Name _____ Date _____

Identifying Domain and Range

Explore

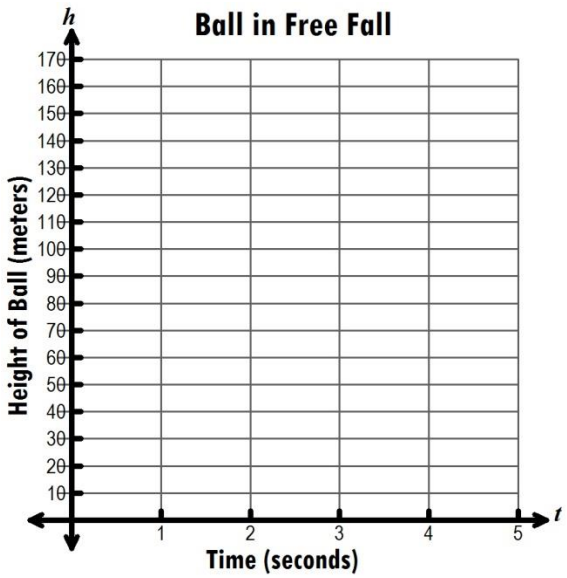
Height of a Ball in Free Fall

A ball is dropped from a 160-meter tall building. Its height after t seconds is modeled by the equation $h = 160 - 10t^2$.

1. Use the function to complete the table below.

Time (seconds) (t)	Process	Height of Ball (meters) (h)
0	$160 - 10(0)^2$	160
1		
2		
3		
4		
t		

2. Make a scatterplot of the height of the ball versus time. Connect the values using the function rule.



3. Use the table and graph to complete the comparison chart below.

	Possible t-values	Possible h-values
Function		
Situation		

Hint – Use words like:

- real numbers
- between
- including
- less than
- equal to

Name _____ Date _____

Debriefing Questions

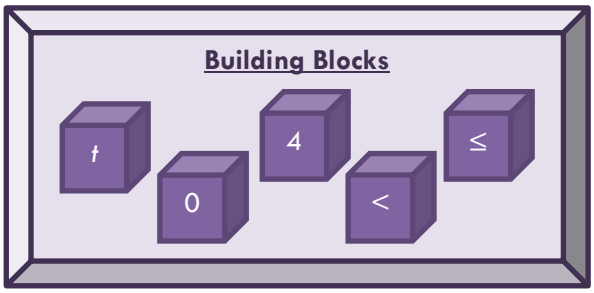
The **domain** of a function is all possible values of the *independent variable* that make sense in a situation.

1. Use words to describe the **domain** of the function that models the height of the ball.

2. Use words to describe the **domain** of the situation.

3. Are the domain of the function and the domain of the situation different? Explain.

4. Write an inequality representing the domain of the portion of the graph represented by the situation. Use the building blocks to help you. You may not use all of the blocks, or you may use some blocks more than once.



The **range** of a function is all possible values of the *dependent variable* that make sense in a situation.

5. Use words to describe the **range** of the function that models the height of the ball.

6. Use words to describe the **range** of the situation.

7. Are the range of the function and the range of the situation different? Explain.

8. Write an inequality representing the range of the portion of the graph represented by the situation. Use the building blocks to help you. You may not use all of the blocks, or you may use some blocks more than once.