Name: _____
Period: 1 2 3 4 5 6 7

Domino Dash

Question: How does the length of a domino row affect the speed of the falling dominoes?

Hypothesis: _____
_____

Background Information:
Average speed is the rate of motion calculated by dividing the distance traveled by the amount of time it takes to travel that distance.

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

Materials:
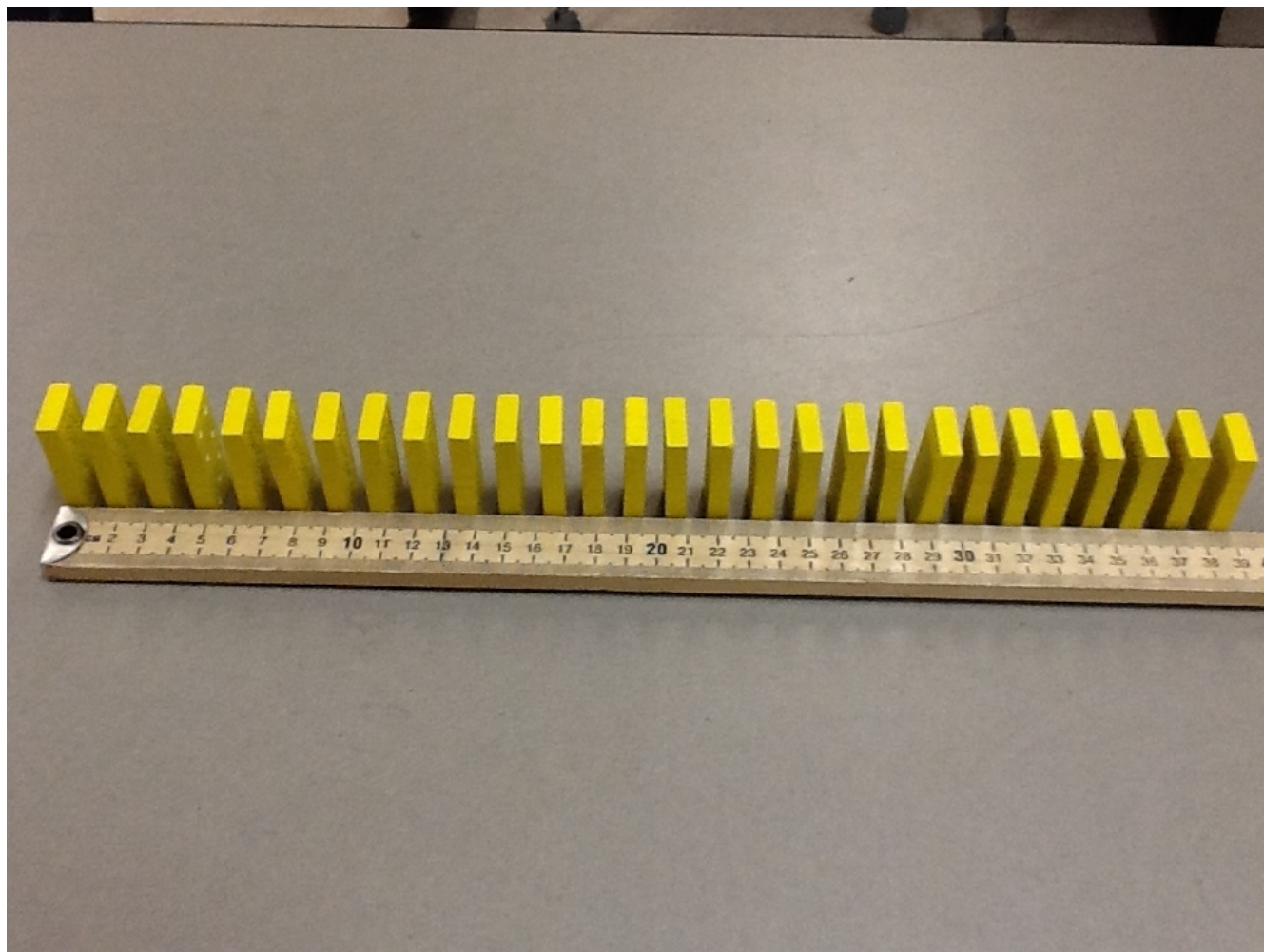1 box of 28 dominoes, stopwatch, meter stick, calculator

Procedure:
1. Set up all 28 dominoes in a row. Use the meter stick to space the dominoes apart by 1 cm. 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. Record this data in the table.
3. 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.
4. Calculate the speed at which the dominoes fell. Record in the table.
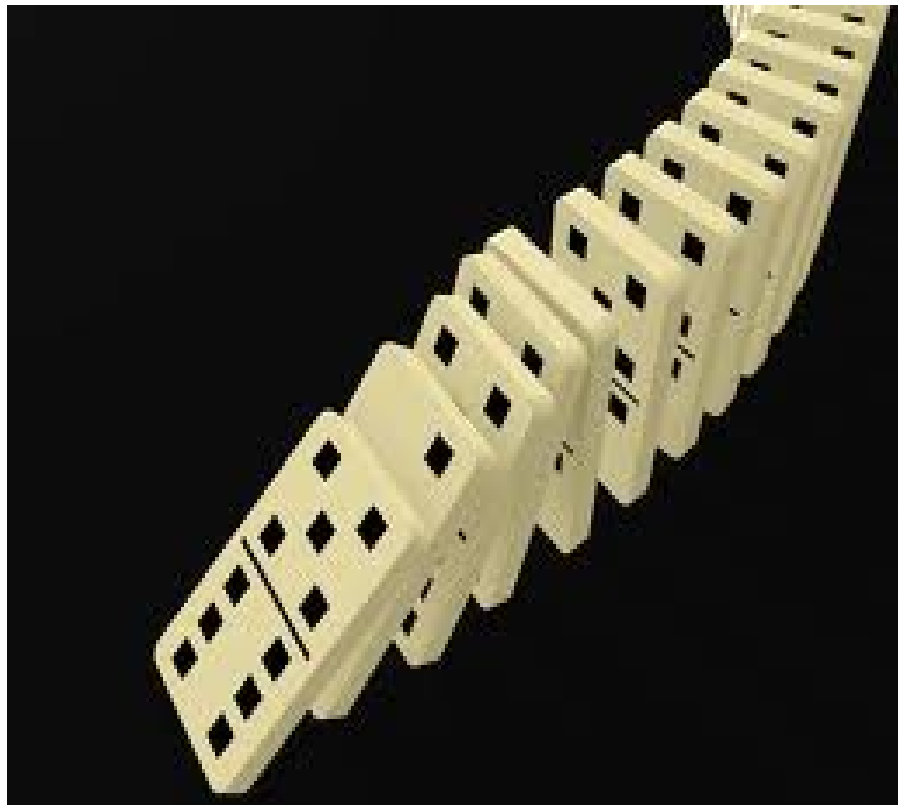5. Set up a domino row for each "space between dominoes" measurement given in the table below. Repeat steps 3 and 4.

Data:

✶ D ÷ t = ✶

Space between dominoes (cm)	Length of domino row (cm)	Time to fall (sec)	Speed of falling dominoes (cm/sec)
1			
1.5			
2			
2.5			
3			
3.5			
4			

https://www.youtube.com/watch?v=1WSFvWQ_lYw

Length of Domino Row (cm)	Speed of Falling Dominoes cm/sec	P. 1	Length of Domino Row (cm)	Speed of Falling Dominoes cm/sec
53.5	90.7		45.5	111
60.5	90.3		54	52.4
73	105.8		41	51.3
55	110		54.5	51.9
65.5	102.3		41	58.6
45.2	43		54.5	68.1
			65	59.1
107	53		81	62.3
41.5	94.3		41.5	60.1
55	94.8		44.8	71.1
			104.5	45

Length of Domino Row (cm) X	Speed of Falling Dominoes cm/sec Y	P.2	Length of Domino Row (cm)	Speed of Falling Dominoes cm/sec
42	75		44	63
55	53.3		69.5	72
68	75.6		46	84
43	65.2		42	84
44.5	85.6		56	112
41.5	58.4		82.1	93
63.5	192.4		41.5	70.3
67.5	187.5		42	63.6
85.5	70.1		55	75.3
			68.5	116.1

Length of Domino Row (cm) X	Speed of Falling Dominoes cm/sec Y	P.3	Length of Domino Row (cm)	Speed of Falling Dominoes cm/sec
32	55.2			
41	57.7			
55	77.5		41	81.7
38	64.4		55.5	84.1
61.5	89.1		68	85
28	41.8		41	78.9
42	113.5		56	76.7
56	136.6		69	125.5
47	58		42.5	61.6
56.8	113.6		55	93.2
39	65		68.5	64
52	100		35.5	44.9
83	83.8		62	72.9
80.5	87.5		88.2	68.9
91.5	73.2			
125.5	96.5			

X Length of Domino Row (cm)	Y Speed of Falling Dominoes cm/sec	P.4	Length of Domino Row (cm)	Speed of Falling Dominoes cm/sec
37	50.7		40	38.1
55	86		55.1	68.9
42	89.4		70.6	100.9
68	87.2		41	83.7
81.5	74.8		58.5	110.4
58	53.2		67.5	102.3
82.5	87.8		69	75.8
44	54		82	70.7
56.5	73		41	70.7
55	105		41	83.7
41.5	62.9		92.5	63.8
43	55.8		70	101.4
56	87.5		40.8	61.8
69	101.3		56.5	122.8
49	49			
62.5	35.6			

Length of Domino Row X (cm)	Speed of Falling Dominoes Y cm/sec		Length of Domino Row (cm)	Speed of Falling Dominoes cm/sec
48.5	91.5	P.7	41	87.2
56.1	85		100	73.5
84.5	60.9		41	59.4
47	95.9		55	63.3
42.5	78		79	76.7
68	91.8		54	96.4
54	64.3		42	107.7
81	96.4		47.5	75.4
54.5	109		39.5	70.5
42	131.3		59	47.2
55	96.4			
68.7	84.8			
95.5	49.5			
68.5	53.1			
54.5	52.9			

Domino Dash - Creang a Spreadsheet and Chart with Trend Line

Go to the Classroom

Open Domino Dash Google Sheets

Click on the Title Domino Dash, delete the two **'s and add First name, Last name and P.1, 2, 3, 4, or 7

In Cell A1, enter Length of Domino Row (cm)

While in cell A1, click on Format and click on Wrap Text and then Align Center

In Cell B1, enter Speed of Falling Dominoes (cm/sec)

While in cell B1, click on Format and click on Wrap Text and then click on Align Center

Enter your data for Length of Domino Row (cm) in the A column

Enter your data for Speed of Falling Dominoes (cm/sec) in the B column

Select all data in columns A and B

On the tool bar, click on insert chart

On Chart Editor, click on charts

Click on Scaer and then click on the colored scaer chart

Click on insert

Click on the chart and resize and move your chart to the right of your data

Click on chart and then click on the down arrow in the upper right hand corner – Advanced edit

In the Red Axis secon, first create your horizontal (X axis) label with unit

Change the Min value to 0 and the Max value to 100

Uncheck the Allow bounds to hide data box

Next change the Red Axis secon to Le vercal and create your (Y axis) label with unit

Title your chart

Legend – click on None

For Trendline, click on Linear

Click on Update

Conclusions:

1. What relationship do we see between the length of the domino row and the speed of the falling dominoes? Use quantitative data to support your answer.

_____

_____

_____

_____

2. Refer to your hypothesis. My hypothesis was _____

_____

_____

It was right/wrong? (circle one)

Why?_____

_____