DOMINO DASH LAB

Calculating Average & Constant Speed

PROBLEM

What is the relationship between speed, time and distance?

DATA TABLE

Speed of Falling Dominoes

Length of domino row (cm)	Time to fall (sec)	Average speed of falling dominoes (cm/sec)

MATERIALS

- Dominoes (28)
- Stopwatch (Phone Timer)
- Metric ruler

PROCEDURE

1. Set up all 28 dominoes with equal spacing between them. Set the dominoes in a straight line to cause a chain reaction when the first domino is pushed.
2. Measure the length of the domino row.
3. Record this data in the table.
4. Use the stopwatch to measure the time it takes for the entire row of dominoes to fall after the first domino is pushed. Record the data.
5. Calculate the speed at which the dominoes fell. Record.
6. Set up another row of a different length. Repeat steps 3 – 4.
7. Repeat for a total of 7 different trials

DATA ANALYSIS

1

Make a graph to show the relationship between the length of the domino row and the time it takes to fall.

2

Write a data analysis for your graph.

- Identify trends and relationships.

CONCLUSION QUESTIONS

1. What effect does distance have on the speed of a moving object?
2. What effect does time have on the speed of a moving object?
3. Use your textbook to fill in the graphic organizer:
4. Which definition of speed (average speed, constant speed, instantaneous speed) did we use in this investigation? Why?
5. How long (distance) would a row of dominoes have to be in order to take **30** seconds to topple using your fastest speed. Hint: Distance = speed x time.
6. Using your slowest speed, determine how long it would take a row of dominoes **200** cm long to topple. Hint: Time = Distance ÷ Speed
7. Which variable is the dependent variable and which is the independent variable?
8. By looking at your graph, what would be the toppling velocity is the dominoes were spaced 1.5 dominoes between each domino? What about 2.5 dominoes? (show your work)
9. How did you determine the speeds in question number 5?
10. Why are line graphs used for data like this?
11. What is the difference between speed and velocity?
12. Do you think lighter, or heavier dominoes would change your results? Explain.

	Average Speed	*Constant Speed*	*Instantaneous Speed*
Description			
When used			
How alike			
How different