**Science 9**

**Unit D: Electrical Principles and Technologies**

**Lesson 8**

**Practice Worksheet 43: Ohm’s Law**

Complete the following questions as you use two online simulations. Open the simulations using the links in the online course.

*Leave your answers in blue; it will be easier for you and your teacher to see them later.*

**Question 1**

Refer to the Ohm’s Law simulation.

1. Identify what each variable represents. Identify the unit that each variable is measured with. Write your answers in the table below.

|  |  |  |
| --- | --- | --- |
| **Variable** | **Meaning** | **Unit of Measurement** |
| V | *Type your answer here.* | *Type your answer here.* |
| I | *Type your answer here.* | *Type your answer here.* |
| R | *Type your answer here.* | *Type your answer here.* |

1. Manipulate the buttons on the simulation. What conditions produce the greatest current?

*Type your answer here.*

1. Manipulate the buttons on the simulation. What conditions produce the least current?

*Type your answer here.*

**Question 2**

Refer to the Resistance in a Wire simulation.

Answer the questions below with the simulation and with your knowledge from earlier sections.

(Hint: How does the resistance change? How does the resistance affect Ohm’s Law?)

1. Predict what will happen to the current in a circuit if the voltage is kept constant but the wire diameter is increased.

*Type your answer here.*

1. Predict what will happen to the current in a circuit if the voltage is kept constant but the wire length is increased.

*Type your answer here.*

1. Predict what will happen to the current if the resistance is unchanged but
   1. the voltage is increased

*Type your answer here.*

* 1. the voltage is decreased

*Type your answer here.*

1. Predict what will happen to the resistance if you change from a copper wire, which is a good conductor, to an iron wire, which does not conduct as well.

*Type your answer here.*

**Congratulations! You have completed this practice worksheet.**

Now it's time to carefully compare your answers to the suggested answers in the online course. When comparing, you should feel free to make changes to your answers or make extra notes.

**Keep this practice worksheet for study purposes.** Using practice worksheets as a study tool to review for exams is a great idea.

**If you unsure about any of the questions or answers, or you just want more feedback, share this practice worksheet with your teacher and ask for assistance.** You can do that by emailing the teacher, or by submitting it in the Course Questions Forum in the online course. If you are using this practice worksheet in Google Drive, don’t forget to change the sharing settings so that anyone can view it before sending the link to your teacher.