





Trundle Wheel

Name(s): _____

Date: _____

NGSS GOALS	 BRONZE	 SILVER	 GOLD	 PLATINUM
1. Student work related to this Crosscutting Concept: In this project, we built a trundle wheel and explained how it worked.				
Scale, Proportion, and Quantity: Use proportional relationships to gather information about the magnitude of properties.	<ul style="list-style-type: none"> We explained how the wheel turning causes the disk to turn. We explained how the markings on the disk tell us the measurement in 'cm'. <input type="checkbox"/>	<ul style="list-style-type: none"> We met Bronze. We related the number of markings on our disk to the number of centimeters we measured. We described how one trundle wheel can be used to measure > 1m. <input type="checkbox"/>	<ul style="list-style-type: none"> We met Silver. We explained when we needed to add a second disk to the trundle wheel design. We described the ratio of complete turns the first disk made to the turns of the second disk. <input type="checkbox"/>	<ul style="list-style-type: none"> We met Gold. We explained why the ratio of the gears in our trundle wheel is important to making it work. <input type="checkbox"/>
2. Student work related to this Practice: In this project, we built a trundle wheel measurement machine and used it to collect data for small and large measurements.				
Analyzing and Interpreting Data: Consider measurement error and seek to improve precision and accuracy of data with better tools.	<ul style="list-style-type: none"> We built a working trundle wheel measurement machine. We completed measuring different objects. We made a measurement disk to record lengths in 'cm' for the first disk. <input type="checkbox"/>	<ul style="list-style-type: none"> We met Bronze. We completed the long jump measurements. We compared our trundle wheel measurements with the ones made by a ruler. We made measurement disks to record lengths in 'cm' and 'm'. <input type="checkbox"/>	<ul style="list-style-type: none"> We met Silver. We repeated measurements to improve our results if the ruler and trundle wheel measurements were very different. <input type="checkbox"/>	<ul style="list-style-type: none"> We met Gold. We completed more measurements than we were asked to do on our Student Worksheet. We compared our measurements with our classmates. We worked together with classmates to improve our measurements. <input type="checkbox"/>
3. Student work related to this Practice: In this project, we explained why our trundle wheel measurement machine is, in some ways, better than a ruler.				
Constructing Explanations: Construct a scientific explanation based on valid and reliable evidence from student's own experiments.	<ul style="list-style-type: none"> We explained one way that our trundle wheel was better than a ruler. <input type="checkbox"/>	<ul style="list-style-type: none"> We met Bronze. We used an example from our own experiment to support our explanation. <input type="checkbox"/>	<ul style="list-style-type: none"> We met Silver. We explained more than one way that our trundle wheel was better than a ruler. We used multiple examples from our own experiments to support our explanations. <input type="checkbox"/>	<ul style="list-style-type: none"> We met Gold. We added at least one way in which the ruler is better than our trundle wheel. <input type="checkbox"/>
Notes: <div style="border: 1px solid black; height: 50px; width: 100%;"></div>				