Task #2 – Inclined Plane
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:

Construct two inclined planes of different lengths and angles. Measure the force needed to move the load on each.

Guiding Questions

1. Identify the load and the effort.
2. What was easier to move – the load by itself, on the long inclined plane, or on the short inclined plane?
3. How far did the load move on the long inclined plane? On the short inclined plane?
4. How does an inclined plane make work easier?

Writing/Verbal Prompt

If I need to move a refrigerator off a truck, what can I do to make my job easier?
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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>