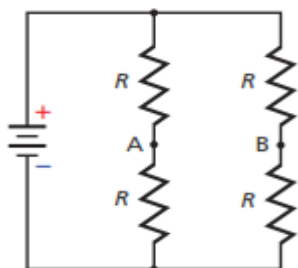


Grade 8**March 2019/20**

The following activities will be done after reading properly your centralized note about electricity and magnetism.

1. Read your centralized note about electricity then prepare a summary note that covers the unit.
2. Prepare a mind map about electricity.
3. Draw a schematic diagram of a circuit that contains a battery and a light bulb. Make sure the light bulb will light in this circuit.
4. Alex states that because $R = V/I$, if he increases the voltage, the resistance will increase. Is Alex correct? Explain.
5. You want to measure the resistance of a long piece of wire. Show how you would construct a circuit with a battery, a voltmeter, an ammeter, and the wire to be tested to make the measurement. Specify what you would measure and how you would compute the resistance.
6. Determine the power change in a circuit if the applied voltage is decreased by one-half.
7. Describe the energy conversions that occur in each of the following devices.
 - a. an incandescent light bulb
 - b. a clothes dryer
 - c. a digital clock radio
8. Which wire conducts electricity with the least resistance: one with a large cross-sectional diameter or one with a small cross-sectional diameter?
9. Describe two ways to increase the current in a circuit.
10. If the voltage across a circuit is kept constant and the resistance is doubled, what effect does this have on the circuit's current?
11. What is the effect on the current in a circuit if both the voltage and the resistance are doubled? Explain.
12. The circuit shown below has four identical resistors.



Suppose that a wire is added to connect points A and B. Answer the following questions, and explain your reasoning.

- a. What is the current through the wire?
- b. What happens to the current through each resistor?
- c. What happens to the current drawn from the battery?
- d. What happens to the potential difference across each resistor?

Grade 8**March 2019/20**

The following activities will be done after reading properly your centralized note about magnetism.

1. Read your centralized note about magnetism then prepare a summary note that covers the unit.
2. Prepare a mind map about magnetism.
3. If you hold a bar magnet in each hand and bring your hands close together, will the force be attractive or repulsive if the magnets are held in the following ways?
 - a. the two north poles are brought close together
 - b. a north pole and a south pole are brought together
4. The Figure below shows five disk magnets floating above each other. The north pole of the top-most disk faces up.



Which poles are on the top side of each of the other magnets?

5. A magnet attracts a nail, which, in turn, attracts many small tacks, as shown in the Figure below.



If the north pole of the permanent magnet is the left end, as shown, which end of the nail is the south pole?

