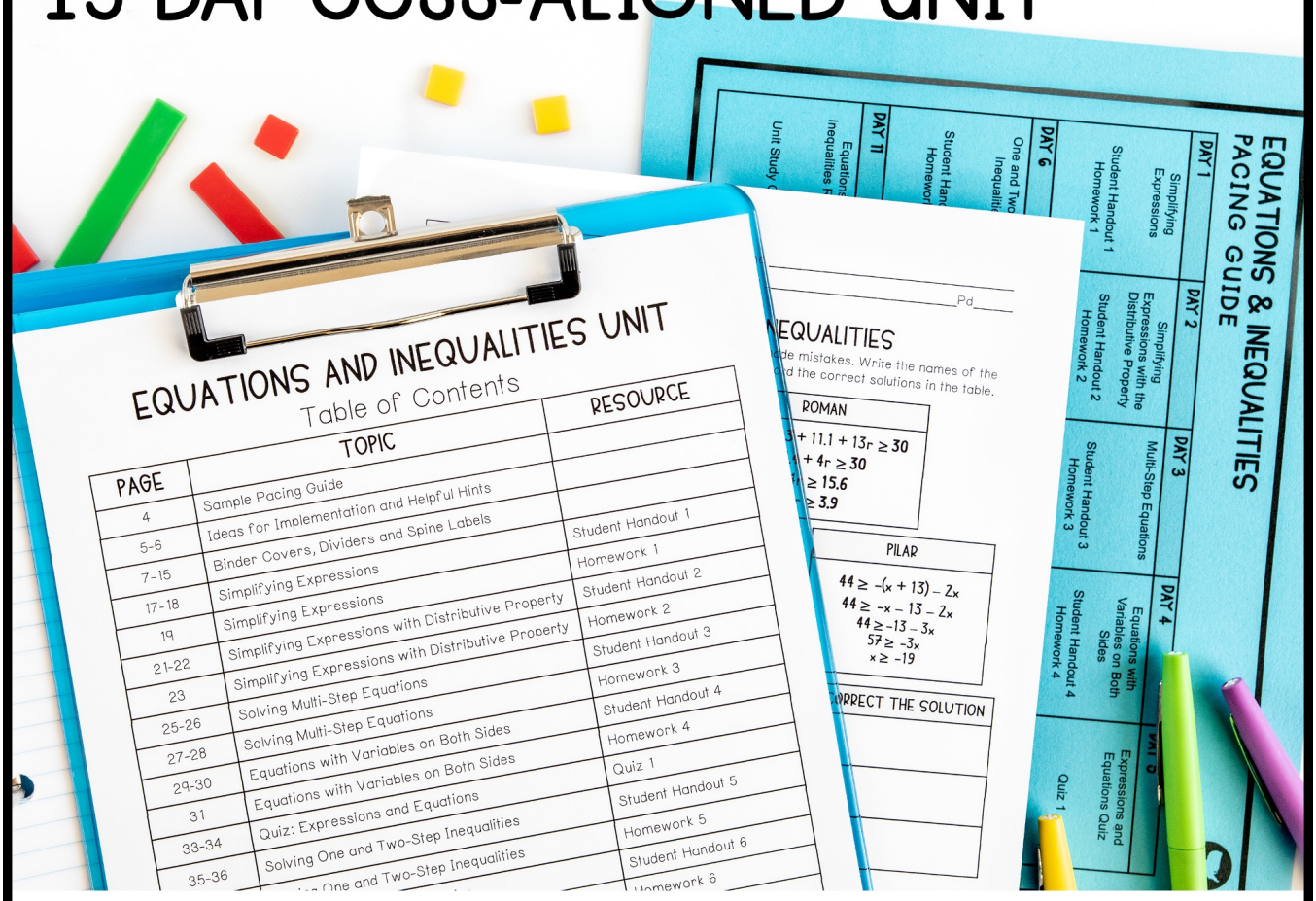
learning focus:

- ✓ solve multi-step linear equations including those with variables on both sides
- ✓ solve literal equations for a specified variable
- ✓ solve multi-step linear inequalities including those with variables on both sides

EQUATIONS & INEQUALITIES UNIT

ALG 1

15 DAY CCSS-ALIGNED UNIT



A MANEUVERING THE MIDDLE ® RESOURCE

EQUATIONS & INEQUALITIES

ALG 1

a 15 day CCSS-aligned unit

CCSS: N.Q.1, A.SSE.1a, A.REI.1, A.REI.3, A.CED.1, A.CED.4

ready-to-go, scaffolded student materials

EQUATIONS AND INEQUALITIES UNIT

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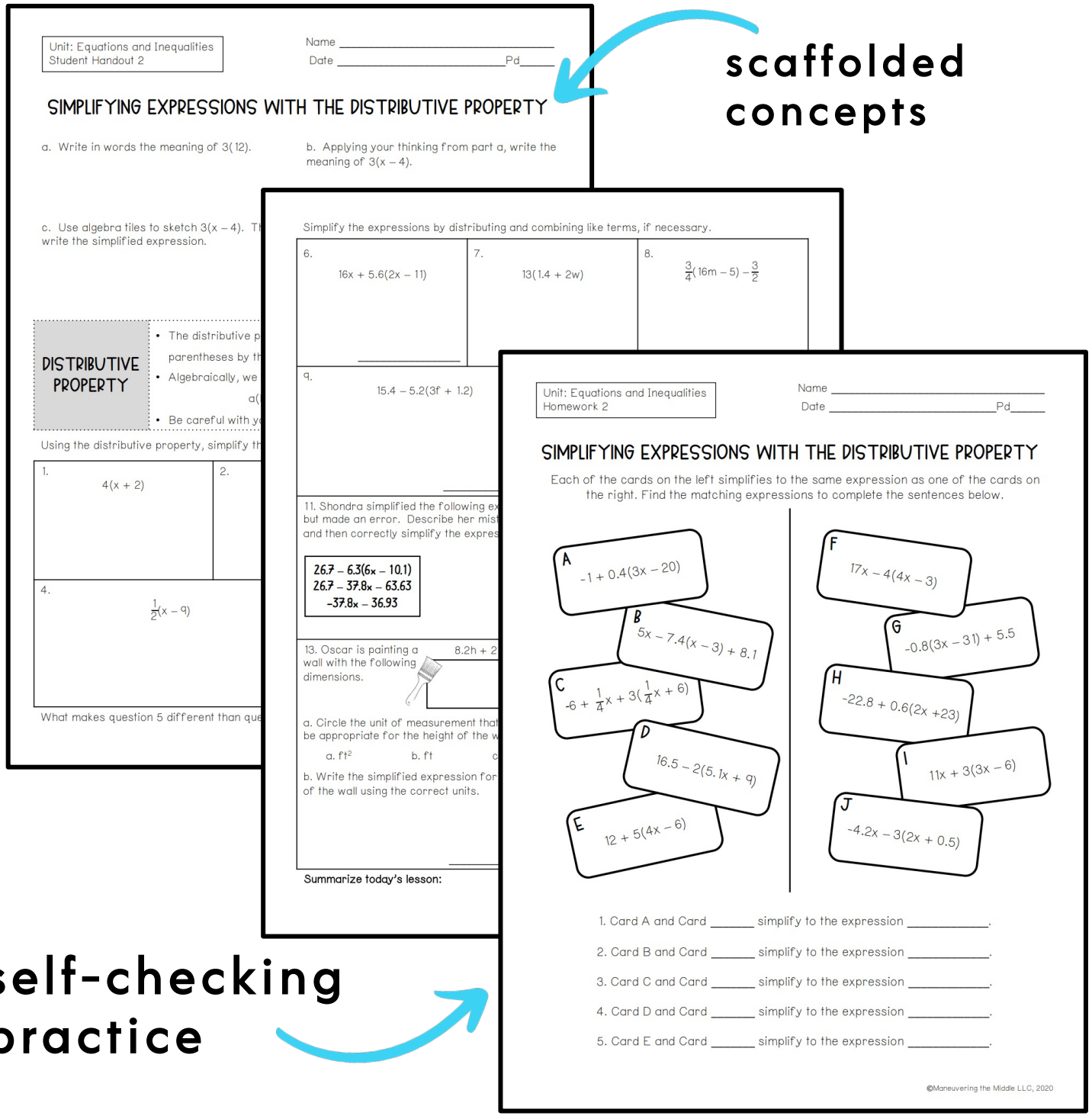
student friendly + real-world application

scaffolded concepts



Unit: Equations and Inequalities
Student Handout 2

Name _____
Date _____ Pd____

SIMPLIFYING EXPRESSIONS WITH THE DISTRIBUTIVE PROPERTY

a. Write in words the meaning of 3(12).

b. Applying your thinking from part a, write the meaning of 3(x – 4).

c. Use algebra tiles to sketch 3(x – 4). Th
write the simplified expression.

DISTRIBUTIVE PROPERTY

- The distributive p
parentheses by th
- Algebraically, we
a(
- Be careful with y

Using the distributive property, simplify th

1. 4(x + 2)

2.

4. $\frac{1}{2}(x - 9)$

What makes question 5 different than que

Simplify the expressions by distributing and combining like terms, if necessary.

6. 16x + 5.6(2x – 11)

7. 13(1.4 + 2w)

8. $\frac{3}{4}(16m - 5) - \frac{3}{2}$

9. 15.4 – 5.2(3f + 1.2)

11. Shondra simplified the following ex
but made an error. Describe her mist
and then correctly simplify the expres

26.7 – 6.3(6x – 10.1)
26.7 – 37.8x – 63.63
–37.8x – 36.93

13. Oscar is painting a wall with the following dimensions. 8.2h + 2

a. Circle the unit of measurement that be appropriate for the height of the w

a. ft² b. ft c

b. Write the simplified expression for of the wall using the correct units.

Summarize today's lesson:

Unit: Equations and Inequalities
Homework 2

Name _____
Date _____ Pd____

SIMPLIFYING EXPRESSIONS WITH THE DISTRIBUTIVE PROPERTY

Each of the cards on the left simplifies to the same expression as one of the cards on the right. Find the matching expressions to complete the sentences below.

A -1 + 0.4(3x – 20)
B 5x – 7.4(x – 3) + 8.1
C $-6 + \frac{1}{4}x + 3(\frac{1}{4}x + 6)$
D 16.5 – 2(5.1x + 9)
E 12 + 5(4x – 6)

F 17x – 4(4x – 3)
G -0.8(3x – 31) + 5.5
H -22.8 + 0.6(2x +23)
I 11x + 3(3x – 6)
J -4.2x – 3(2x + 0.5)

1. Card A and Card _____ simplify to the expression _____.
2. Card B and Card _____ simplify to the expression _____.
3. Card C and Card _____ simplify to the expression _____.
4. Card D and Card _____ simplify to the expression _____.
5. Card E and Card _____ simplify to the expression _____.

self-checking practice

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streamline your planning process with unit overviews

EQUATIONS AND INEQUALITIES
OVERVIEW

CCSS

STANDARDS

N.Q.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.

A.SSE.1a Interpret parts of an expression, such as terms, factors, and coefficients.

A.REI.1 Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.

A.REI.3 Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

A.CED.1 Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, simple rational & exponential functions.

A.CED.4 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations

BIG IDEAS

- Equations are two mathema
  or infinite solutions.
- Equations and inequalities c
- Expressions, equations, and
  problems.

ESSENTIAL QUESTION

- How can expressions, equat
- What determines when an e
- What are the benefits of rep

✓ key vocabulary

✓ vertical alignment

sample pacing calendar

EQUATIONS & INEQUALITIES
PACING GUIDE

CCSS

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
Simplifying Expressions Student Handout 1 Homework 1	Simplifying Expressions with the Distributive Property Student Handout 2 Homework 2	Multi-Step Equations Student Handout 3 Homework 3	Equations with Variables on Both Sides Student Handout 4 Homework 4	Expressions and Equations Quiz Quiz 1
DAY 6	**DAY 7**			
One and Two-Step Inequalities Student Handout 5 Homework 5	Multi-Step Inequalities Student Handout 6 Homework 6			
DAY 11	**DAY 12**			
Equations & Inequalities Review Unit Study Guide	Equations and Inequalities Test Unit Test			

EQUATIONS & INEQUALITIES
OVERVIEW

CCSS

TOPIC	TEACHING TIPS
Simplifying Expressions	• 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 a point for the team. Continue with other students. Keep score if your students can handle it. ☺ • Give each student a lanyard with various terms written (2x, 2y, $2x^2$, etc.) and ask them to find their families. Students will then attempt to group up based on various characteristics, typically by like terms. If they are incorrect, have them keep trying. If they are correct, have them find the rest of their family members. This great idea was shared by a friend and reader, Kayla. • Using colored pencils or shapes to group like terms is helpful for introducing this concept and for students who are struggling. A t-chart can also help organize work. • Watch for students who struggle to remember the coefficient of 1 in front of a lone variable. • Consider using a box method to model the distributive property. Algebra tiles work great, too!
Solving Equations	• Start by displaying a very long and complex equation on the board. Explain that today you are laying the foundation for these types of equations. • Whiteboard races, markers, and graffiti activities are all great ideas to spice up practice. Search www.maneuveringthemiddle.com for the post called "Turn Any Worksheet into an Activity" for more details and ideas. • If you choose to use algebra tiles as a model, then make sure that students understand the concept of zero pairs. You can find more information about algebra tiles here: www.maneuveringthemiddle.com/why-you-should-use-algebra-tiles • Draw a line through the equal sign to separate the two sides of the equation. • Consider using the space labeled "check" on the student handouts to add explanations of the solving process or specific properties used to solve the equation. • Make sure to actually say "2 times x equals 5" which helps remind students what operation is happening between the 2 and the x.

teaching ideas

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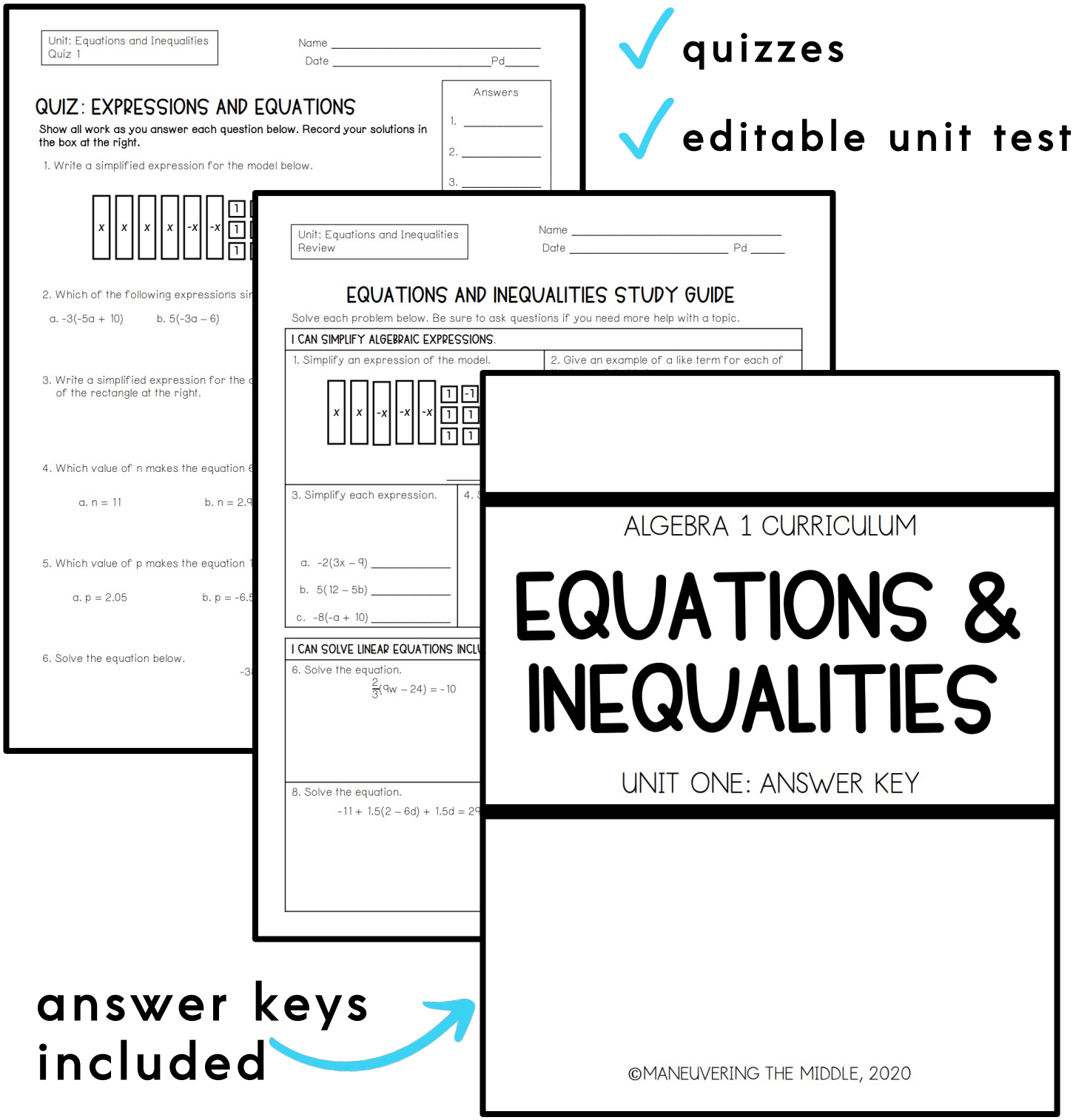
unit study guide + assessments



- ✓ quizzes
- ✓ editable unit test

answer keys included

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