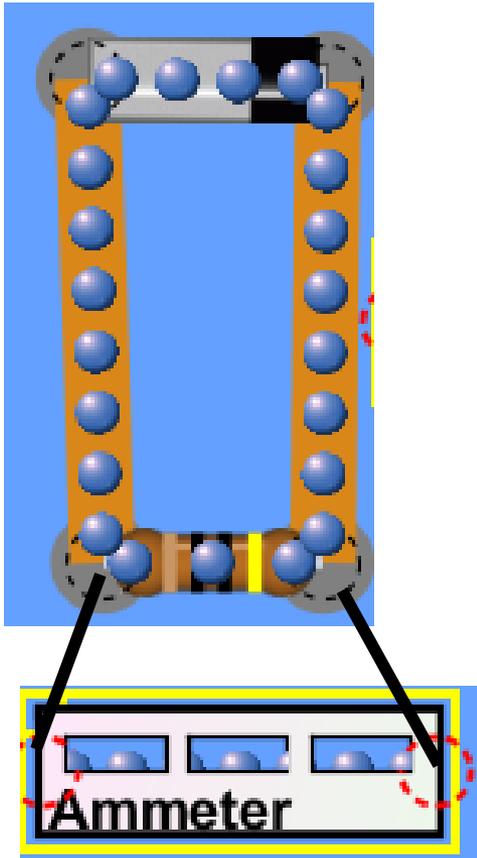


Resistors in Series and Parallel Circuits

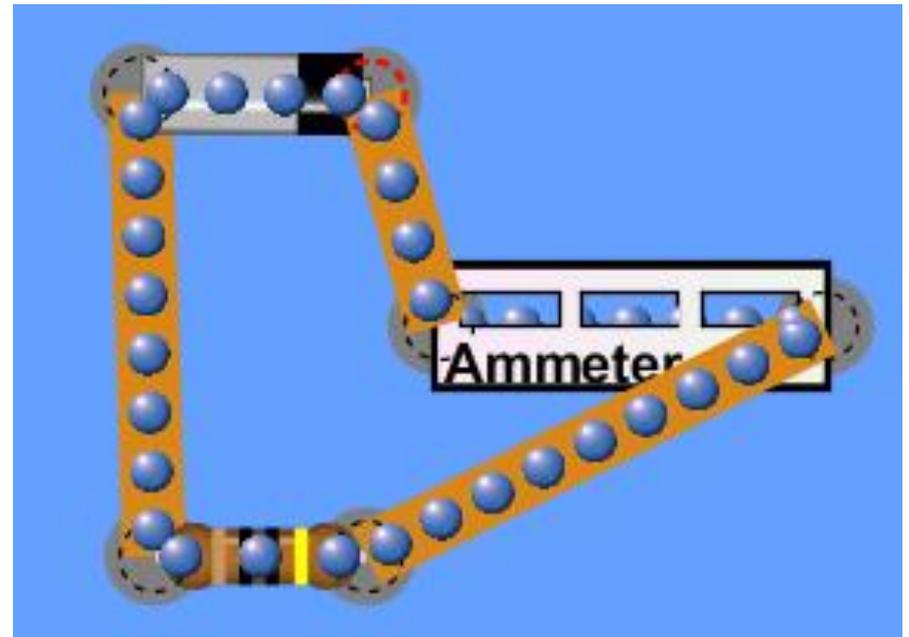
by Trish Loeblein
phet.colorado.edu

- 1. Learning Goals: Students will be able to**
- 2. Discuss basic electricity relationships in series and parallel circuits**
- 3. Analyze the differences between real circuits and the simulated ones**
- 4. Build circuits from schematic drawings**
- 5. Use a multimeter to take readings in circuits.**
- 6. Provide reasoning to explain the measurements in circuits.**

1. Which shows the correct way to use an ammeter?



A



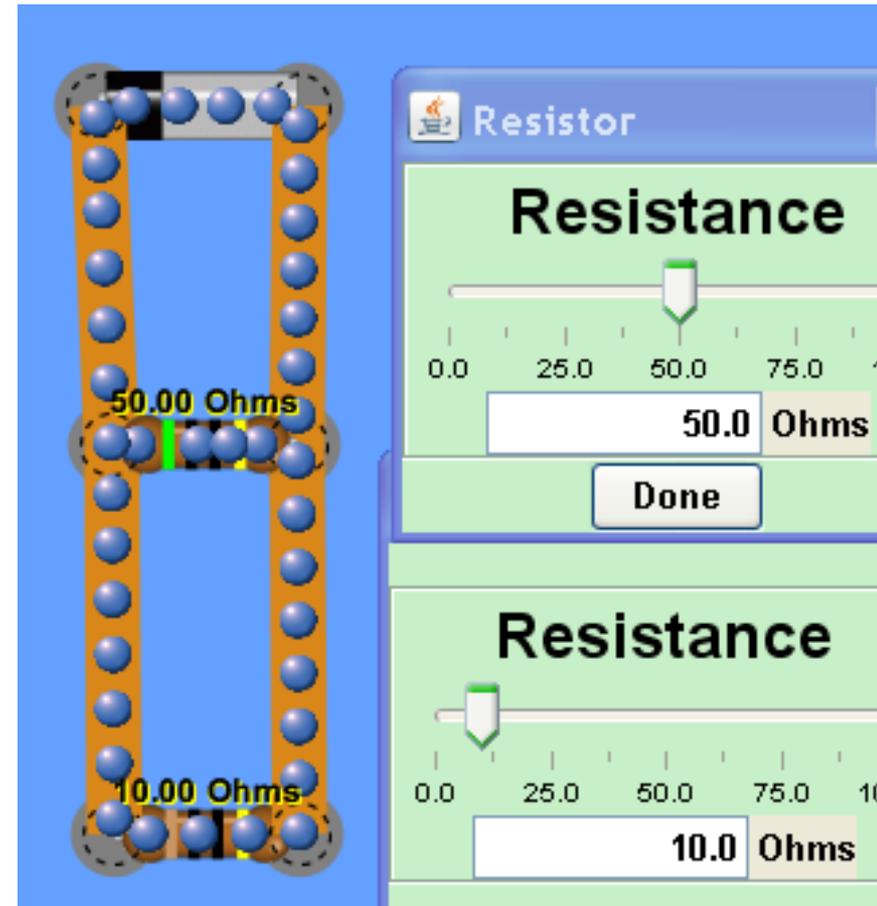
B

2. Which resistor will have the greatest current?

A. $50\ \Omega$

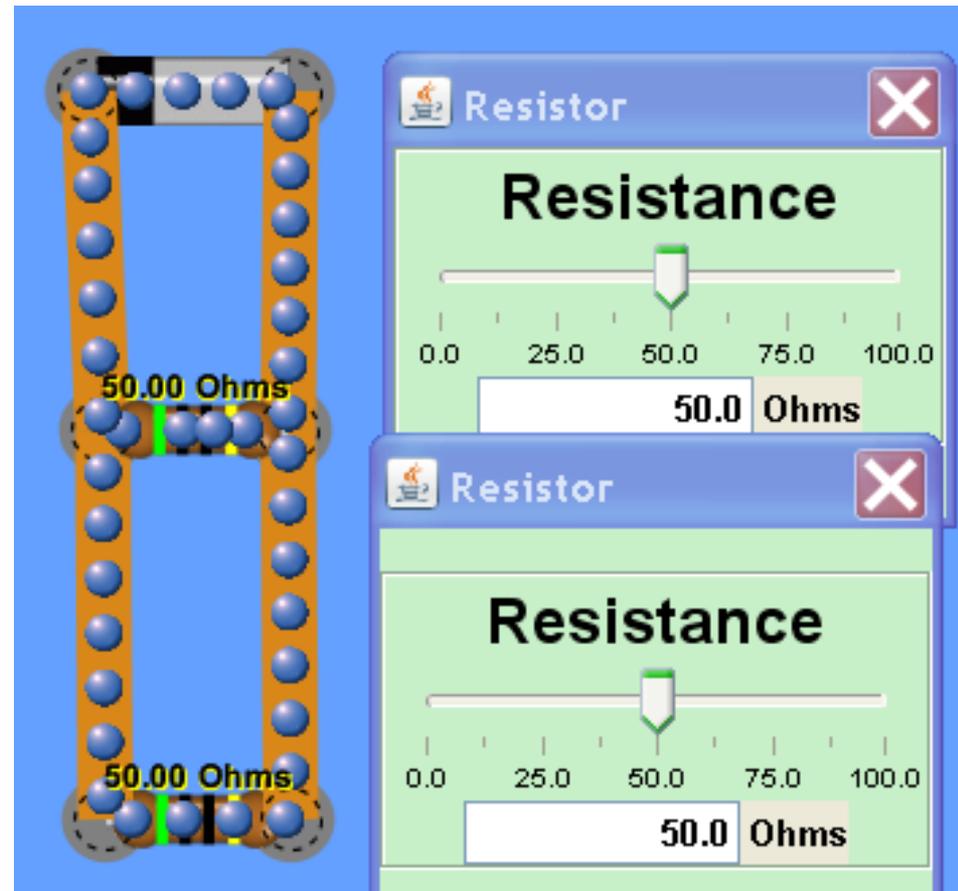
B. $10\ \Omega$

C. They have the same current



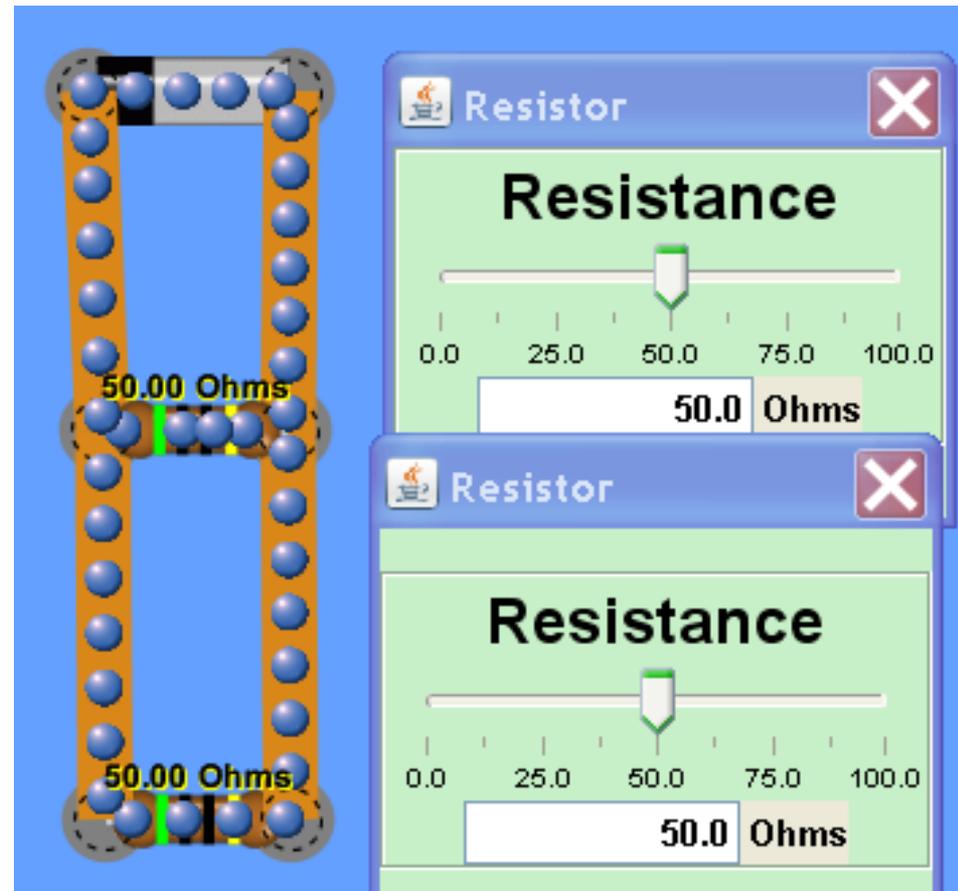
3. Which resistor will have the greatest current?

- A. The top resistor**
- B. The lower resistor**
- C. They have the same current**



4. Which resistor will have the greatest voltage?

- A. The top resistor**
- B. The lower resistor**
- C. They have the same voltage**

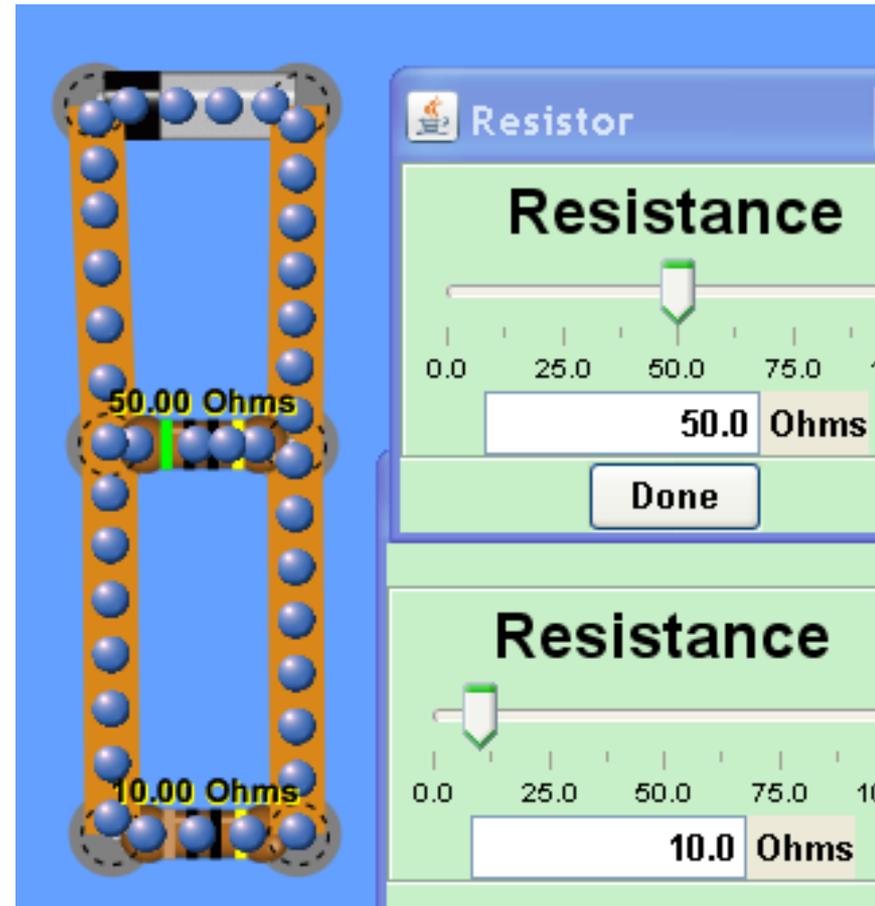


5. Which resistor will have the greatest voltage?

A. $50\ \Omega$

B. $10\ \Omega$

C. They have the same voltage

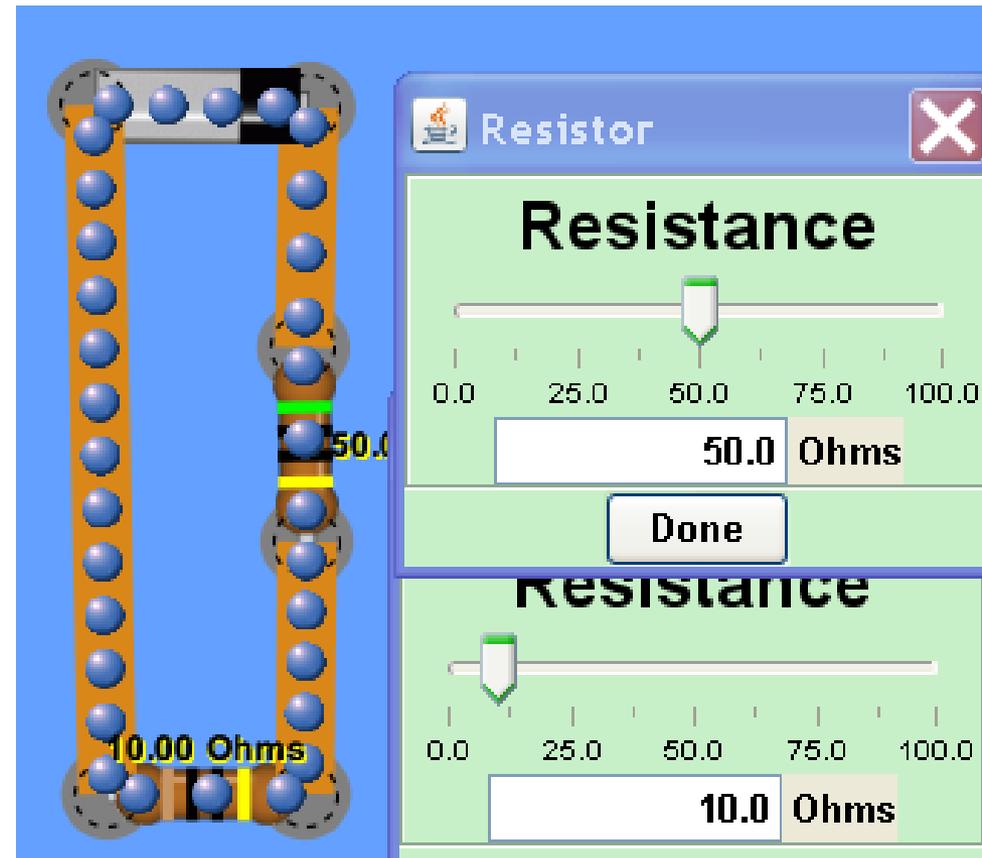


6. Which resistor will have the greatest voltage?

A. $50\ \Omega$

B. $10\ \Omega$

C. They have the same voltage

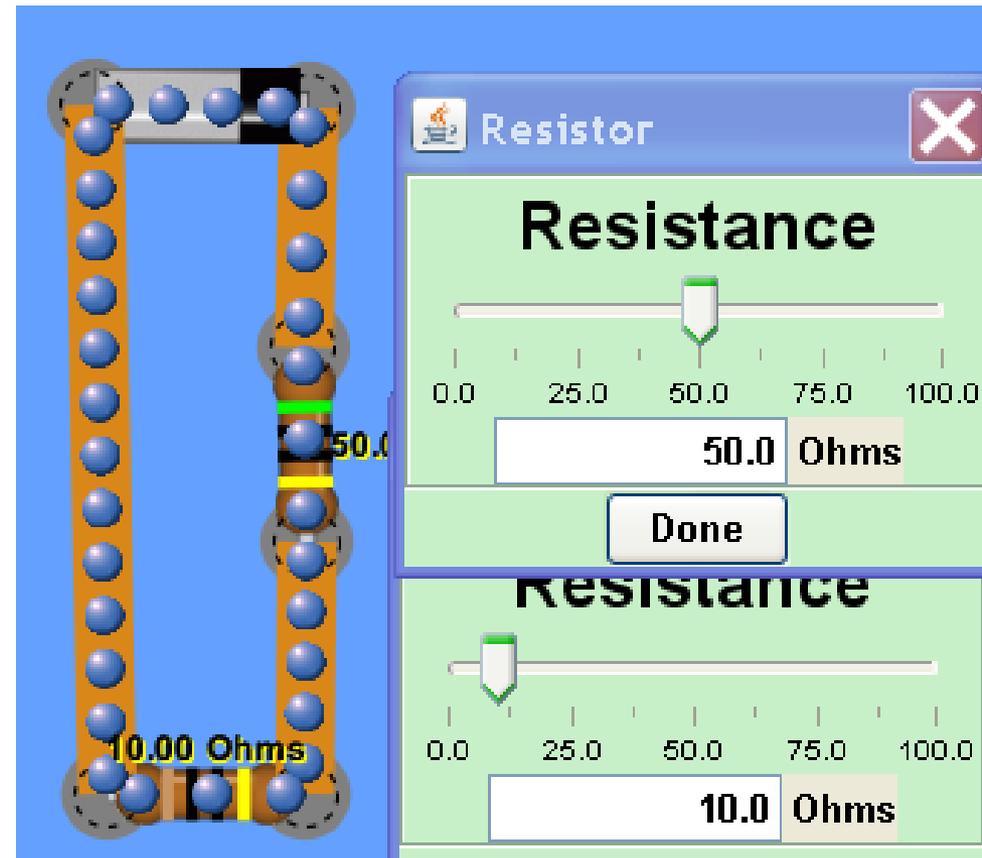


7. Which resistor will have the greatest current?

A. $50\ \Omega$

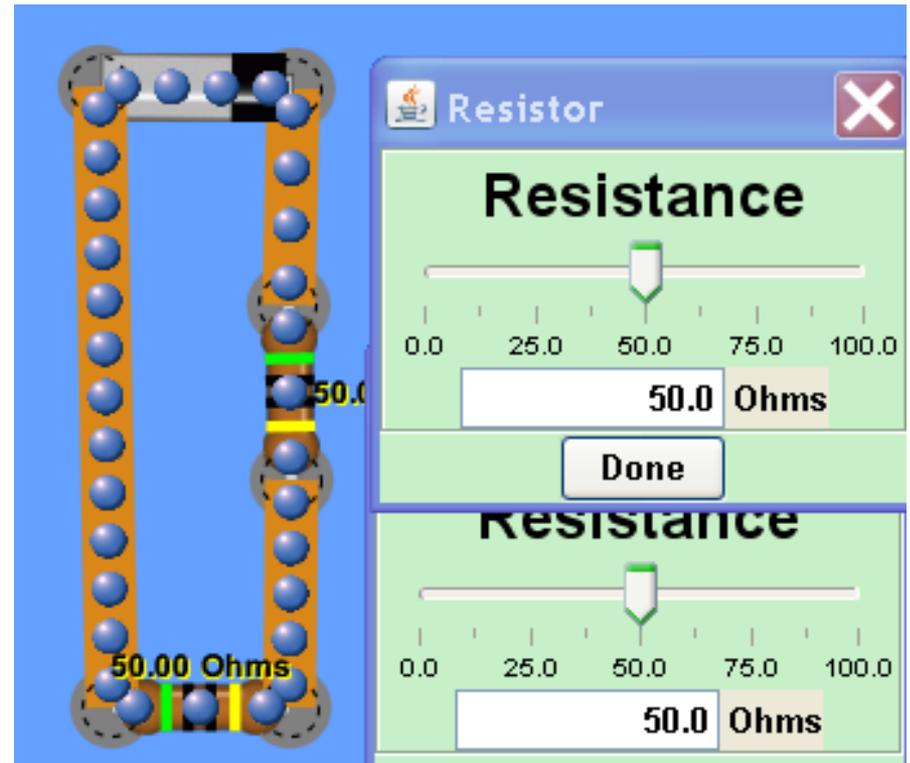
B. $10\ \Omega$

C. They have the same current



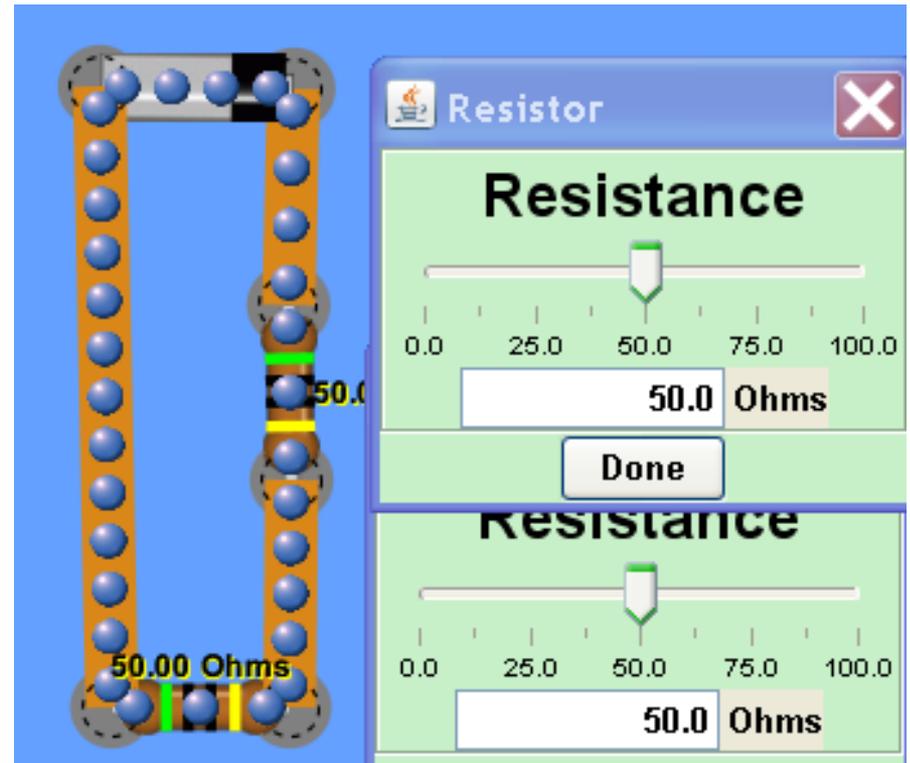
8. Which resistor will have the greatest voltage?

- A. The top resistor**
- B. The lower resistor**
- C. They have the same voltage**



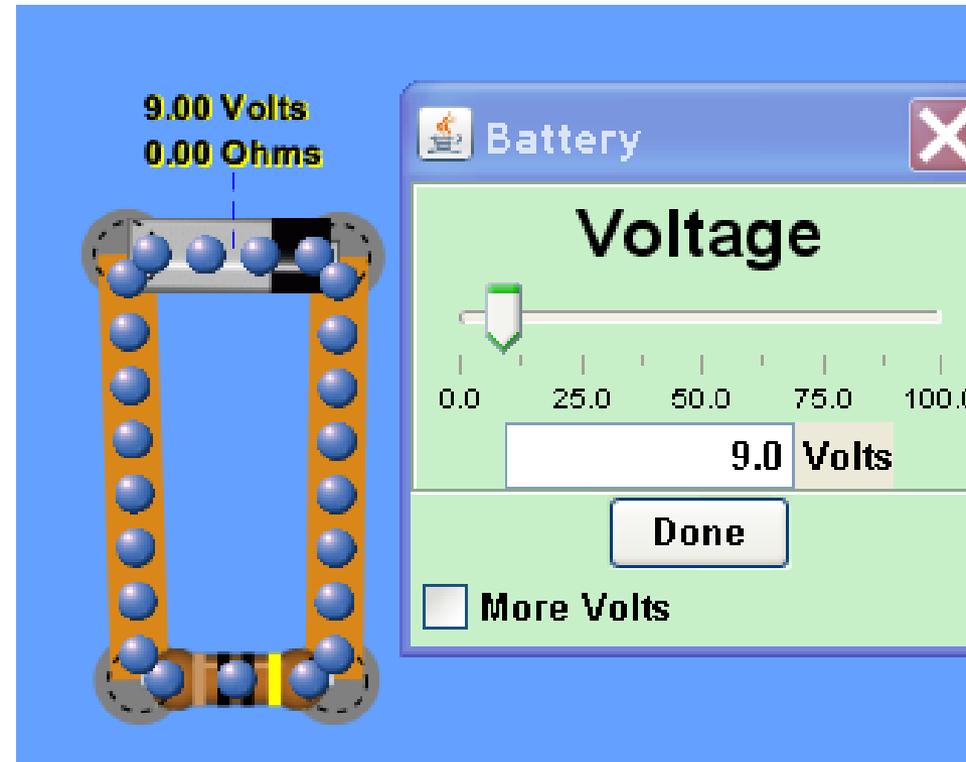
9. Which resistor will have the greatest current?

- A. The top resistor**
- B. The lower resistor**
- C. They have the same current**



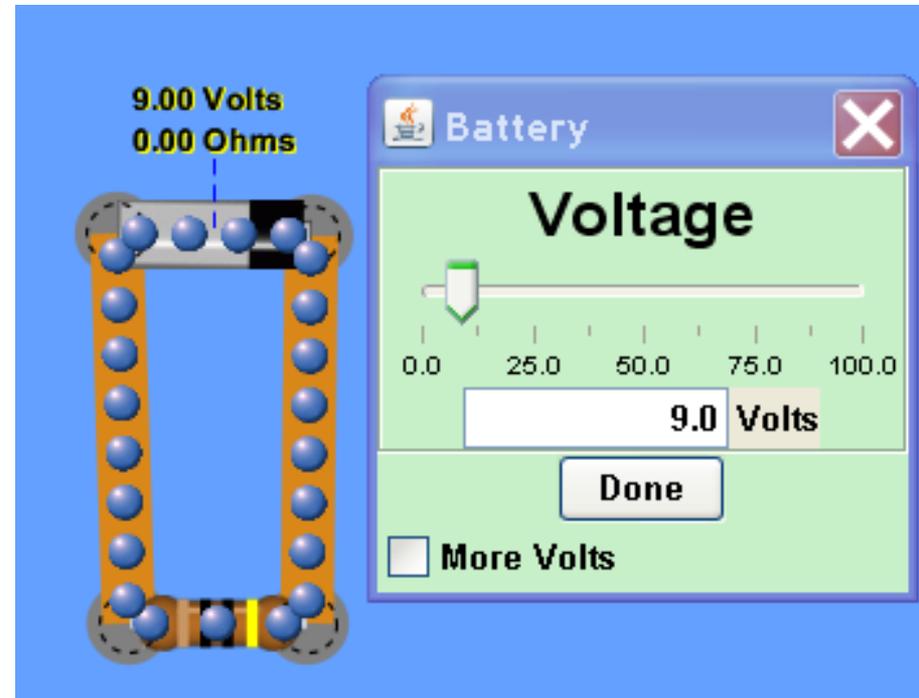
10. What will happen if the voltage of the battery is increased to 25 volts?

- A. The voltage across the resistor will increase**
- B. The voltage across the resistor will decrease**
- C. The voltage of the resistor does not change**



11. What will happen if the voltage of the battery is increased to 25 volts?

- A. The current through the resistor will increase
- B. The current through the resistor will decrease
- C. The current of the resistor does not change



Combo Circuit Lab

Learning Goals: Students will be able to:

- 1. Analyze the differences between real circuits and the ideal ones,**
- 2. Build circuits from schematic drawings,**
- 3. Use a multimeter to take readings in circuits.**
- 4. Provide reasoning to explain the measurements in circuits.**

12. What is the total resistance in this circuit?

- A. 6.4Ω
- B. 21Ω
- C. 38Ω
- D. 75Ω

10.0 Ohms 30.0 Ohms



13. What is the total resistance in this circuit?

- A. 6.4Ω
- B. 21Ω
- C. 38Ω
- D. 75Ω

