Name _____ Date _____

Newton's Hot Wheel Lab

Observation

Describe the Hot Wheel you are using for the lab.

Qua*L*itative (descriptive words)	**Qua*N*titative (numbers)**
	Length (inches and centimeters): **Height (inches and centimeters):** **Weight:**

Lab #1 - Inertia

Question: How far will the washer fly after the hot wheel hits the wall (ruler)?

Hypothesis: I think the washer will fly _____ cm.

Experiment:

1. Use rubber band to propel car with washer sitting on the hood.
2. Measure from the wall to where the washer landed in centimeters.
3. Record data in observation chart.
4. Repeat 3 more times.

Observations:

Test #1	Test #2	Test #3	Test #4

Conclusions:

On AVERAGE, how far did the washer fly? (Add up the addends and divide by 4!)

My hypothesis was ACCEPTED REJECTED INCONCLUSIVE.

Lab #2- Friction

Question: Which surface slows down the Hot Wheel most? The No Slip Outdoor Tape or the No Slip Rug Tape?

Hypothesis:

Experiment:

1. Using a stopwatch, time how long it takes for your Hot Wheel to roll across the finish line on each surface 3 times.
2. Record data on the chart below.

Observations:

	Test #1	Test #2	Test #3
No Slip Outdoor Tape			
No Slip Rug Tape			

Conclusions:

What was the average time for No Slip Outdoor Tape? _____

What was the average time for No Slip Rug Tape? _____

Which surface made the Hot Wheel slow down the most? _____

My hypothesis was ACCEPTED REJECTED INCONCLUSIVE.

Think and Write: Where is friction in the world? When do we need it? When do we not want it? What do we use to slow cars down in the real world?

_____

_____

_____

_____

_____

_____

Lab #3-Newton's Second Law (A.K.A. Play Around with Mass!)

Question: Will a heavier Hot Wheel go farther than a light Hot Wheel?

Hypothesis: I think that a _____ Hot Wheel will go farther.
heavier or lighter

Experiment:

1. Test your car and measure distance in centimeters. (Measure from the end of the rain gutter to where the car stopped.)
2. Test the weighted car and measure distance in centimeters. (Measure from the end of the rain gutter to where the car stopped.)
3. Repeat 2 more times for both cars.

Observations:

Test #1		Test #2		Test #3	
Weighted Car	Your Car	Weighted Car	Your Car	Weighted Car	Your Car

Conclusions:

What was the average distance traveled for your car?

What was the average distance traveled of the weighted car?

Did the heavier car go farther? YES NO

My hypothesis was ACCEPTED REJECTED INCONCLUSIVE.

Think About It: So in the real world, if you drive out of town a lot what kind of car would you want?

Lab #4: Does Steeper Mean Farther?

Question: Does height of a ramp affect the distance a hot wheels car will travel?

Hypothesis:

Experiment:

1. Build the ramp three math books high.
2. Place the hot wheels car at the starting point and release.
3. Measure the distance the car travels down the ramp and onto the floor.
4. Record the distance in centimeters in your data table.
5. Raise the ramp to the seat of a chair and release car.
6. Record the distance in centimeters in your data table.
7. Raise the ramp to the desk and release car.
8. Record the distance in centimeters in your data table.

Observations:

Data Table	
Ramp	**Distance (cm)**
3 Books	
Chair Seat	
Desk	

Conclusion:

My Hypothesis was ACCEPTED REJECTED INCONCLUSIVE

Did the height of the ramp increase the distance the car rolled? Why?

_____

_____

_____

_____

Finished?

In the space below….

Choose one of the experiments and make a graph. Use a graphtastic sheet to help you out!

Design your own Hot Wheel experiment!

Design and label your own Hot Wheel!

Lab #4:

Does Steeper Mean Farther?

Lab #4:

Does Steeper Mean Farther?

Lab #3

Newton's Second Law

Lab #3

Newton's Second Law

Lab #2

Friction

Lab #2

Friction

Lab #1

Inertia

Lab #1

Inertia