# Lesson 3: Power Rubric

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| **Students will be able to….** | **Novice**  **1** | **Apprentice**  **2** | **Proficient**  **3** | **Distinguished**  **4** |
| **Understand the relationship between electrical energy and power.** | Student does not understand the relationship between electrical energy and power. | Student can describe the relationship between electrical energy and power with significant support. | Student can describe the relationship between electrical energy and power. | Student participates at proficient level and also demonstrates advanced understanding with further insight (e.g., plugging electrical appliance transfers electrical energy from the power company to power the device). |
| **Understand the mathematical relationship between power and circuits.** | Student does not understand how to calculate power given voltage and current in a circuit. | Student can calculate power given voltage and current in a circuit with significant support. | Student can calculate power given voltage and current in a circuit. | Student participates at proficient level and also demonstrates advanced understanding with further insight (e.g., using energy labels on devices not provided to calculate power). |
| **Understand conversions from one unit of power to another.** | Student does not understand how to convert power from watts to kilowatts. | Student can convert power from watts to kilowatts with significant support. | Student can convert power from watts to kilowatts. | Student participates at proficient level and also demonstrates advanced understanding with further insight (e.g., identify the power requirements of several other devices in kilowatts). |
| **Understand the monetary cost of using electrical devices.** | Student does not understand how to calculate the electrical load of a system and the cost to power it for one day. | Student can calculate the electrical load of a system and the cost to power it for one day with significant support. | Student can calculate the electrical load of a system and the cost to power it for one day. | Student participates at proficient level and also demonstrates advanced understanding with further insight (e.g., understand the cost of powering a system for one week, one month, etc.). |