Sweeper

Name(s): _____ **Date:** _____

NGSS GOALS	 BRONZE	 SILVER	 GOLD	 PLATINUM
1. Student work related to this Crosscutting Concept: In this project, we drew, labeled, and explained how our sweeper works.				
Structure and function: The way in which an object or living thing is shaped and its substructure determine many of its properties and functions.	• We drew and labeled the parts of the sweeper. ☐	• We met Bronze. • We labeled three important parts of our sweeper. • We explained how one of these parts works to help our sweeper clean the path. ☐	• We met Silver. • We explained how all three of the parts we identified work to help our sweeper clean the path. ☐	• We met Gold. • We suggested at least one improvement to our design to help Jack and Jill clean their path more effectively. ☐
2. Student work related to this Practice: In this project, we explained what we discovered after we built a 'safe sweeper'.				
Constructing Explanations: Optimize performance of a design by prioritizing criteria, making tradeoffs, testing, revising, and re-testing.	• We changed our model to include two pulleys to make our sweeper blade turn. • We explained what we observed when we held the sweeper blade. ☐	• We met Bronze. • We used our observations to help us explain why a sweeper blade that uses pulleys is safer than one that uses gears. ☐	• We met Silver. • We tried our sweeper on a different surface such as a carpet with crumbs. • We explained at least one advantage and one disadvantage of the pulley design. ☐	• We met Gold. • We shared at least one new discovery from our observation that would help Jack and Jill clean their path more effectively. ☐
3. Student work related to this Practice: In this project, we made a model to test how different sweeper blades could help Jack and Jill clear their path.				
Developing and Using Models: Use a model to generate data to test ideas about designed systems.	• We built a model with wheels that could be pushed by hand to clear the path. • The wheels on our sweeper turned the gears. ☐	• We met Bronze. • Our wheels and gears caused the sweeper blades to turn. ☐	• We met Silver. • We tested all three of the sweeper blades shown on our worksheet. ☐	• We met Gold. • We invented at least one new sweeper blade to test. ☐
Notes:				