

Marble Momentum



Momentum is the amount of motion of a moving object. Momentum can be calculated by multiplying the velocity of the object times its mass. An object that is not moving has no velocity and therefore no momentum. Additionally, the more mass or greater velocity an object has, the more momentum it has. The law of conservation of momentum states: in the absence of outside forces (friction for example), the total momentum of objects does not change.

Results and Analysis:

1. Fill in the following data tables as you complete your experiment:

ONE BLOCK				
	One Marble	Two Marbles	Three Marbles	Four Marbles
Trial 1	1 cm	2 cm	3.75 cm	6 cm
Trial 2	1 cm	2.5 cm	3.75 cm	6.75 cm
Trial 3	1.5 cm	3 cm	6 cm	7.25 cm
Average	1.2 cm	2.5 cm	4.5 cm	6.7 cm

TWO BLOCKS				
	One Marble	Two Marbles	Three Marbles	Four Marbles
Trial 1	2 cm	5.25 cm	11 cm	12 cm
Trial 2	1.5 cm	6 cm	12.5 cm	13.5 cm
Trial 3	2 cm	6 cm	10.75 cm	14 cm
Average	1.8 cm	5.8 cm	11.4 cm	13.4 cm

2. How are you affecting momentum by using more marbles?

3. How are you affecting momentum by using more blocks?

4. What conclusion can you draw based on your results?

Extension:

Hypothesize: What do you think would happen if you used a bigger (or smaller) marble?
