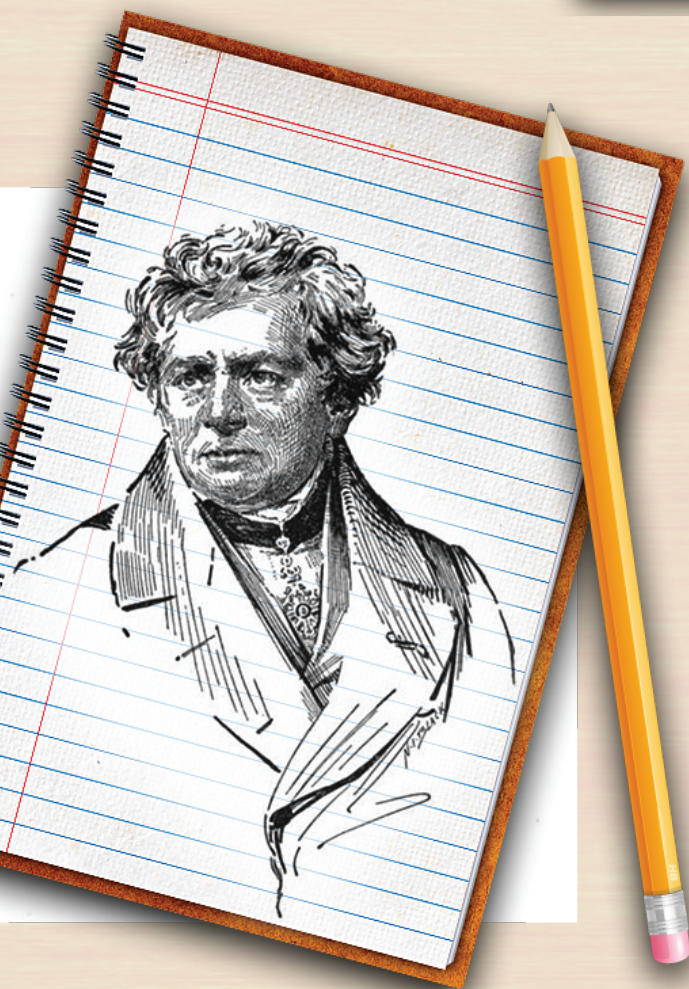


OHM'S LAW



You have learned that cells produce the potential difference or **voltage** between two points in a circuit. This electrical force drives an electric **current** between those points.

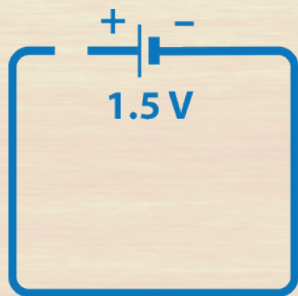
Ohm's Law, discovered by a German physicist named Georg Simon Ohm, expresses the important relationship between current, voltage and resistance in the form of a simple equation:

$$\text{voltage (V)} = \text{current (I)} \times \text{resistance (R)}$$

A 1.5 V cell may not create a high electrical level. However, the connecting wires have negligible resistance. Let's take the resistance of the wire to be $0.003 \, \Omega$. If we connect the wire directly to the cell, the current running through it would be:

$$\begin{aligned} \text{Current} &= \text{voltage} / \text{resistance} \\ &= 1.5 \, \text{V} / 0.003 \, \Omega \\ &= 500 \, \text{A} \end{aligned}$$

Such a high current will burn up the wires and even the cell itself!



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Type of Resource:

This reference may be printed and passed out to elementary and middle school students to educate them about the important link between current, voltage and resistance in electricity.

The actual courseware/source of this activity is Electricity 1, one among over 25 best-selling offline interactive educational science coursewares called Science Werkz which won the 2013 EDDIE Award for Science E-Learning Solutions in the Upper Elementary and Middle School Categories.

How to use this Resource:

We highly suggest that you use this resource if you are a teacher who wants your elementary or middle school students to learn more about Ohm's Law or how current, voltage and resistance work together to produce electricity.

Open the discussion by asking students if they should just plug their mobile phone device's charger in any electrical outlet they can find. You can then print this reference and ask the students to review it and use it as a guide for using and plugging in electrical devices without harming themselves or the devices.



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More Details about the Resource:

Science Werkz is a line of award-winning offline interactive educational science solutions that may be accessed on the phones, tablets, or computers of its users.

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Winner of the 2013 EDDIE Award for Science E-Learning Solutions in the Upper Elementary and Middle School categories, the subscription-based science e-learning courseware may be used by educators for classroom learning or by parents and students for self-paced learning at home.

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