





# Flywheeler

Name(s): \_\_\_\_\_

Date: \_\_\_\_\_

NGSS GOALS	 <b>BRONZE</b>	 <b>SILVER</b>	 <b>GOLD</b>	 <b>PLATINUM</b>
<b>1. Student work related to this Crosscutting Concept:</b> In this project, we built the Shakey Brakey model to test what happens when a flywheel is mounted off-center.				
<b>Cause and Effect: Mechanism and Explanation:</b>  Use cause and effect relationships to explain observations in designed systems.	<ul style="list-style-type: none"> <li>We built the Shakey Brakey model.</li> <li>We predicted what would happen.</li> </ul> <input type="checkbox"/>	<ul style="list-style-type: none"> <li>We met Bronze.</li> <li>We explained what we saw and explained what caused it.</li> </ul> <input type="checkbox"/>	<ul style="list-style-type: none"> <li>We met Silver.</li> <li>We tested our Shakey Brakey at both slow speeds and fast speeds.</li> <li>We described causes and effects related to our observations.</li> </ul> <input type="checkbox"/>	<ul style="list-style-type: none"> <li>We met Gold.</li> <li>We explored real-life machines that behave similar to our Shakey Brakey.</li> <li>We reported our findings to our classmates or our teacher.</li> </ul> <input type="checkbox"/>
<b>2. Student work related to this Practice:</b> In this project, we built a flywheeler with different flywheel combinations.				
<b>Developing and Using Models:</b>  Use a model to generate data to test ideas about designed systems.	<ul style="list-style-type: none"> <li>We built a flywheeler that moves slowly.</li> <li>We created a space to test our flywheeler with the same "run-up".</li> </ul> <input type="checkbox"/>	<ul style="list-style-type: none"> <li>We met Bronze.</li> <li>We practiced to make sure our flywheeler is launched with the same speed for each experiment.</li> </ul> <input type="checkbox"/>	<ul style="list-style-type: none"> <li>We met Silver.</li> <li>We completed an experiment with all twelve different flywheel combinations.</li> <li>We explained the advantages and disadvantages of these three models, when asked.</li> </ul> <input type="checkbox"/>	<ul style="list-style-type: none"> <li>We met Gold.</li> <li>We completed an experiment with all six different flywheel combinations.</li> <li>We explained which combination traveled the longest, when asked.</li> </ul> <input type="checkbox"/>
<b>3. Student work related to this Practice:</b> In this project, we experimented on our flywheeler with different flywheel combinations. We used our observations help us explain how the three best parts of our flywheeler work.				
<b>Analyzing and Interpreting Data:</b>  Analyze data to define an optimal operational range for a system that best meets criteria for success.	<ul style="list-style-type: none"> <li>We wrote down our observations (distance or time) for at least three different flywheel combinations.</li> </ul> <input type="checkbox"/>	<ul style="list-style-type: none"> <li>We met Bronze.</li> <li>We analyzed the data we collected and determined which flywheel combination was the best (traveled the furthest)</li> </ul> <input type="checkbox"/>	<ul style="list-style-type: none"> <li>We met Silver.</li> <li>We explained how three parts of our flywheeler work.</li> <li>We explained why the flywheel combination we picked was the best.</li> </ul> <input type="checkbox"/>	<ul style="list-style-type: none"> <li>We met Gold.</li> <li>We completed an experiment with all six flywheel combinations.</li> <li>We analyzed all of our data to determine which flywheel was the best.</li> </ul> <input type="checkbox"/>
Notes:				