

Name: _____

Date: _____

The Domino Effect

Purpose: To investigate the ways in which distance, time, and average speed are interrelated by maximizing the speed of falling dominoes. To become familiar with elementary graphing techniques.

Hypothesis:

I predict that dominoes spaced close together will have a **faster or slower** toppling speed.
I predict that dominoes spaced farther apart will have a **faster or slower** toppling speed.

Equipment:

Fifty dominoes

stopwatch

meterstick

Procedure:

1. Setup fifty dominoes in a straight row, with equal spacing between them. The dominoes must be spaced at least the thickness of one domino apart. Your goal is to maximize the speed at which a row of dominoes falls down. Set the dominoes in a way that you think will give the greatest speed.
2. Measure the total length of your row of dominoes and record.
3. Determine the average spacing distance between dominoes by measuring the length from the middle of the first domino to the middle of the last. Divide by the number of domino spacings and record.
4. Measure the length of a domino and record.
5. Record the time it takes for the row of dominoes to fall over.
6. Repeat for enough trials to complete the chart. Include one that has spacing as small as you can make it and one that is large as you can make it and still produce toppling.

Data: Length of domino: _____ cm

Trial	Length of row (cm)	# of domino spacings	Average spacing (lengths)	Time (s)	Speed (cm/s)
1					
2					
3					
4					
5					
6					

Analysis/Calculations:

1. Construct a graph of speed vs. domino spacing. Sketch the best-fit **line or curve**.
2. Show how the average speed was calculated for each trial.

Conclusion:

1. From the graph, determine the maximum and minimum toppling speeds.
2. Compare your predicted toppling speeds to the actual speeds.
 - a. Did the dominoes spaced close together fall fast or slow as you predicted?
 - b. Did the dominoes spaced farther apart fall fast or slow as you predicted?
3. What factors seem to be important in determining the speed of the falling dominoes?