Task: Students work as individuals to apply their knowledge about energy transfer by creating a wired item for the story, *Buddy’s Bedtime Battery*. The resulting item(s) should include (a) a complete and operable circuit, (b) a labeled drawing that illustrates energy transfer from one type to another and parts of a circuit (conductors, insulators, pathways, switch, etc.) (c) evidence of student research. Students can use varied materials (wires, light bulbs, buzzers, pom poms, chenille sticks, cups, etc.) and technology (e.g., available software, tablet, online applications, posters, paint, markers) to create their plans and models. Because some technology resources and building materials will be shared, students will also be assessed for their ability to collaboratively communicate with their classmates.

NGSS.4-PS3-4 Energy: Apply scientific ideas to design test, and refine a device that converts energy from one form to another. <https://www.nextgenscience.org/pe/4-ps3-4-energy>

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| **Criterion** | **Exemplary (3)** | **Competent (2)** | **Developing (1)** |
| **Technology Integration** | The student uses *several* technology resources to research, illustrate, and provide a plan for their model. | The student uses *some* technology resources to research, illustrate, and provide a plan for their model. | The student uses a *few* technology resources to research, illustrate, and provide a plan for their model. |
| **Application of**  **Academic Vocabulary** | There are no errors – the student associates the academic vocabulary with all correct components of their model. | There are 1-3 errors – the student incorrectly associates the academic vocabulary with a *few* components of their model. | There are 4 or more errors – the student incorrectly associates the academic vocabulary with *many* components of their model. |
| **Depth of Model and Illustrated Plan** | The model and illustrated plan provides *substantial application* of (a) how energy is transferred in complete and incomplete circuits, (b) components of circuits, and (c) indicators of complete and incomplete circuits. | The model and illustrated plan provides *some application* of (a) how energy is transferred in complete and incomplete circuits, (b) components of circuits, and (c) indicators of complete and incomplete circuits. | The model and illustrated plan *lacks detail* - there is inadequate application of (a) how energy is transferred in complete and incomplete circuits, (b) components of circuits, and (c) indicators of complete and incomplete circuits. |
| **Collaborative Communication** | The student collaboratively communicates with their peers, interacting in a positive and constructive manner with their peers. | The student attempts to collaboratively communicate with their peers, interacting in a *somewhat* positive and constructive manner with their peers. | The student does not collaboratively communicate with their peers, interacting only with negativity. They fail to constructively help their peers. |

Total Points Earned: \_\_\_\_\_\_\_\_\_\_\_