Task #5 – Screw
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:

Take two screws of the same length, but with different threads. Find a nut to match each screw and put a spot of paint on both nuts. Count how many times the nut has to turn to reach the top of the screw.

Guiding Questions

1. Identify the load and the effort.
2. How many threads did the first screw have? How many did the second one have?
3. Which screw took longer to put the nut on? Why do you think?
4. How is a screw like an inclined plane?
5. How does a screw make work easier?

Writing/Verbal Prompt

Which screw would be more difficult to put into a piece of wood? Why?
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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>Basic Understanding</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>Model</td>
<td>Student creates functioning inclined plane</td>
<td>x</td>
<td>Student does not create inclined plane</td>
</tr>
<tr>
<td>Evidence to support scientific claim in explanation</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>