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| **Students will be able to….** | **Novice**  **1** | **Apprentice**  **2** | **Proficient**  **3** | **Distinguished**  **4** |
| **Identify and distinguish between open and closed circuits.** | Student does not successfully distinguish between open and closed circuits. | Student can identify and distinguish between open and closed circuits with significant support. | Students readily identifies closed and open circuits and provide support. | Student participates at proficient level, and also demonstrates advanced understanding with further insight (e.g., that the light switches in a classroom control whether a circuit is open or closed) |
| **Discuss and explain why standard symbol systems, like schematic diagrams, are important.** | Students contributions do not show evidence of understanding what a standard symbol system is or why standard symbol systems are important. | Student contributions show that he/she understands what makes a symbol system “standard”, but not why they are important. | Student shows evidence of understanding the difference between drawings and symbols. Students can explain at least two different reasons that standard symbol systems are important. | Students participates at a proficient level, and also demonstrates advanced understanding with further insights (e.g., by comparing various standard symbol systems like the alphabet or musical notations) |
| **Create schematic diagrams of circuits that include batteries, bulbs, wires, open and closed switches.** | Student does not successfully create schematic diagrams using standard symbols and straight, perpendicular lines for wires. | Student is able to produce a schematic diagram with standard symbols, but the diagram also have significant problems such as breaks in a system or irregular wires. | Student successfully produces at least two different schematic diagrams with no significant errors. | Student participates at a proficient level, and also demonstrates advanced understanding (e.g., by comparing different but equivalent diagrams). |
| **Build a working simple circuit and explain how it works.** | Student is not able to correctly build a circuit. | Student, with significant support, can build a working circuit. | Student successfully constructs a circuit. | Student participates at a proficient level, and also demonstrates advanced understanding with further insight (e.g., by creating a more complex/series circuit). |