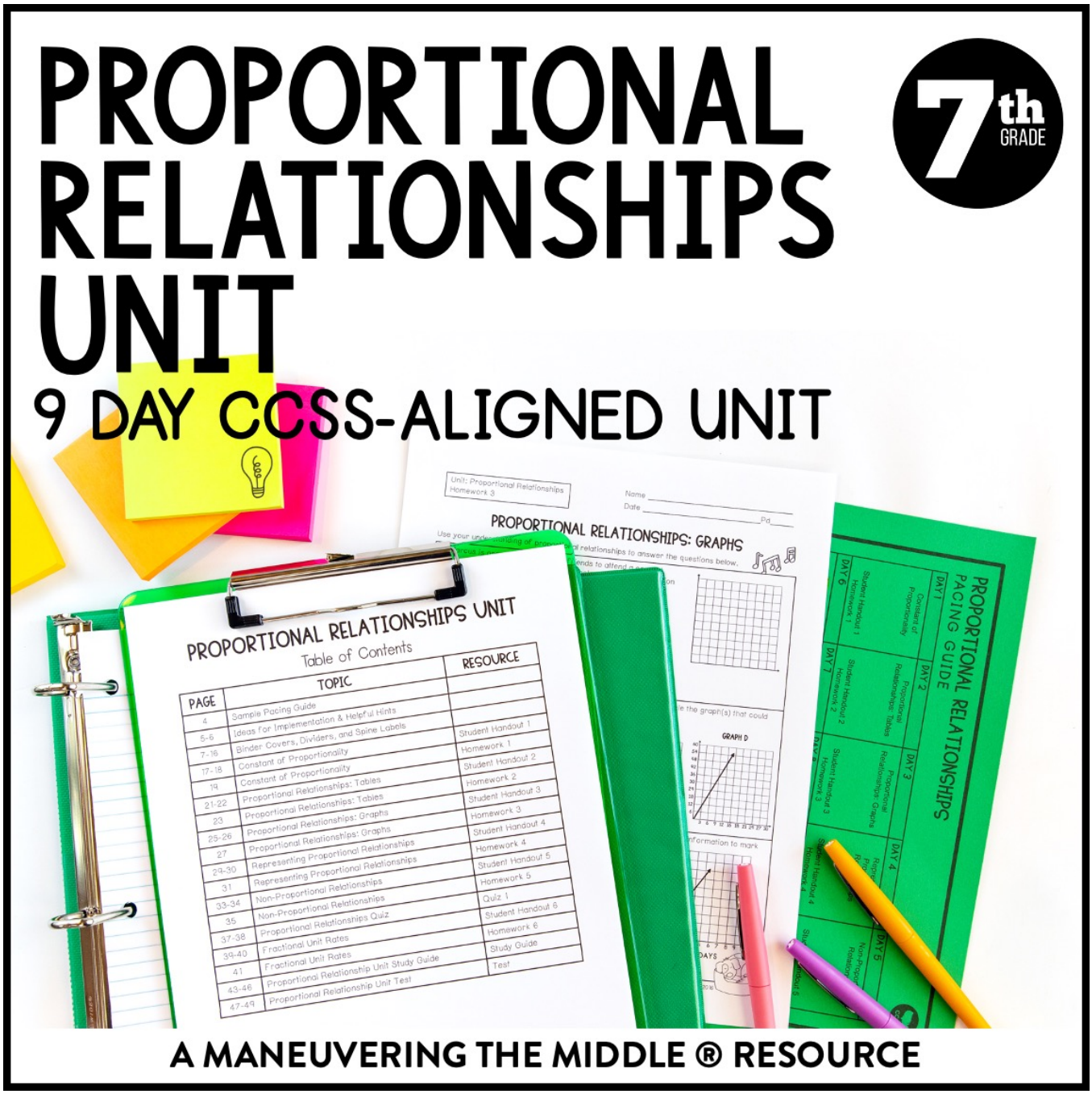
learning focus:

- ✓ determine if a relationship is proportional or non-proportional
- ✓ compute unit rates involving fractions
- ✓ represent proportional relationships using tables, graphs, and equations



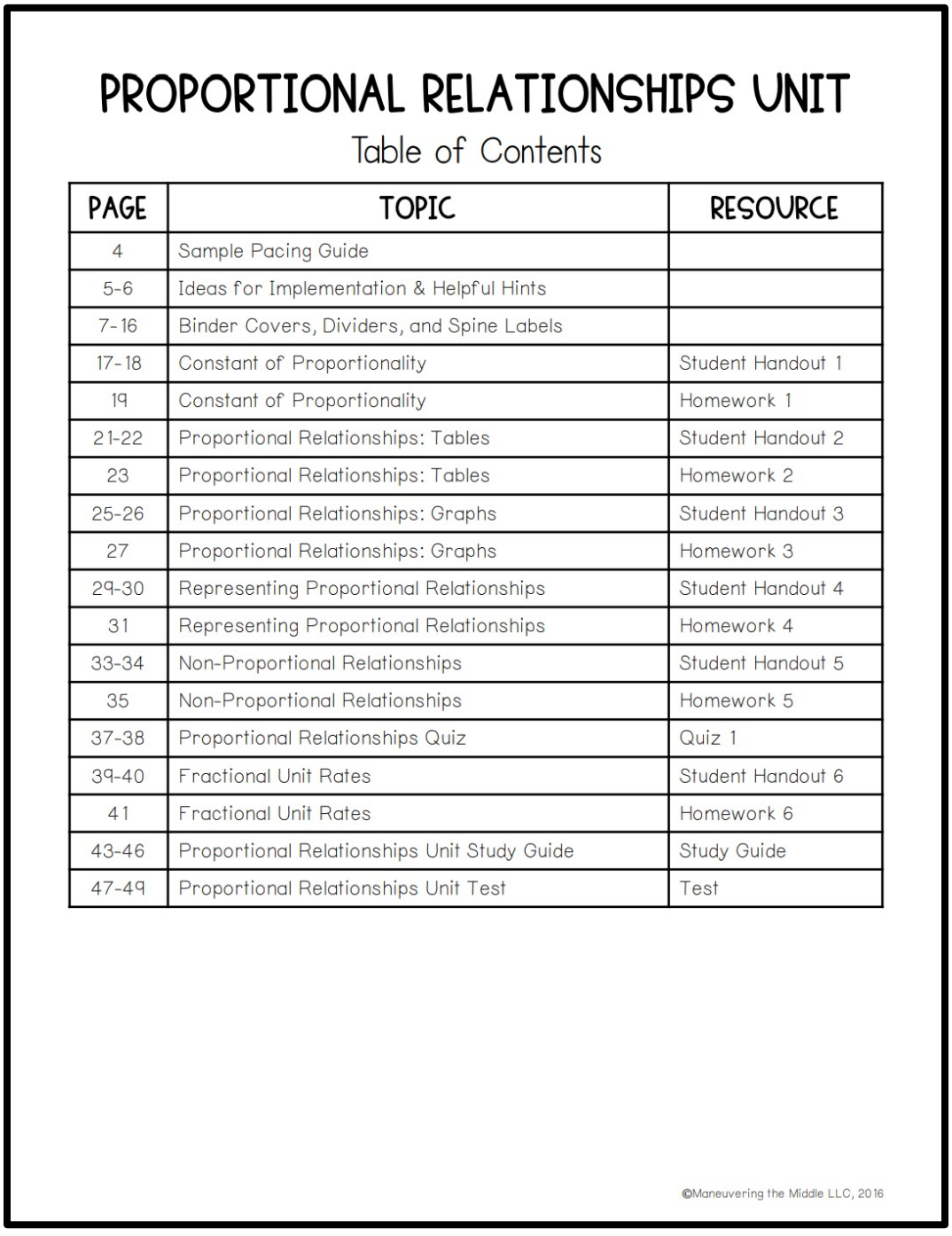
PROPORTIONAL RELATIONSHIPS

7th GRADE

a 9 day CCSS-aligned unit

CCSS: 7.RP.1, 7.RP.2, 7.RP.2a, 7.RP.2b, 7.RP.2c, 7.RP.2d

ready-to-go, scaffolded student materials



PROPORTIONAL RELATIONSHIPS UNIT

Table of Contents

A MANEUVERING THE MIDDLE® RESOURCE

PROPORTIONAL RELATIONSHIPS

7th GRADE

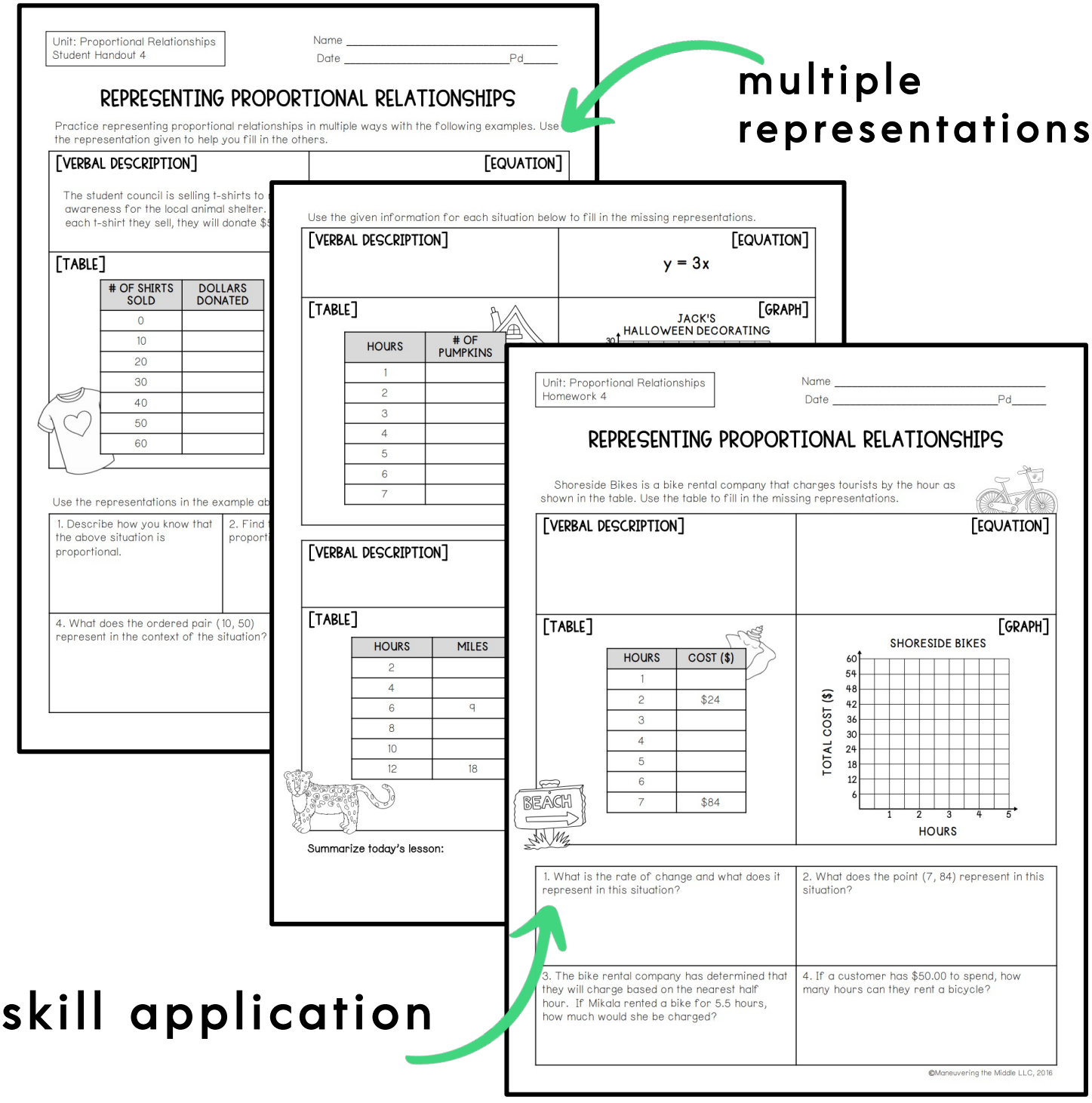
a 9 day CCSS-aligned unit

CCSS: 7.RP.1, 7.RP.2, 7.RP.2a, 7.RP.2b, 7.RP.2c, 7.RP.2d

student friendly + real-world application

multiple representations

skill application



A MANEUVERING THE MIDDLE® RESOURCE

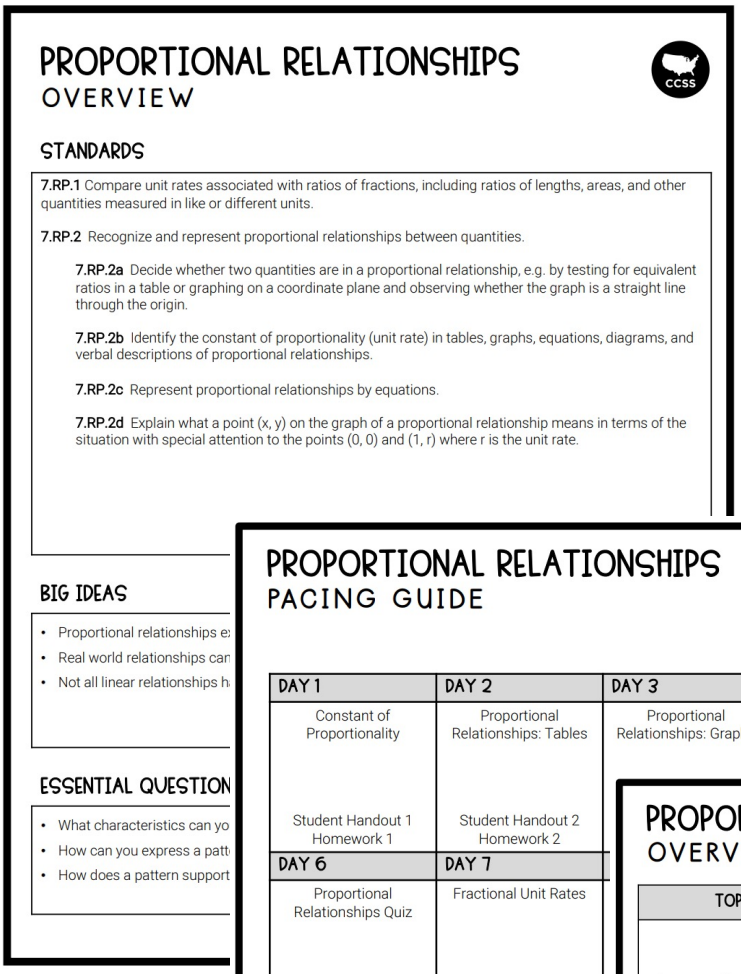
PROPORTIONAL RELATIONSHIPS

7th GRADE

a 9 day CCSS-aligned unit

CCSS: 7.RP.1, 7.RP.2, 7.RP.2a, 7.RP.2b, 7.RP.2c, 7.RP.2d

streamline your planning process with unit overviews



PROPORTIONAL RELATIONSHIPS
OVERVIEW

CCSS

STANDARDS

7.RP.1 Compare unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units.

7.RP.2 Recognize and represent proportional relationships between quantities.

7.RP.2a Decide whether two quantities are in a proportional relationship, e.g. by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.

7.RP.2b Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.

7.RP.2c Represent proportional relationships by equations.

7.RP.2d Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation with special attention to the points (0, 0) and (1, r) where r is the unit rate.

BIG IDEAS

- Proportional relationships e
- Real world relationships can
- Not all linear relationships h

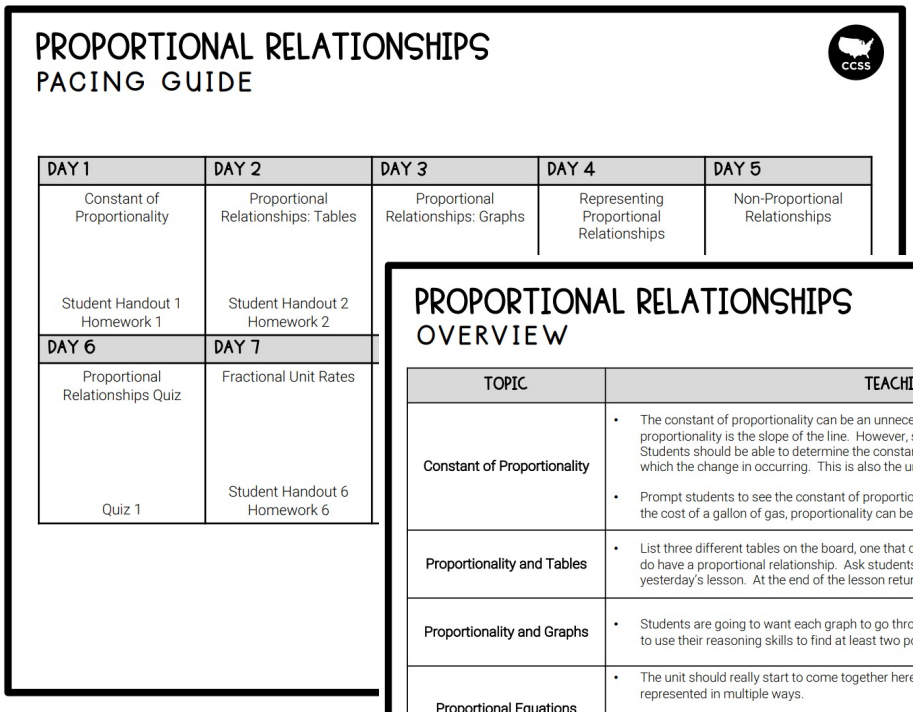
ESSENTIAL QUESTION

- What characteristics can yo
- How can you express a patt
- How does a pattern support

✓ key vocabulary

✓ vertical alignment

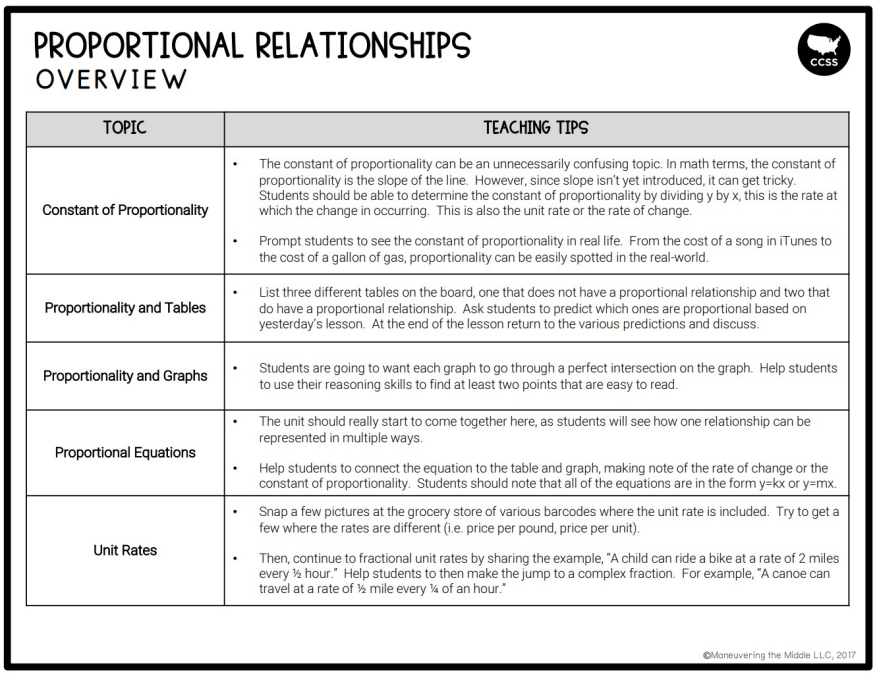
sample pacing calendar



PROPORTIONAL RELATIONSHIPS
PACING GUIDE

CCSS

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
Constant of Proportionality Student Handout 1 Homework 1	Proportional Relationships: Tables Student Handout 2 Homework 2	Proportional Relationships: Graphs	Representing Proportional Relationships	Non-Proportional Relationships
DAY 6	**DAY 7**			
Proportional Relationships Quiz Quiz 1	Fractional Unit Rates Student Handout 6 Homework 6			



PROPORTIONAL RELATIONSHIPS
OVERVIEW

CCSS

TOPIC	TEACHING TIPS
Constant of Proportionality	• The constant of proportionality can be an unnecessarily confusing topic. In math terms, the constant of proportionality is the slope of the line. However, since slope isn't yet introduced, it can get tricky. Students should be able to determine the constant of proportionality by dividing y by x, this is the rate at which the change in occurring. This is also the unit rate or the rate of change. • Prompt students to see the constant of proportionality in real life. From the cost of a song in iTunes to the cost of a gallon of gas, proportionality can be easily spotted in the real-world.
Proportionality and Tables	• List three different tables on the board, one that does not have a proportional relationship and two that do have a proportional relationship. Ask students to predict which ones are proportional based on yesterday's lesson. At the end of the lesson return to the various predictions and discuss.
Proportionality and Graphs	• Students are going to want each graph to go through a perfect intersection on the graph. Help students to use their reasoning skills to find at least two points that are easy to read.
Proportional Equations	• The unit should really start to come together here, as students will see how one relationship can be represented in multiple ways. • Help students to connect the equation to the table and graph, making note of the rate of change or the constant of proportionality. Students should note that all of the equations are in the form y=kx or y=mx.
Unit Rates	• Snap a few pictures at the grocery store of various barcodes where the unit rate is included. Try to get a few where the rates are different (i.e. price per pound, price per unit). • Then, continue to fractional unit rates by sharing the example, "A child can ride a bike at a rate of 2 miles every ½ hour." Help students to then make the jump to a complex fraction. For example, "A canoe can travel at a rate of ½ mile every ¼ of an hour."

teaching ideas

A MANEUVERING THE MIDDLE® RESOURCE

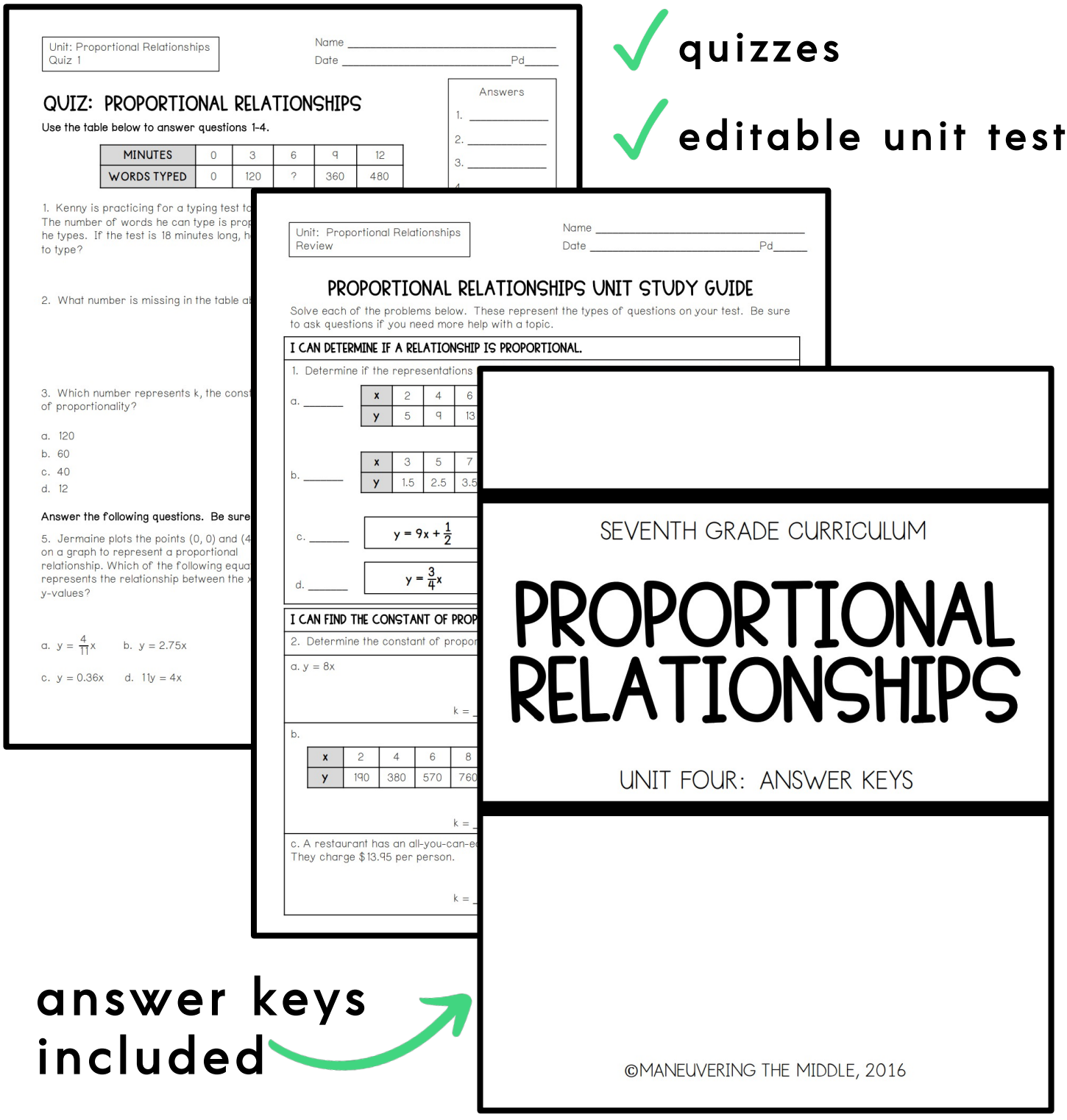
PROPORTIONAL RELATIONSHIPS

7th GRADE

a 9 day CCSS-aligned unit

CCSS: 7.RP.1, 7.RP.2, 7.RP.2a, 7.RP.2b, 7.RP.2c, 7.RP.2d

unit study guide + assessments



✓ quizzes

✓ editable unit test

answer keys included

A MANEUVERING THE MIDDLE® RESOURCE