

# M102: Modeling with Linear Functions and Equations

## Pre-Badge Task

Name: \_\_\_\_\_

Teacher: \_\_\_\_\_

### New Badge Alert!

This task will provide a preview of what we will be learning during the M102 - Modeling with Linear Functions and Equations Badge. You already know so much math, so use this task to share any understanding that you have before we start our learning. You will have a chance to do the same task at the end of the badge to see how your thinking has evolved.

### The Task

Use the graph below to answer the questions that follow.



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**QUESTION 1** Describe at least three things that you know or notice about this graph.



**QUESTION 2**

- a. What real world situation could this graph represent?
- b. Based on the situation, describe what the variables  $x$  and  $y$  represent.
- c. Based on the situation, create labels and a scale for the graph.



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**QUESTION 3**

- a. What are the coordinates of the  $x$ -intercept? What does this point mean in this situation?
  
- b. What are the coordinates of the  $y$ -intercept? What does this point mean in this situation?



**QUESTION 4** Write an equation that represents the relationship between the variables.



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**QUESTION 5** What are the coordinates of one other point on the line? What does this point mean in this situation?



**QUESTION 6** Why is a line the best way to graphically represent the relationship between variables?

