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| **Subject Area** | Physics |
| **Age or Grade** | High School |
| **Estimated Length** | 45 minutes |
| **Prerequisite knowledge/skills** | The student should understand the basic properties of circuits including voltage, resistance, and current. They should also know how to construct simple, series, and parallel circuits. |
| **Description of New Content** | Students will use a computer simulation program to construct and explore various circuits that they have previously drawn. |
| **Goals** | * Students will be able to translate a circuit diagram into a circuit simulation in the program. * Students will be able to use the equation R=V/I to find the equivalent resistance of each type of circuit. |
| **Materials Needed** | * Computers with internet access * Worksheet (see below) |
| **Procedure** | **Opener –** Students should draw a circuit diagram of a simple, series, and parallel circuit to re-fresh this concept.  **Development -**. Students will use the phet simulator available at <http://phet.colorado.edu/simulations/> sims.php?sim=Circuit\_Construction\_Kit\_DC\_Only to complete the attached worksheet (PhET Circuits)  **Closure -**. Students will have attempted to light a battery on fire and the concept of a “short circuit” should be briefly introduced. |
| **Evaluation** | Students’ worksheets should be collected and used for evaluation. |
| **Extensions** |  |
| **References** | PhET Circuits |