learning focus:

- ✓ write and graph linear equations for real-world situations and identify key features
- ✓ calculate the rate of change of a linear function in real-world situations
- ✓ write linear inequalities and graph the solution set

LINEAR FUNCTIONS UNIT

14 DAY TEKS-ALIGNED UNIT

ALG 1

A MANEUVERING THE MIDDLE ® RESOURCE

LINEAR FUNCTIONS

a 14 day TEKS-aligned unit

TEKS: A.2B, A.2C, A.2H, A.3A, A.3B, A.3C, A.3D

ready-to-go, scaffolded student materials

LINEAR FUNCTIONS UNIT

Table of Contents

A MANEUVERING THE MIDDLE® RESOURCE

LINEAR FUNCTIONS

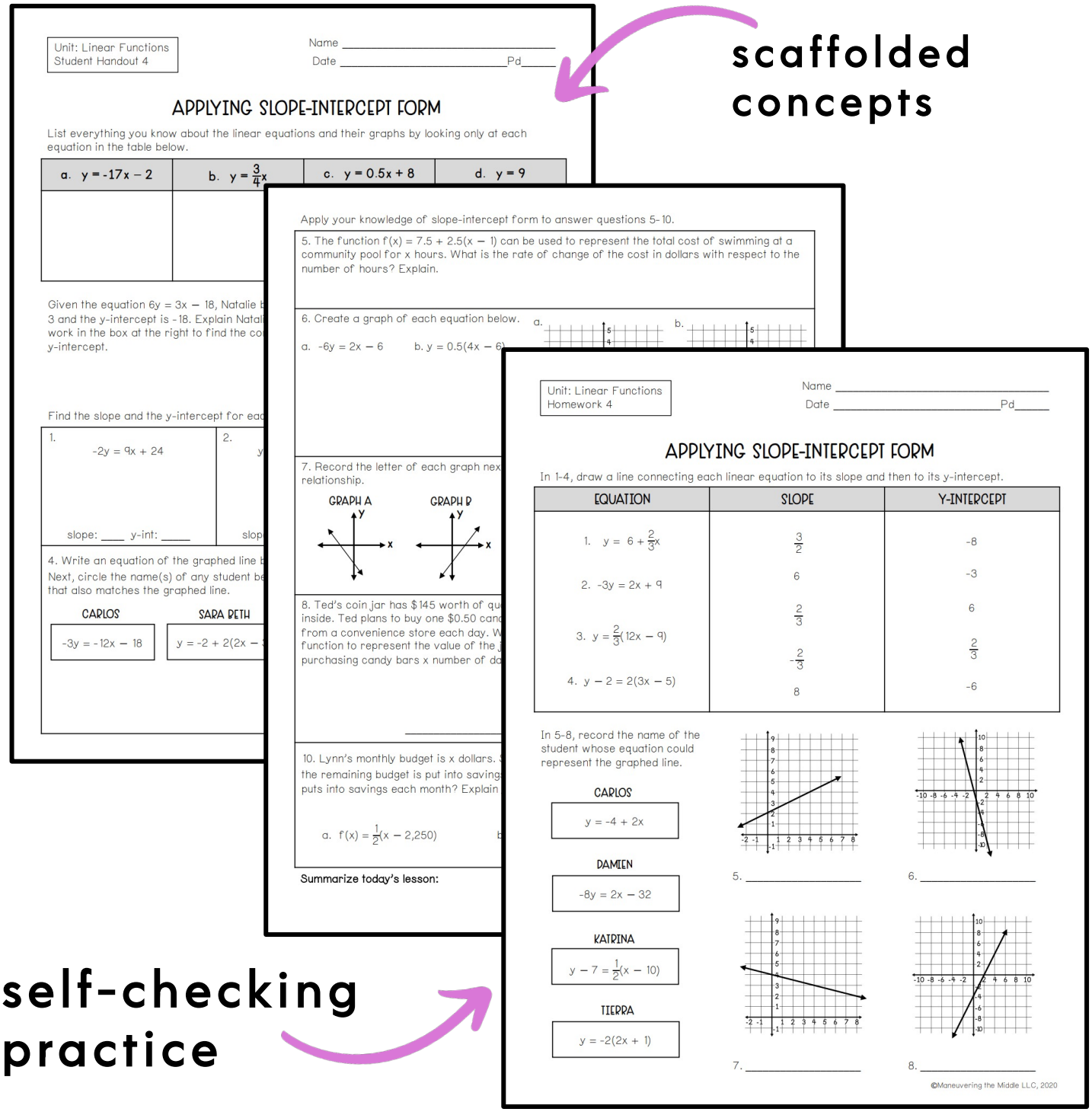
ALG 1

a 14 day TEKS-aligned unit

TEKS: A.2B, A.2C, A.2H, A.3A, A.3B, A.3C, A.3D

student friendly + real-world application

scaffolded concepts



self-checking practice

A MANEUVERING THE MIDDLE® RESOURCE

LINEAR FUNCTIONS

ALG 1

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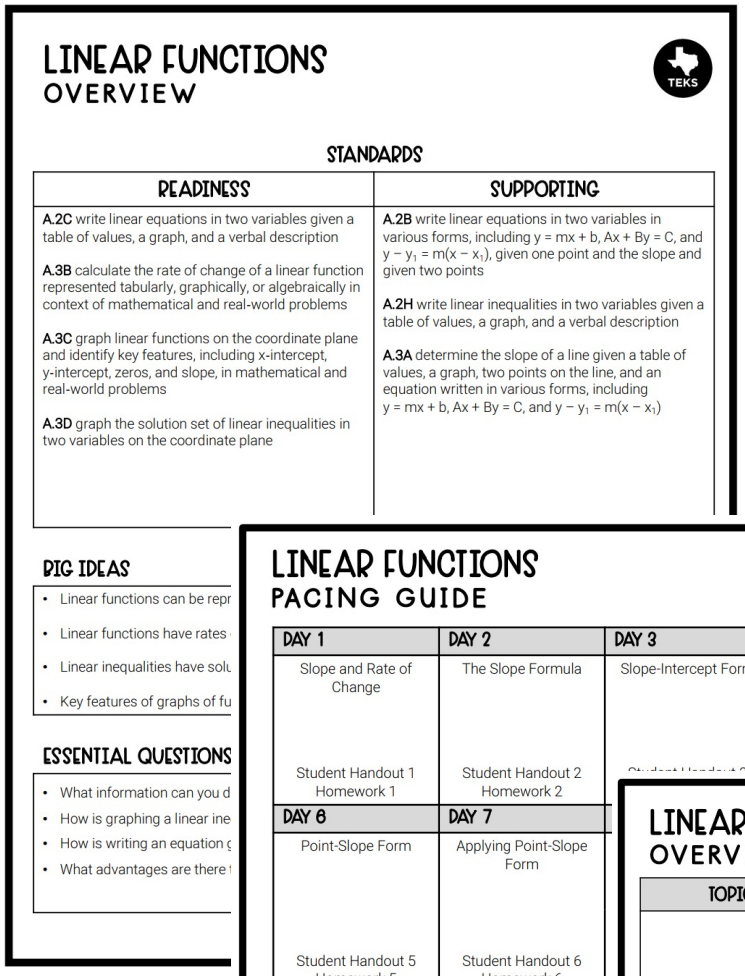
streamline your planning process with unit overviews



LINEAR FUNCTIONS
OVERVIEW

STANDARDS

READINESS	SUPPORTING
A.2C write linear equations in two variables given a table of values, a graph, and a verbal description **A.3B** calculate the rate of change of a linear function represented tabularly, graphically, or algebraically in context of mathematical and real-world problems **A.3C** graph linear functions on the coordinate plane and identify key features, including x-intercept, y-intercept, zeros, and slope, in mathematical and real-world problems **A.3D** graph the solution set of linear inequalities in two variables on the coordinate plane	**A.2B** write linear equations in two variables in various forms, including $y = mx + b$, $Ax + By = C$, and $y - y_1 = m(x - x_1)$, given one point and the slope and given two points **A.2H** write linear inequalities in two variables given a table of values, a graph, and a verbal description **A.3A** determine the slope of a line given a table of values, a graph, two points on the line, and an equation written in various forms, including $y = mx + b$, $Ax + By = C$, and $y - y_1 = m(x - x_1)$

BIG IDEAS

- Linear functions can be repr
- Linear functions have rates
- Linear inequalities have solu
- Key features of graphs of fu

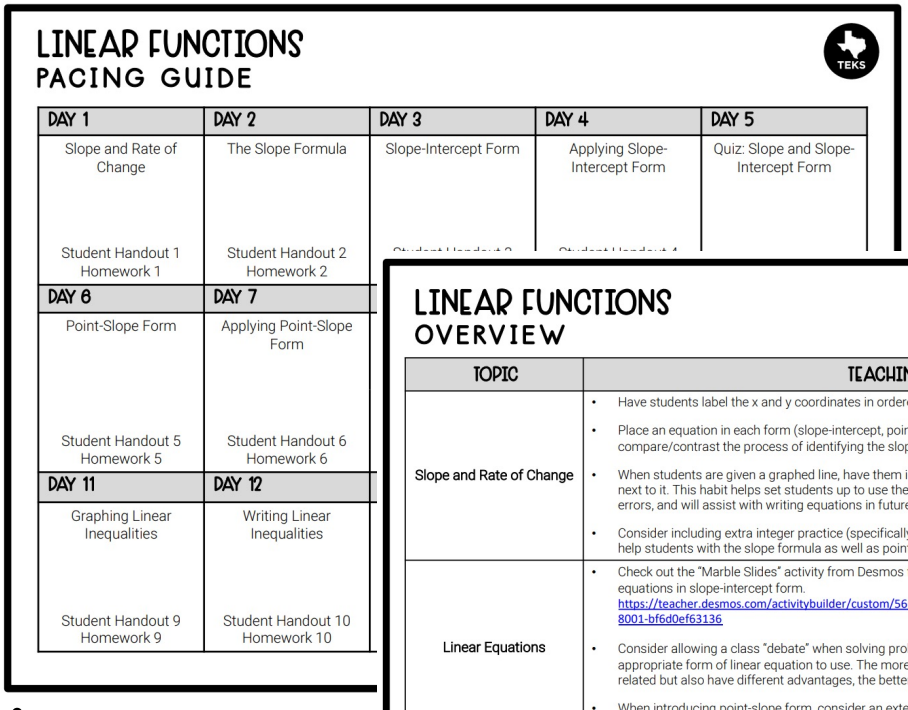
ESSENTIAL QUESTIONS

- What information can you d
- How is graphing a linear ine
- How is writing an equation
- What advantages are there

✓ key vocabulary

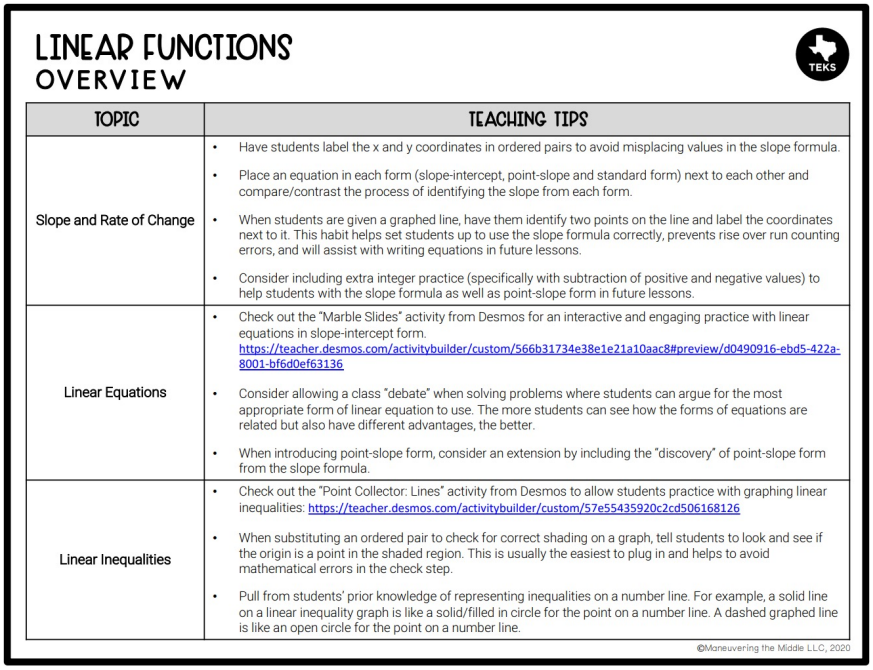
✓ vertical alignment

sample pacing calendar



LINEAR FUNCTIONS
PACING GUIDE

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
Slope and Rate of Change Student Handout 1 Homework 1	The Slope Formula Student Handout 2 Homework 2	Slope-Intercept Form	Applying Slope-Intercept Form	Quiz: Slope and Slope-Intercept Form
DAY 6	**DAY 7**			
Point-Slope Form Student Handout 5 Homework 5	Applying Point-Slope Form Student Handout 6 Homework 6			
DAY 11	**DAY 12**			
Graphing Linear Inequalities Student Handout 9 Homework 9	Writing Linear Inequalities Student Handout 10 Homework 10			



LINEAR FUNCTIONS
OVERVIEW

TOPIC	TEACHING TIPS
Slope and Rate of Change	• Have students label the x and y coordinates in ordered pairs to avoid misplacing values in the slope formula. • Place an equation in each form (slope-intercept, point-slope and standard form) next to each other and compare/contrast the process of identifying the slope from each form. • When students are given a graphed line, have them identify two points on the line and label the coordinates next to it. This habit helps set students up to use the slope formula correctly, prevents rise over run counting errors, and will assist with writing equations in future lessons. • Consider including extra integer practice (specifically with subtraction of positive and negative values) to help students with the slope formula as well as point-slope form in future lessons.
Linear Equations	• Check out the "Marble Slides" activity from Desmos for an interactive and engaging practice with linear equations in slope-intercept form. https://teacher.desmos.com/activitybuilder/custom/566b31734e38e1e21a10aac8#preview/d0490916-ebd5-422a-8001-bf6d0ef63136 • Consider allowing a class "debate" when solving problems where students can argue for the most appropriate form of linear equation to use. The more students can see how the forms of equations are related but also have different advantages, the better. • When introducing point-slope form, consider an extension by including the "discovery" of point-slope form from the slope formula.
Linear Inequalities	• Check out the "Point Collector: Lines" activity from Desmos to allow students practice with graphing linear inequalities: https://teacher.desmos.com/activitybuilder/custom/57e55435920c2cd506168126 • When substituting an ordered pair to check for correct shading on a graph, tell students to look and see if the origin is a point in the shaded region. This is usually the easiest to plug in and helps to avoid mathematical errors in the check step. • Pull from students' prior knowledge of representing inequalities on a number line. For example, a solid line on a linear inequality graph is like a solid/filled in circle for the point on a number line. A dashed graphed line is like an open circle for the point on a number line.

teaching ideas

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LINEAR FUNCTIONS

ALG 1

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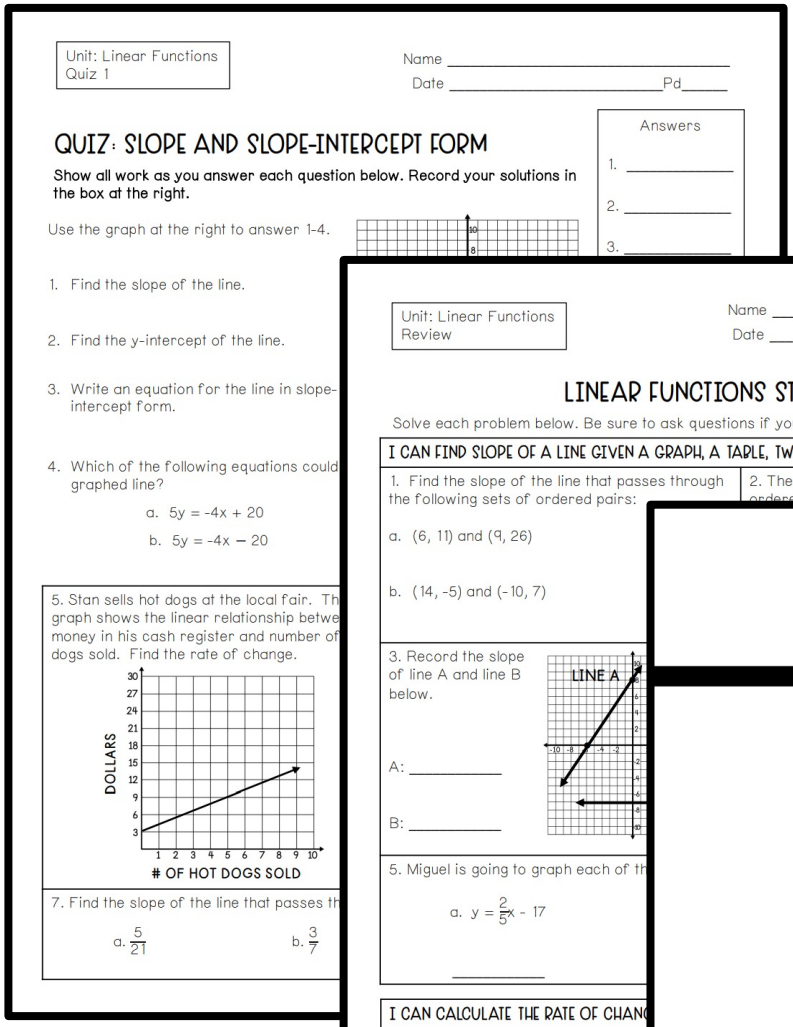
unit study guide + assessments


Unit: Linear Functions
Quiz 1

Name _____
Date _____ Pd_____

QUIZ: SLOPE AND SLOPE-INTERCEPT FORM

Show all work as you answer each question below. Record your solutions in the box at the right.

Answers
1. _____
2. _____
3. _____

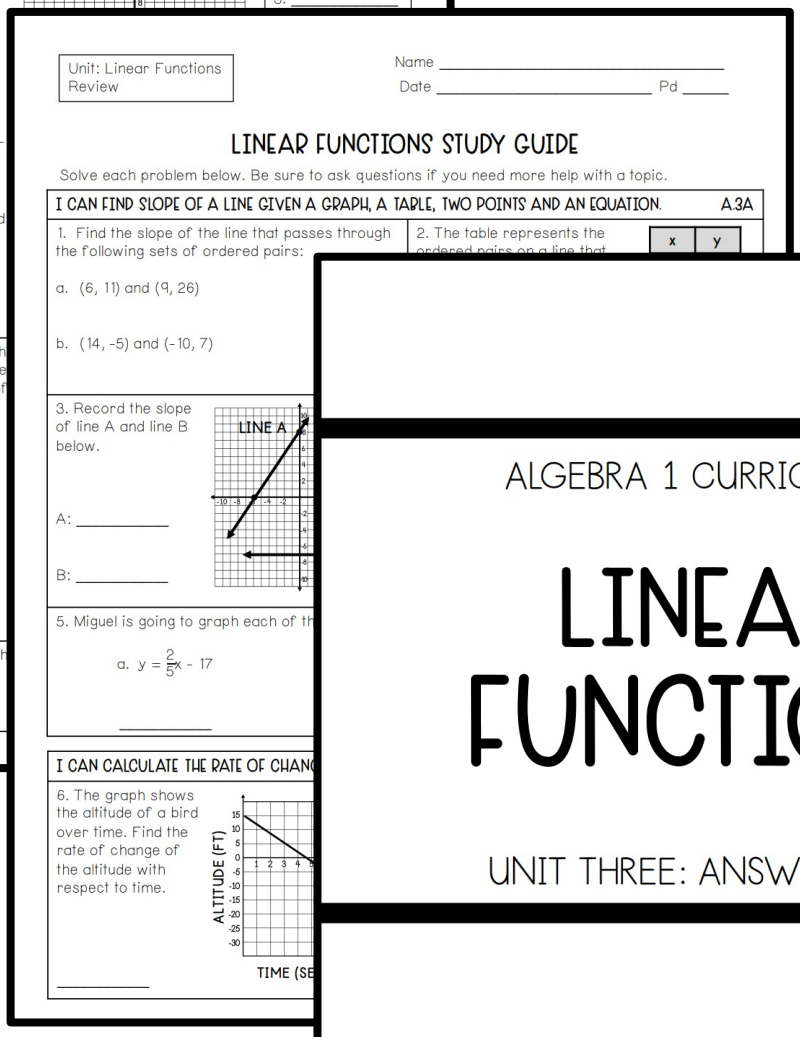
Use the graph at the right to answer 1-4.

1. Find the slope of the line.
2. Find the y-intercept of the line.
3. Write an equation for the line in slope-intercept form.
4. Which of the following equations could graphed line?
   a. 5y = -4x + 20
   b. 5y = -4x – 20

5. Stan sells hot dogs at the local fair. Th graph shows the linear relationship betwe money in his cash register and number of dogs sold. Find the rate of change.

DOLLARS
OF HOT DOGS SOLD

7. Find the slope of the line that passes th
   a. $\frac{5}{21}$ b. $\frac{3}{7}$


Unit: Linear Functions
Review

Name _____
Date _____ Pd _____

LINEAR FUNCTIONS STUDY GUIDE

Solve each problem below. Be sure to ask questions if you need more help with a topic.

I CAN FIND SLOPE OF A LINE GIVEN A GRAPH, A TABLE, TWO POINTS AND AN EQUATION. A.3A

1. Find the slope of the line that passes through the following sets of ordered pairs:
   a. (6, 11) and (9, 26)
   b. (14, -5) and (-10, 7)

2. The table represents the ordered pairs on a line that

x	y

3. Record the slope of line A and line B below.

LINE A

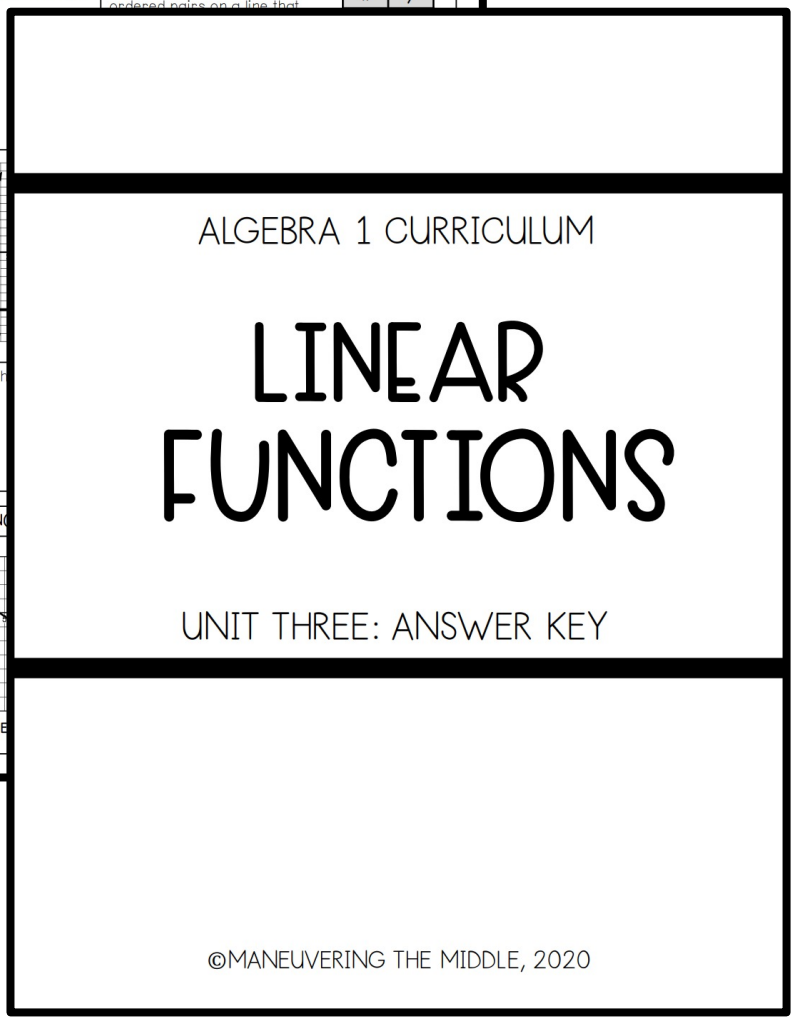
A: _____
B: _____

5. Miguel is going to graph each of th
   a. $y = \frac{2}{5}x - 17$

I CAN CALCULATE THE RATE OF CHANG

6. The graph shows the altitude of a bird over time. Find the rate of change of the altitude with respect to time.

ALTITUDE (FT)
TIME (SE


ALGEBRA 1 CURRICULUM

LINEAR FUNCTIONS

UNIT THREE: ANSWER KEY

- ✓ quizzes
- ✓ editable unit test

answer keys included

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