

Concept of Functions

Device From Port Charlotte Middle School Team

MAFS.8.F.1.1 Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.

MAFS.8.F.1.2 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.*

MAFS.8.F.1.3 Interpret the equation $y=m+b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. *For example, the function $A=s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points $(1,1)$, $(2,4)$ and $(3,9)$, which are not on a straight line.*

MAFS.8.F.2.4 Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.

MAFS.8.F.2.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

The Unit Organizer

④ BIGGER PICTURE

NAME _____
DATE _____

Pre-Algebra

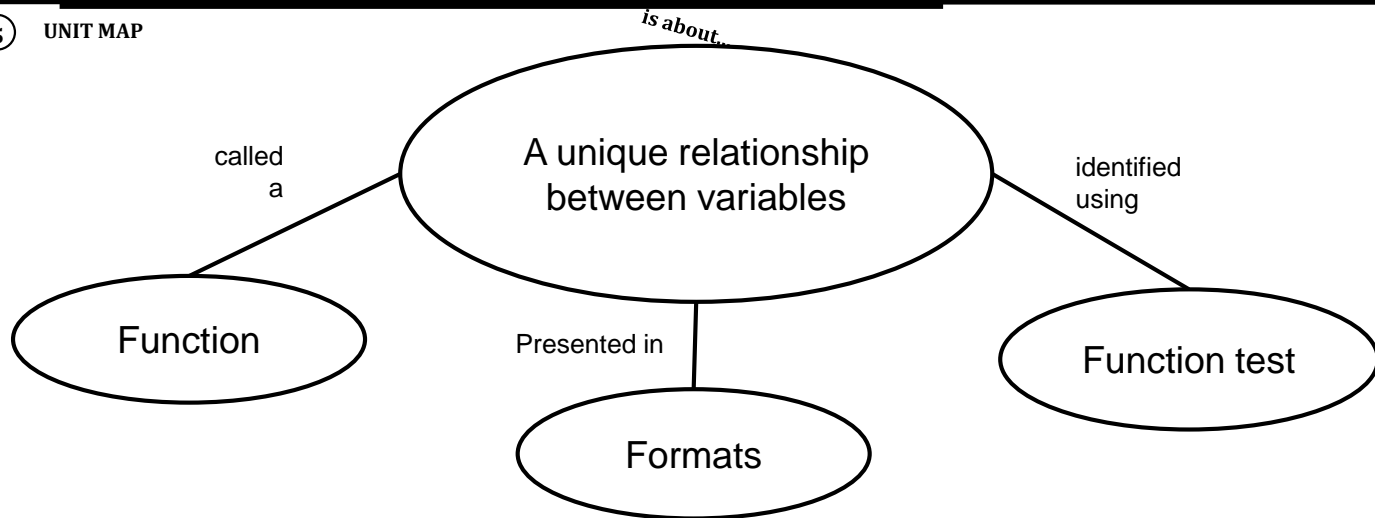
② LAST UNIT /Experience
Equations in two variables

① CURRENT UNIT
Concepts of Functions

③ NEXT UNIT /Experience
Number Systems

⑧ Vocabulary

⑤ UNIT MAP



	domain
	range
	function
	rate of change
	Linear
	Slope
	Equation
	table

UNIT SELF-TEST
QUESTIONS

1. How do I construct a function to model a linear relationship between two quantities (x,y)?
2. How do we recognize linear functions?
3. When graphing real-world data, what does the slope and intercept tell us?

⑦

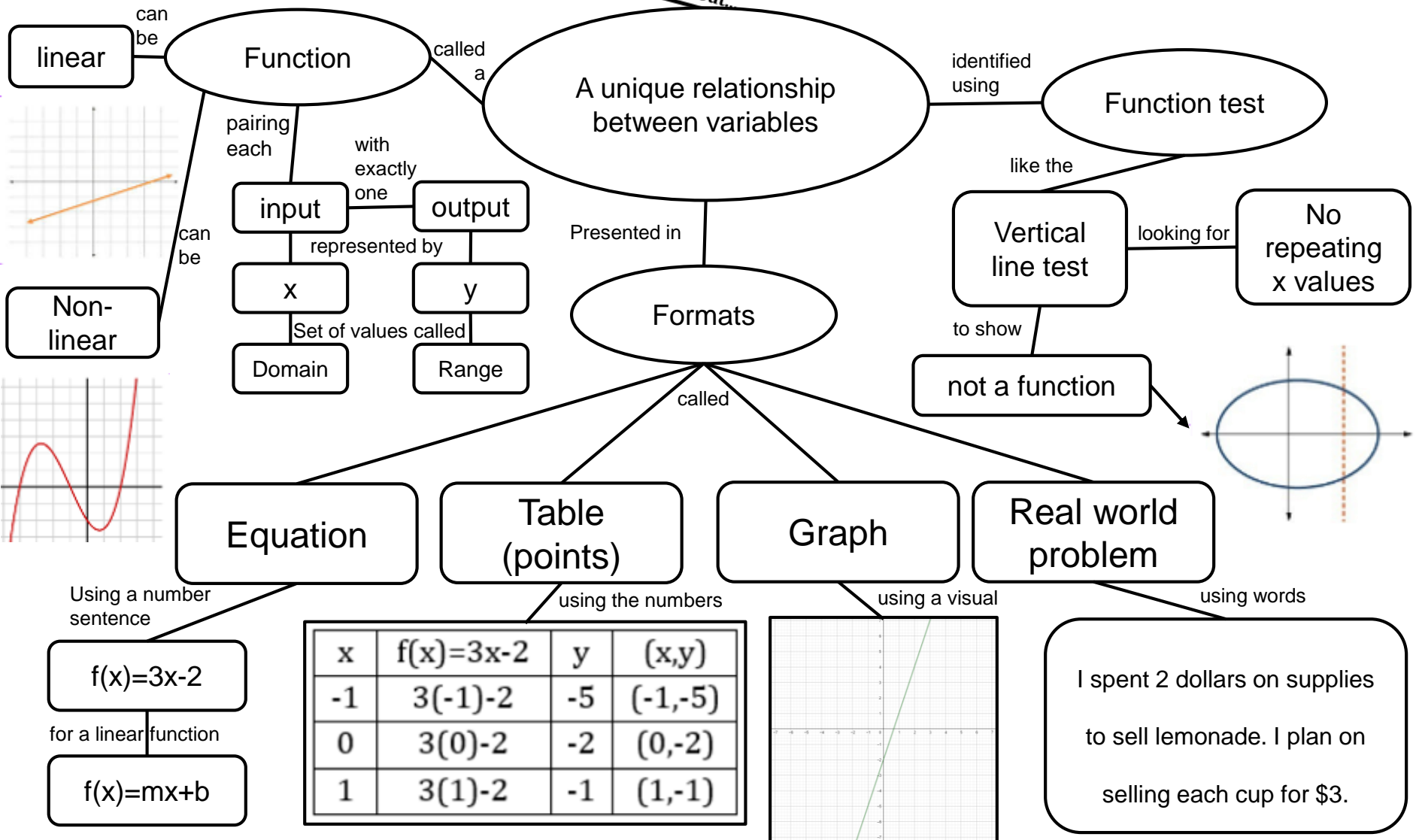
⑥

SELF
CHECK-IN

The Unit Organizer

NAME _____
DATE _____

9 Expanded Unit Map



10 Rate Yourself

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

11 Why?

The Unit Organizer

4 BIGGER PICTURE

NAME _____

DATE _____

Pre-Algebra

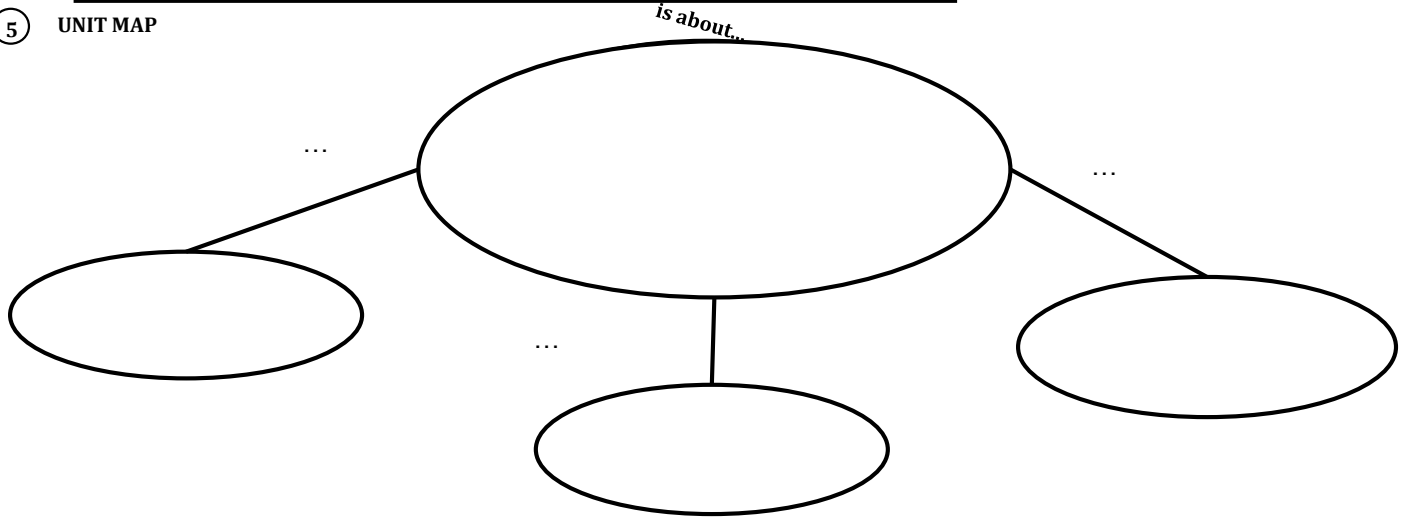
② LAST UNIT /Experience

① CURRENT UNIT

③ **NEXT UNIT** /Experience

⑧ Vocabulary

5 UNIT MAP



UNIT SELF-TEST QUESTIONS

How do I construct a function to model a linear relationship between two quantities (x,y)?

How do we recognize linear functions?

When graphing real-world data, what does the slope and intercept tell us?

⑥

SELF

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The mind map diagram illustrates various mathematical concepts branching from a central point. The branches include:

- A line graph showing a positive linear relationship.
- A box containing a smaller box and a graph of a sine wave.
- A vertical stack of three boxes.
- A horizontal stack of two boxes.
- A box containing a smaller box and a graph of a circle.
- A box containing a smaller box and a graph of a line.
- A box containing a smaller box and a table of values for the function $f(x) = 3x - 2$.
- A box containing a smaller box and a graph of a circle.

x	$f(x) = 3x - 2$	y	(x,y)
-1	$3(-1) - 2$	-5	$(-1, -5)$
0	$3(0) - 2$	-2	$(0, -2)$
1	$3(1) - 2$	-1	$(1, -1)$

I spent 2 dollars on supplies to sell lemonade. I plan on selling each cup for \$3.

Rate Yourself

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

11 Why?