learning focus:

- ✓ identify functions and distinguish between proportional and non-proportional situations
- ✓ identify values that satisfy two linear equations from a graph
- ✓ use multiple representations to understand slope, rate of change, and direct variation

LINEAR RELATIONSHIPS

a 14 day TEKS-aligned unit

TEKS: 8.4A-C, 8.5A-B, 8.5E-I, 8.9A

ready-to-go, scaffolded student materials

LINEAR RELATIONSHIPS UNIT

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A MANEUVERING THE MIDDLE® RESOURCE

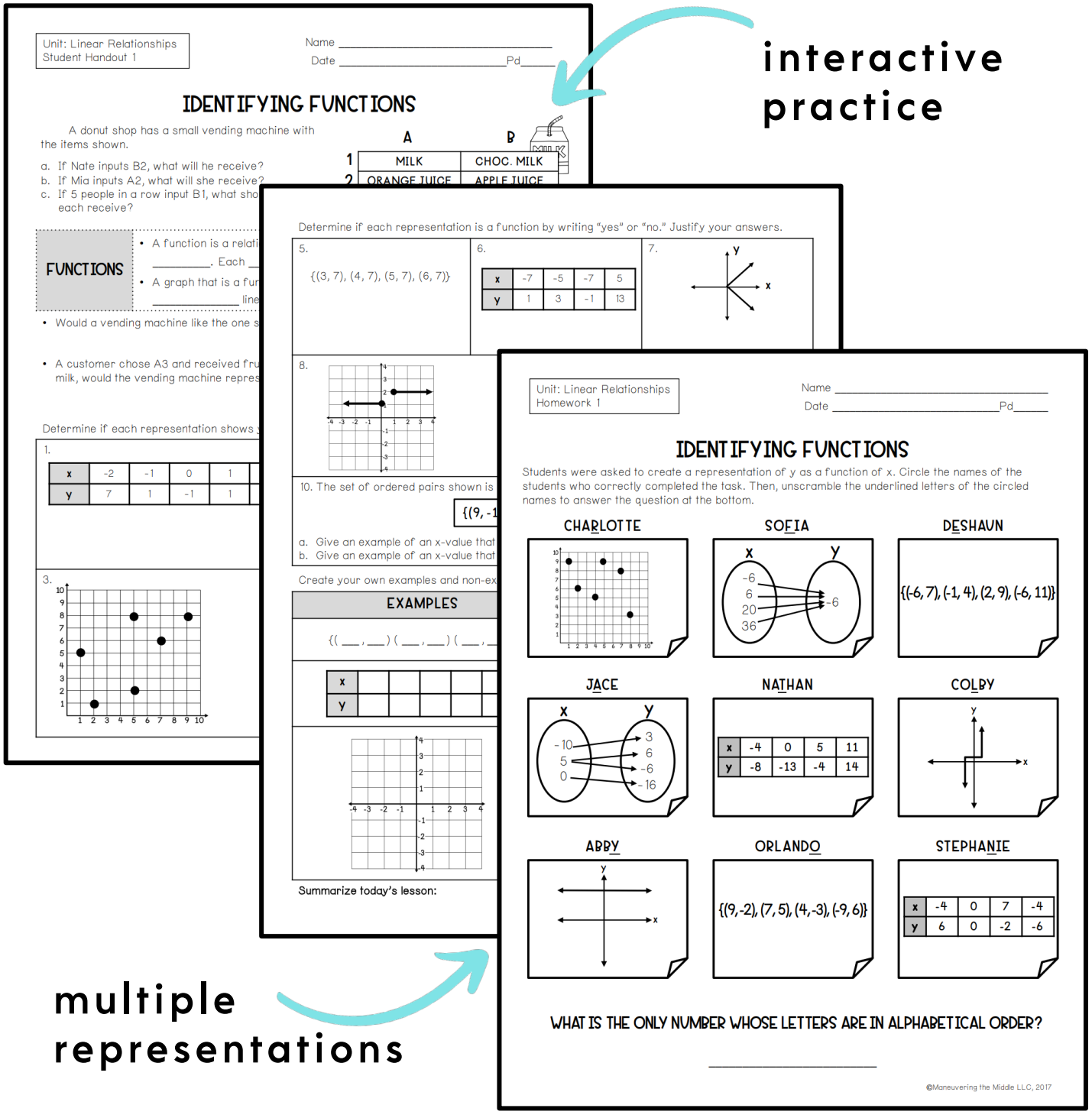
LINEAR RELATIONSHIPS

a 14 day TEKS-aligned unit

TEKS: 8.4A-C, 8.5A-B, 8.5E-I, 8.9A

student friendly + real-world application

interactive practice



multiple representations

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streamline your planning process with unit overviews

LINEAR RELATIONSHIPS
OVERVIEW

READINESS STANDARDS	SUPPORTING STANDARDS
8.4B Graph proportional relationships, interpreting the unit rate as the slope of the line that models the relationship. **8.4C** Use data from a table or graph to determine the rate of change or slope and y-intercept in mathematical and real-world problems. **8.5G** Identify functions using sets of ordered pairs, tables, mappings, and graphs. **8.5I** Write an equation in the form y = mx + b to model a linear relationship between two quantities using verbal, numerical, tabular, and graphical representations.	**8.4A** Use similar right triangles to develop an understanding that slope, m, given as the rate comparing the change in y-values to the change in x-values is the same for any two points on the same line. **8.5A** Represent linear proportional situations with tables, graphs, and equations in the form of y = kx. **8.5B** Represent linear non-proportional situations with tables, graphs, and equations in the form of y = mx + b, where b ≠ 0. **8.5E** Solve problems involving direct variation. **8.5F** Distinguish between proportional and non-proportional situations using tables, graphs, and equations in the form y = kx or y = mx + b, where b ≠ 0.

BIG IDEAS

- Functional relationships e
- Linear relationships can b descriptions.
- Linear relationships are ei

✓ key vocabulary

✓ vertical alignment

sample pacing calendar

LINEAR RELATIONSHIPS UNIT
PACING GUIDE

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
Identifying Functions Student Handout 1 Homework 1	Slope and Rate of Change Student Handout 2 Homework 2	The Slope Formula	Functions and Slope Mini-Quiz	Slope-Intercept Form: Part I
DAY 6	**DAY 7**			
Slope-Intercept Form: Part II Student Handout 5 Homework 5	Multiple Representations Student Handout 6 Homework 6			
DAY 11	**DAY 12**			
Proportional and Non-Proportional Relationships Student Handout 9 Homework 9	Direct Variation Student Handout 10 Homework 10			

LINEAR RELATIONSHIPS UNIT
OVERVIEW

TOPIC	TEACHING TIPS
Identifying Functions	• An analogy I like to give students is a vending machine. A "functioning" vending machine means that for any button I press, only one item should dispense. There can be more than one button for a particular item, but any chosen button (input) should only dispense one particular item (output).
Slope and Rate of Change	• Have students draw the side view of a steep ramp and the side view of a ramp that isn't very steep. Allow students to discuss what makes one ramp steeper than the other and emphasize the differences in the vertical change over the horizontal change.
Slope-Intercept Form	• Search "Linear Equations" on www.Flocabulary.com for a related video. • To help students remember "b" is the y-intercept, use alliteration to say that "b" represents "begin".
Systems of Equations	• While the 8th TEKS doesn't specify that students must graph the two equations themselves, consider extending the lesson by having students practice graphing to reinforce and increase their mastery of the concepts of slope and y-intercept.
Proportional and Non-Proportional Relationships	• An easy question students can ask to see if a situation is proportional is, "As one quantity doubles, does the other quantity double?" If the answer is yes, the relationship is proportional.
Direct Variation	• In the equation y = kx, I tell students to think of "k" making the same sound as the c in "constant of proportionality" in order to help them remember the meaning of the variable "k."

teaching ideas

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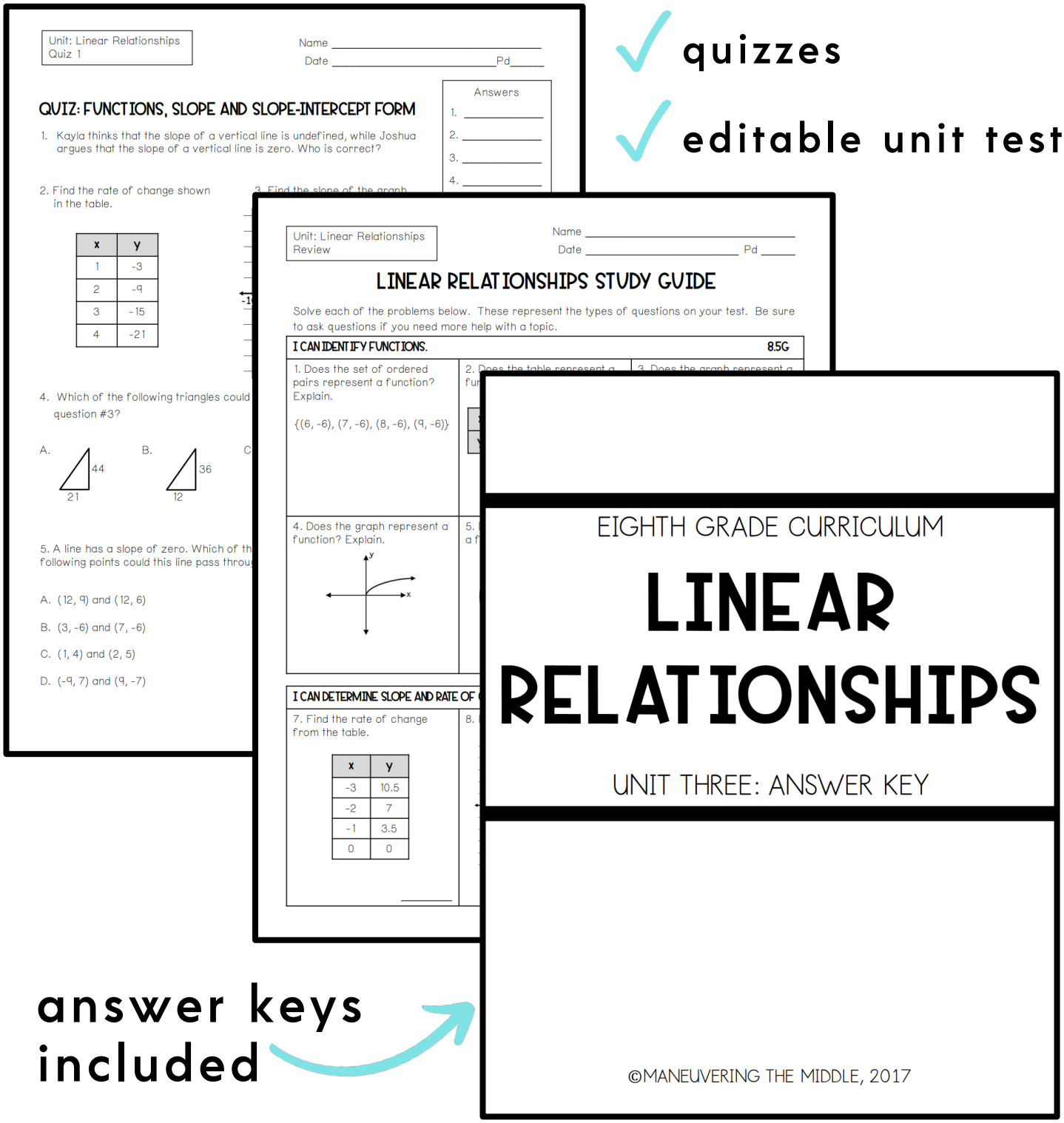
unit study guide + assessments



✓ quizzes

✓ editable unit test

answer keys included

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