

# Rate of Change, Activity 2

A(3)(B)

## Activity Objective

I can use the rate of change to determine missing information in a given representation of a linear function.

I can analyze rate of change in different mathematical contexts.

## Materials

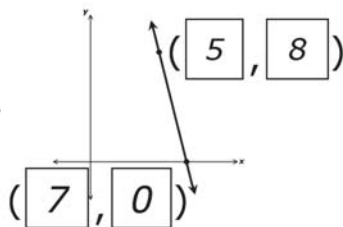
- Rate Puzzle
- Number Cards
- Scissors
- Tape or glue

## Answer Key

As the x-values increase by 1, the y-values increase by 2.

$$\boxed{4}x - \boxed{2}y = 12$$

The rate of change of the graphed line is -4.



The rate of change for the linear function represented in the table is

$$\frac{\boxed{1}}{\boxed{3}}$$

x	-6	0	6	<u>9</u>
y	<u>6</u>	8	10	11

## Debriefing Questions

- Where did you start placing values? Why?
- Were there any places where more than one value could have been used? Were there any places where only one value was possible?
- How did you determine which values to place as the coordinates of the points on the graph?
- What do the coefficients of  $x$  and  $y$  tell us when the equation is given in standard form?

## Listen For . . .

- *Connections among rate of change and the different representations of a linear function.*
- *Understanding that there is only one choice for how the table representation could be completed because the constant rate of change is determined by the given points.*

## Communicating about Mathematics

Students may respond by talking to a partner and recording a written response in the space provided.

Possible sentence frame:

A positive rate of change tells us that \_\_\_\_\_.

A negative rate of change tells us that \_\_\_\_\_.

## Listen/Look For . . .

*Understanding that a positive rate of change represents that the function is increasing as x-values increase, and a negative rate of change represents that the function is decreasing as the x-values increase.*

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

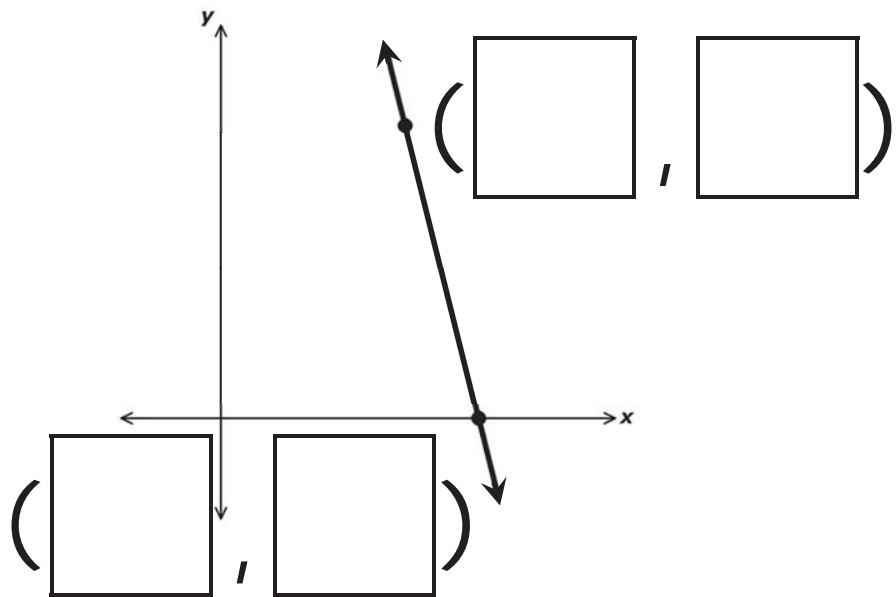
### Rate Puzzle

Cut out a set of **Number Cards**. Determine where to place each of the **Number Cards** to correctly represent the missing values in each representation. Each **Number Card** will only be used once.

As the  $x$ -values increase by 1, the  $y$ -values increase by 2.

$$\square x - \square y = 12$$

The rate of change of the graphed line is  $-4$ .



The rate of change for the linear function represented in the table is

$$\frac{\square}{\square} .$$

$x$	$-6$	$0$	$6$	
$y$		$8$	$10$	$11$

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Communicating about Mathematics**

What does the rate of change tell you about the relationship between the  $x$ -values and  $y$ -values.



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## Number Cards

*Cut along the bold dotted lines. Five sets of cards are provided.*

