

Hot Wheels Lab: Part 2 Rubric

LT: Collect and analyze data to find out how speed and mass affect momentum.

Name _____
Date _____ Period _____ Score ____/24 ÷ 6 = ____ / 4

Category	4	3	2	1
Heading / Title Purpose / Hypothesis ____ / 4	Hypothesis provides a research-based rationale for the prediction. The research source is cited.	Heading Title Purpose Hypothesis clearly predicts how acceleration will be identified.	One of the required elements is missing	Two or more of the required elements are missing.
Materials/ Procedure ____ / 4	Exceptional detail – includes a colored, , accurate drawing of set up which includes dimensions, proper angles, etc.	<u>All materials are listed and adequately identified.</u> (drawing/description) so another person could find all of the supplies <u>All steps are detailed so another person could repeat your technique exactly. A drawing of the set-up is required.</u>	Material are <u>partially</u> listed and/or described. Steps are <u>partially</u> described so a reader would be able to repeat most steps accurately	Materials and/or steps are missing and a reader would be misled by reading your lab.
Results ____ / 4	A total of at least 5 additional observations included are which add to the understanding of the lab. Detailed, neat drawings of the collision sequence are required.	The data table that was provided is completed and neatly attached to the lab. <u>At least three additional drawings of the collision sequence are included.</u>	Table is incomplete or additional observations were not included.	Data table is missing.
Note New Value	8	6	4	2
Analysis Paragraph ____ / 8	Level 4: in addition to thoroughly completing levels 1-3, the discussion continues to include detailed additional insight on factors which influence results and why there may not be a direct match between the hypothetical and actual momentum values	Level 1: Topic sentence which states momentum is the product of velocity (speed) X mass. Level 2: Sentence(s) explain how we conducted time trials and weighed each car, then multiplied the speed X mass to get a hypothetical momentum. Cars were crashed into a block to determine actual momentum. Level 3: The following sentences <u>clearly interpret the data from the graph and additional observations to determine how mass and speed influence momentum.</u>	One element of 1-3 is missing	Two elements of 1-3 are missing.
Note Value	4	3	2	1
Conclusion ____ / 4	In addition to the proficient requirements, paragraph includes insightful additions to the discussion of the hypothesis, what you learned, and the “I wonder”. Clear reference to scientific principles and data should be included.	<u>Topic sentence restates the purpose</u> DOES NOT START WITH “To” Acceptance/rejection of the hypothesis is clearly identified. An explanation of <u>why</u> the hypothesis was accepted/rejected. A logical “what you learned” statement related to the data/purpose. I wonder comment is a logical next step to further research that is related to the original purpose.	One element of a proficient response is missing.	Two or more elements of a proficient response are missing.