



LESSON 15

Use Function Vocabulary

What You Need

- Recording Sheet

What You Do

- 1 Read the problem on the **Recording Sheet**. Think about how to solve it.
- 2 Read the paragraphs that tell how to solve the problem.
- 3 Use words from the word bank and numbers from the number bank to fill in the blanks. You can use each word or number only once. You will not use all the words or numbers.
- 4 Take turns. After you fill in a blank, the next group member fills in the next one.
- 5 When all the blanks are filled in, read the paragraphs aloud. Do they make sense?
- 6 Fix any mistakes if you need to.

KEEP IN MIND . . .

You might change your mind after you fill in some blanks. It's okay to erase!



Check Understanding

Use function vocabulary to explain whether the table shows a function.

Quarts (input)	2	4	6	8
Pints (output)	4	8	12	16



Go Further

Write three additional pairs of input and output values that are not shown in the table on the **Recording Sheet**. Be sure to choose values that you can show on the graph. Then plot the points on the graph. Explain how the graph shows that this relationship is a function.



Use Function Vocabulary

RECORDING SHEET

- Visitors to a farm can pick their own apples. It costs \$1 to enter the farm and \$2 for each pound of apples. Is the total cost of picking apples a function of the weight? If so, is the function a linear function or a nonlinear function?

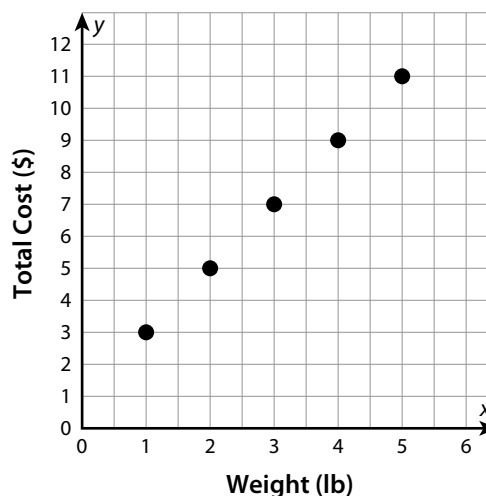
I can think of the problem description as a(n) _____ that tells me what to do to a starting value to get a final value. The starting value, or _____, is the number of pounds. The final value, or _____, is the total cost.

I can use this thinking to make a table.

Weight (x)	1	2	3	4	5
Total Cost (y)	_____	_____	_____	_____	_____

I know that a(n) _____ is a rule where each input has exactly one output. The table shows that this rule is a function. The _____ of picking apples is a function of the _____.

I can use the table to make a graph of the function. The graph shows that all the points lie on a(n) _____. That means this is a(n) _____ function.



Word Bank

function
input
linear
nonlinear
output
rule
straight line
total cost
weight

Number Bank

2
3
5
6
7
9
11



LESSON 16

Find the Function

What You Need

- Game Board
- counters, 8 of one color per team

What You Do

- 1 Work in two teams. Each team takes turns. Choose a letter.
- 2 Read the rate of change or initial value next to that letter in the table.
- 3 Find a function on the **Game Board** that has the given rate of change or initial value.
- 4 The other team checks your team's work.
- 5 If your team is correct, cover that function with a counter. If your team is incorrect, the other team covers that function with a counter.
- 6 Each team takes four turns. The team with the greater number of counters on the **Game Board** wins.

A	Initial value: 8
B	Rate of change: $-\frac{1}{2}$
C	Initial value: 6
D	Rate of change: 2
E	Rate of change: -1
F	Initial value: 3
G	Initial value: 30
H	Rate of change: 3
I	Rate of change: $\frac{1}{2}$



Check Understanding

The table shows the height of a drone in feet as a function of time in seconds as it descends at a constant rate. What is the rate of change? What is the initial value? Explain how you know.

Time (s)	2	4	6
Height (ft)	30	20	10



Go Further

Find the function on the **Game Board** that is not covered by a game marker. What is the rate of change and initial value for that function? Tell what each quantity represents in this situation.



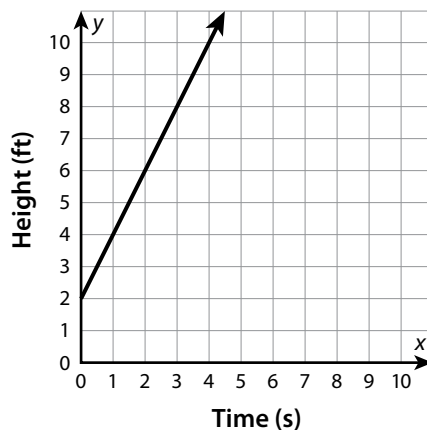
LESSON 16

Find the Function

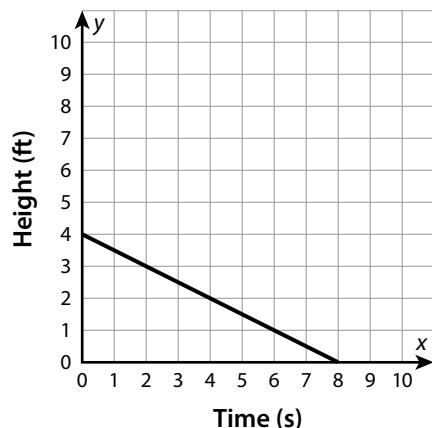
Each square on the **Game Board** describes or shows a drone's height in feet as a function of time in seconds as it ascends or descends at a constant rate.

GAME BOARD

The graph of the function passes through $(0, 7)$ and $(5, 2)$.



Time (s)	Height (ft)
10	43
12	51
14	59



Time (s)	Height (ft)
6	22
8	28
10	34

The drone rises 16 feet every 4 seconds. After 5 seconds, the drone is at a height of 26 feet.

Time (s)	Height (ft)
2	22
4	14
6	6

The graph of the function passes through $(1, 9)$ and $(4, 12)$.

