Task #6 – Pulley
Summative

Standards:
Use observed evidence to construct or support a scientific explanation.
Explain why simple machines make work easier.
Identify and model simple machines in students’ current context.
Explain how the six simple machines function.

Task:
Part 1: Construct a single fixed pulley. Use it to lift a load.

Guiding Questions
1. Identify the load and the effort.
2. Compare the effort with and without the pulley.
3. What makes a single fixed pulley different from other simple machines?

Part 2: Construct a single movable pulley. Use it to lift a load.

Guiding Questions
1. Identify the load and the effort.
2. Compare the effort with and without the pulley.
3. What makes a single movable pulley different than a single fixed pulley?

Writing/Verbal Prompt
Which kind of pulley should I use to lift a box of pizza to the top of a building for a construction crew? Why? Which kind of pulley should I use to lift a heavy safe to the top of a building? Why?
Task #6 – Pulley
Summative

Rubric:

<table>
<thead>
<tr>
<th></th>
<th>Machinist 5 points</th>
<th>Apprentice 3 points</th>
<th>Tinkerer 0 points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basic Understanding</strong></td>
<td>Student uses vocabulary words to make connections between how the simple machine works and how it affects the effort.</td>
<td>Student makes connections between how the simple machine works and how it affects the effort.</td>
<td>Student does not connect how a simple machine works to how it affects the effort.</td>
</tr>
<tr>
<td><strong>Model</strong></td>
<td>Student creates functioning inclined plane</td>
<td>x</td>
<td>Student does not create inclined plane</td>
</tr>
<tr>
<td><strong>Evidence to support scientific claim in explanation</strong></td>
<td>Student refers to several observations from experiment to support claims</td>
<td>Student refers to one observation from experiment to support claims</td>
<td>Student does not refer to experiment to support claims</td>
</tr>
</tbody>
</table>