Name _____ **Period:** _____

Chapter 2 Lab: Momentum (Bennett Science)

Objective: Relate the momentum of an object to its mass and velocity.

Pre-Lab

Define the below terms.

	Define
Mass	
Speed	
Velocity	

Task

Using a marble, a ruler, index cards, and books, find the momentum for different sized marbles and relate it to the velocity it has when it hits the index card.

Procedure (short and sweet, please)

Data

Experiment 1

Variable	**Trial**	**Distance (cm)**	**Time (s)**	**Speed (cm/s)**	**Card dist (cm)**
	1				
	2				
	3				

Variable	**Trial**	**Distance (cm)**	**Time (s)**	**Speed (cm/s)**	**Card dist (cm)**
	1				
	2				
	3				

Experiment 2

Variable	Trial	Distance (cm)	Time (s)	Speed (cm/s)	Card dist (cm)
	1				
	2				
	3				

Variable	Trial	Distance (cm)	Time (s)	Speed (cm/s)	Card dist (cm)
	1				
	2				
	3				

Results

There are two sections of graph paper on the back of this page. Complete the graphs using your experimental data.

Conclusions

1. Which marble(s) moved the card the farthest?

2. How are momentum and mass related?

3. How are momentum and velocity related?

4. Based on your results, which variable - mass or height - had a greater effect on momentum?

ABSENT DATA

Data

Experiment 1 : SHALLOW SLOPE

Variable	Trial	Distance (cm)	Time (s)	Speed (cm/s)	Card dist (cm)
SMALL MARBLE	1			**53.6**	**3.8**
	2			**56.3**	**4.0**
	3			**52.5**	**3.9**

Variable	Trial	Distance (cm)	Time (s)	Speed (cm/s)	Card dist (cm)
LARGE MARBLE	1			**45.5**	**6.5**
	2			**46.7**	**6.7**
	3			**45.9**	**6.2**

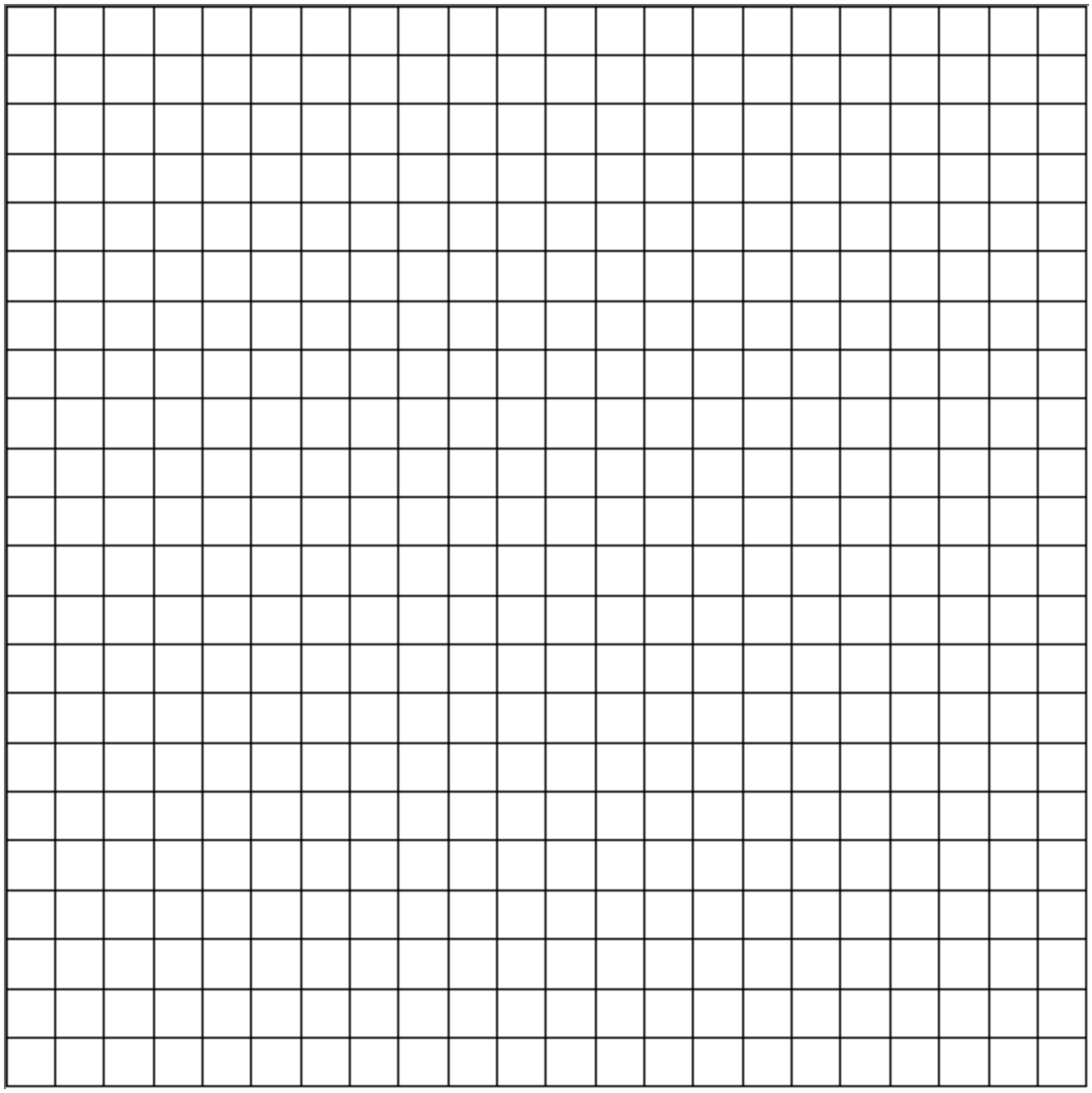
Experiment 2: STEEP SLOPE

Variable	Trial	Distance (cm)	Time (s)	Speed (cm/s)	Card dist (cm)
SMALL MARBLE	1			**74.6**	**4.7**
	2			**75.2**	**4.5**
	3			**70.5**	**4.0**

Variable	Trial	Distance (cm)	Time (s)	Speed (cm/s)	Card dist (cm)
BIG MARBLE	1			**62.1**	**8.6**
	2			**52.7**	**8.3**
	3			**54.1**	**8.7**

Results

Experiment 1



Experiment 2