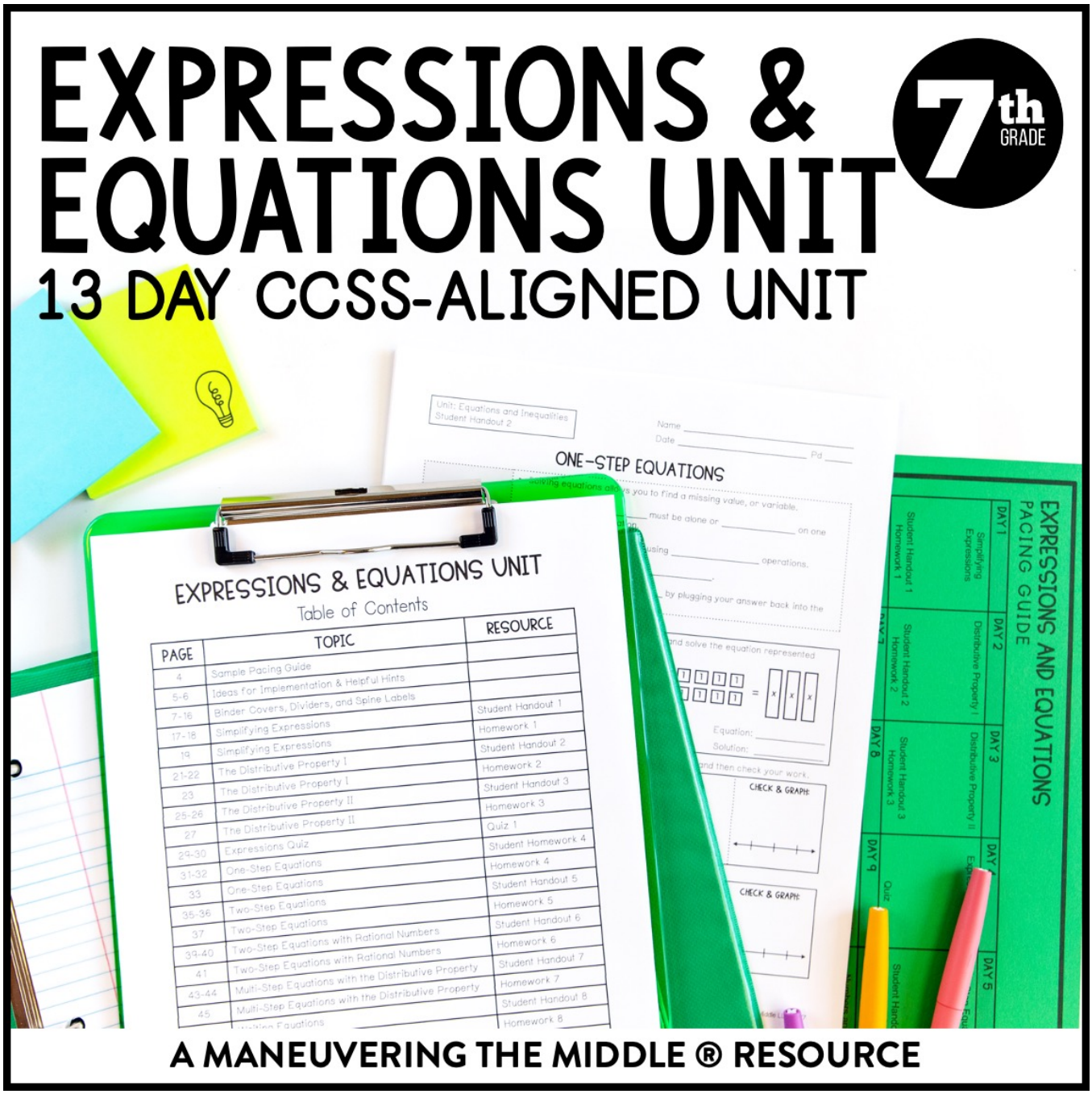
learning focus:

- ✓ add, subtract, factor, and expand linear expressions with rational coefficients
- ✓ solve two-step and multi-step equations including using the distributive property
- ✓ write and solve equations that represent real-world situations



EXPRESSIONS & EQUATIONS

7th GRADE

a 13 day CCSS-aligned unit

CCSS: 7.EE.1, 7.EE.2, 7.EE.3, 7.EE.4, 7.EE.4A

ready-to-go, scaffolded student materials

EXPRESSIONS & EQUATIONS UNIT

Table of Contents

A MANEUVERING THE MIDDLE® RESOURCE

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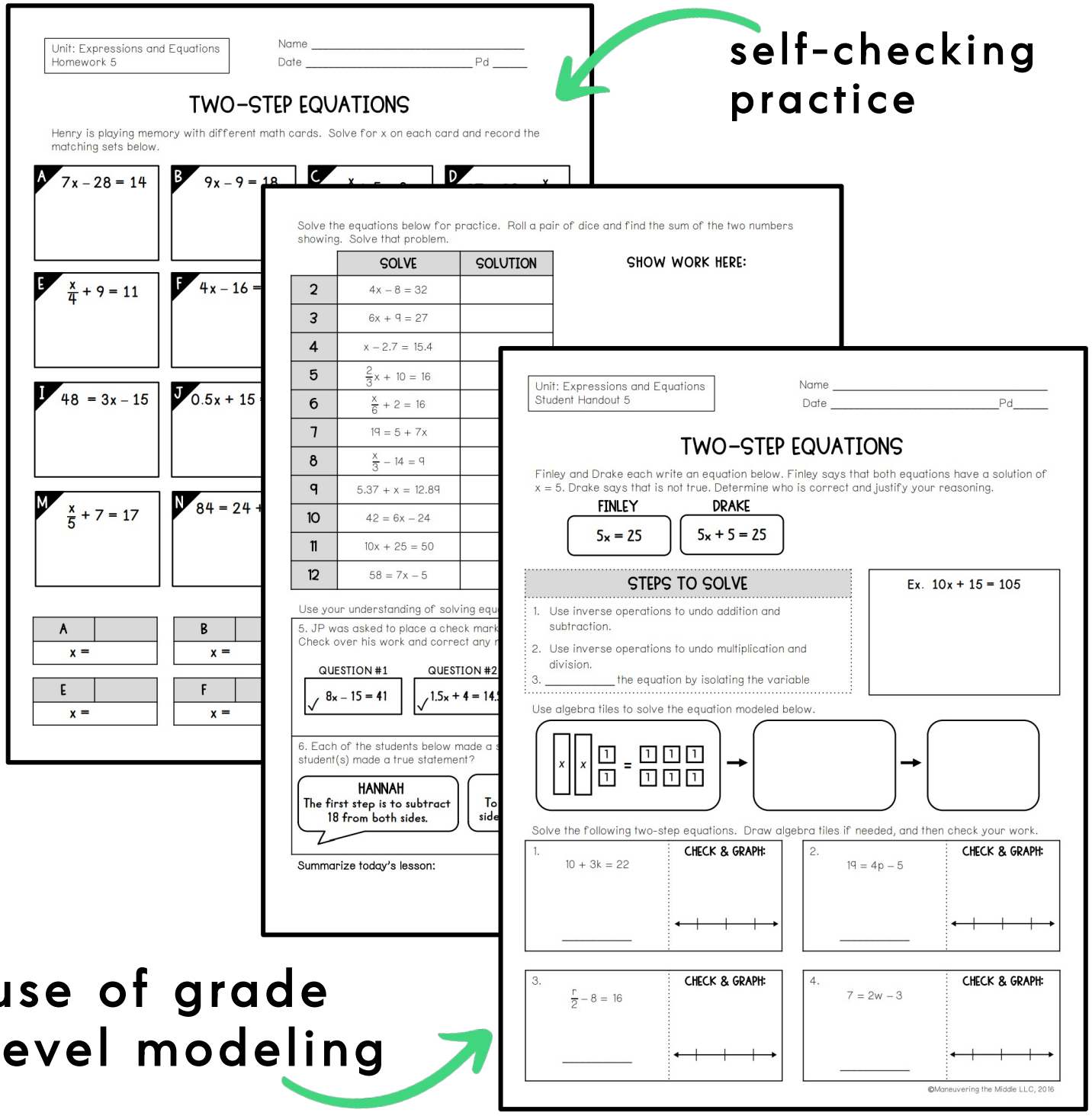
student friendly + real-world application



self-checking practice

use of grade level modeling

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streamline your planning process with unit overviews

EXPRESSIONS AND EQUATIONS
OVERVIEW

CCSS

STANDARDS

7.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.

7.EE.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.

7.EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.

7.EE.4 Use variables to represent quantities in real-world or mathematical problems, and construct simple equations and inequalities to solve problems by reasoning about the quantities.

7.EE.4A Solve word problems leading to equations of the form $px+q=r$ and $p(x+q)=r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of operations used in each approach.

BIG IDEAS

- Mathematical and real-worl
- Expressions are mathemati
- An expression can include le
- Expressions are used in real

ESSENTIAL QUESTION

- What process can you use t
- Why do properties of operat
- Why do we differentiate bet
- How can a real-world situati

✓ key vocabulary

✓ vertical alignment

sample pacing calendar

EXPRESSIONS AND EQUATIONS
PACING GUIDE

CCSS

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
Simplifying Expressions Student Handout 1 Homework 1	The Distributive Property Student Handout 2 Homework 2	Distributing a Negative Number Student Handout 3	Expressions Quiz	One-Step Equations Student Handout 4
DAY 6	**DAY 7**			
Two-Step Equations Student Handout 5 Homework 5	Two-Step Equations with Rational Numbers Student Handout 6 Homework 6			
DAY 11	**DAY 12**			
Applying Multi-Step Equations Student Handout 9 Homework 9	Expressions and Equations Unit Study Guide Unit Study Guide			

EXPRESSIONS AND EQUATIONS
OVERVIEW

CCSS

TOPIC	TEACHING TIPS
Combining Like Terms	• Write several different types of terms on the board. Ask two students to come up to the board with a fly swatter. When you call out a term, the first student to "swat" a like term wins the point for the team. Continue with other students. Keep score if your students can handle it. ☺
The Distributive Property	• Help students to see that they are already familiar with the distributive property by connecting it to 4(5+2). Then, show students how the same process applies even with a variable. • Students tend to struggle when distributing a negative number, especially a negative one. It might help struggling students to highlight the value that is being distributed before they begin solving the problem.
Properties of Operations	• Properties are a struggle to recall and apply. I suggest creating a large anchor chart with a three-column table. Include the name of the property and an example of two equivalent expressions. The key concept students should be able to recognize is that each property results in an equivalent expression; the property does not change the problem.
Solving One-Step Equations	• Start by displaying a very long and complex equation on the board. Explain that today you are setting the foundation for these types of equations. Then, require students to show their steps as they solve. This will come in handy when rational numbers are included in a few days.
Solving Two-Step Equations	• Give students individual white boards and have them work in teams of three. With one equation written on the board, the first person will solve step one. The second person will complete the second step in solving and the third will check the equation. Have groups hold up their boards when they are finished.
Solving Equations Application	• I found that if students were able to create a scenario based on a given equation, they are more likely to be able to write an equation from a situation. Consider displaying an equation and giving partners one minute to create a scenario. Then, choose groups to share and ask the class to make any corrections to their scenario. This can get a bit silly as students might use other classmates' names or goofy situations.

teaching ideas

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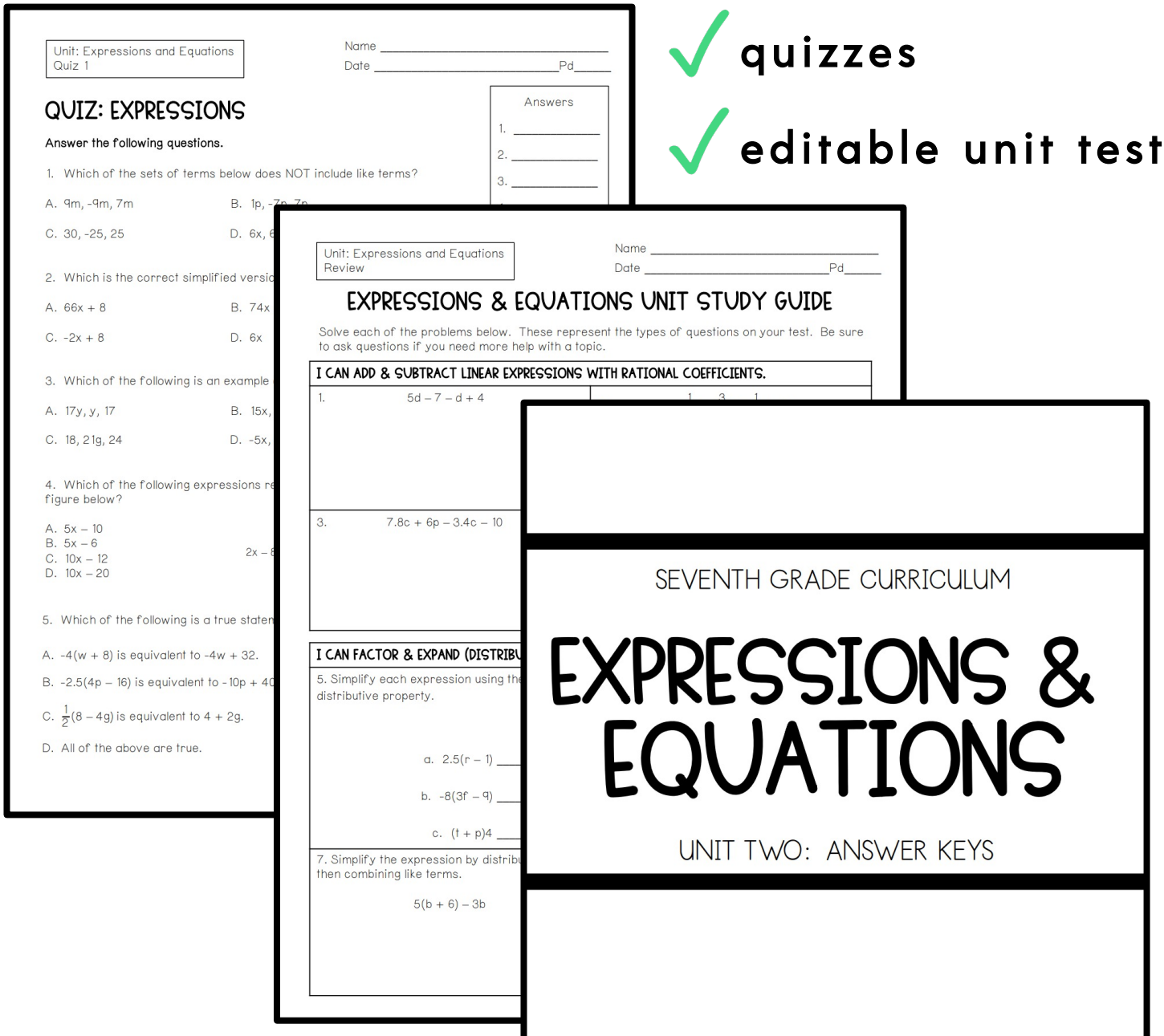
unit study guide + assessments



✓ quizzes

✓ editable unit test

answer keys included

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