PHYSICS INMOTION

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Unit 1G
Graphing Relationships

Note-Taking Guide and Questions to Consider TEACHER

Main Ideas, Key Points, Questions:

After watching the video segment, write down key points, main ideas, and big questions.

Objective(s):

- *Determine how to create a line graph from an experiment, including where and how to label axes, correctly scale and number axes, plot points, and create line of best fit.*
- *Calculate the slope of the line of best fit for a data set in order to form conclusions.*

Notes:

*During the video segment, use words, phrases, or drawings to take notes.*

Summary:

After watching the video segment, write at least three sentences explaining what you learned. You may ask yourself: "If I was going to explain this to someone else, what would I say?"

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Answer the following.

1. What is the variable that is manipulated by the experimenter during an experiment called?

   The independent variable

2. On the diagram below, label the axes where the independent and dependent variables would be located.

   Dependent Variable

   Independent Variable
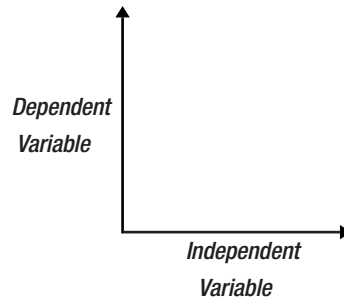
3. If you were given the following graph, identify the independent and dependent variables.

   Acceleration (m/s²)
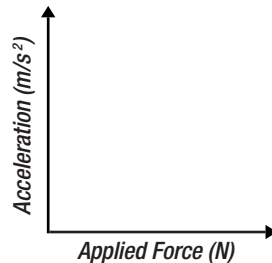
   Applied Force (N)

   Independent Variable- Applied Force (N)

   Dependent Variable- Acceleration (m/s²)

4. In addition to the title on the axis, what else must be included so that someone knows how to interpret the graph?

   The units of the variables must be included in parentheses.

5. In the slope-intercept form of a line, y=mx+b, which variable is the slope?

   The slope is represented by the letter "m"

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Answer the following.

6. **What is the equation for the slope of a line?**

$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1}$$

7. **On the diagram below, sketch an inversely proportional graph.**
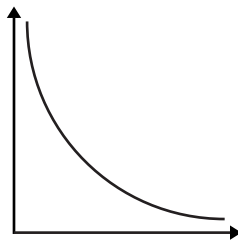
8. **On the diagram below, sketch an exponentially proportional graph.**