see who comes up with the best set of diagrams.
- Have students use *BLM 0.0-10 Chapter Key Ideas* to review the key ideas in the chapter.
- Have students review their *Chapter 10 Study Guide Outline* notes to recall what they have learned in this chapter.
- Have students complete the *Chapter 10 Quiz* found in the Student Workbook to review the vocabulary and concepts in this chapter.
- Encourage students to visit the online quiz centre on the Nelson Science website and complete the *Chapter 10 Self Quiz*.

Review Key Ideas and Vocabulary—Suggested Answers

1. The bulbs will light in circuit (a).
2. (b) 3.0 V
3. (c) 2.6 V
4. The current would not continue to flow through the circuit. In a series circuit, the current is the same everywhere. If there is no current in one resistor, then there is no current in the other resistors because there is no longer a complete circuit.
5. The current would continue to flow through the circuit. The other resistors still have a voltage applied to them so, according to Ohm's law, they will have a current. The other resistors form part of a complete circuit.
6. (c) A is in parallel with B, but in series with C.
7. The electrical unit for resistance (R) is the ohm (Ω). The electrical unit for voltage (V) is the volt (V). The electrical unit for current (I) is the ampere (A).
8. A coulomb is to the amount of electric charge as a volt is to voltage.
9. Ammeters are always connected in series in a circuit and voltmeters are always connected in parallel.
10. When resistors are added in series, the total resistance increases. When resistors are added in parallel, the total resistance decreases.

Time

40–60 min

Skills and Processes

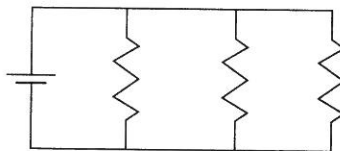
The Chapter Review provides an opportunity for students to demonstrate their understanding of and their ability to apply the key ideas, vocabulary, and skills and processes.

Program Resources

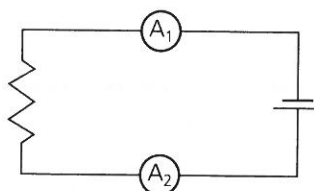
BLM 0.0-10 Chapter Key Ideas
Chapter 10 Quiz
Nelson Science Probe 9 website
www.science.nelson.com

Use What You've Learned—Suggested Answers

11. Answers may vary. To have a circuit with a total resistance that is less than the sum of the individual resistances, connect at least two of the resistors in parallel.



12. The voltage of the battery will also be 0 V.
13. The voltage of the battery will be 2.0 V.
14. The resistance of the toaster is $60\ \Omega$. The ammeter could be in either position A_1 or A_2 .



15. The voltmeter is in parallel and the ammeter is in series with the resistor.
16. The resistance of the resistor is $63\ \Omega$.
17. For a current of 500 mA, there needs to be an applied voltage of 30 V. Therefore, there needs to be 20 cells.
18. The resistance of the resistor is $26\ \Omega$.

Think Critically—Suggested Answers

19. Answers will vary. Some examples of other words that have different meanings are heat, cell, resistance, and theory.
20. The current is 1 mA. The calculator has a resistance of $6000\ \Omega$.
21. Household devices are connected in parallel. When one device is turned on, not all devices also go on.
22. The current in R_3 is 50 mA, and the current in R_4 is 250 mA.
23. The current at A_2 is 50 mA. The voltage in resistor 3 is 2 V.

Reflect on Your Learning—Suggested Answers

24. Answers will vary. Students should realize that life would be very primitive. It may be useful for students to categorize what would be affected, such as energy (house heat, hot water, toaster), information (phones, computers), and entertainment (MP3s, radios, television).