**UNIT 6 · STANDARD 6.EE.4**

# Equivalent Expressions

Lesson 6-6

**Name:** Type your name **Date:** Today's date **Class:** Class period

## Key Vocabulary Level 2 Standard

Picture first, then the word, then a plain-language meaning. Say each word out loud.


*2x + 4 and 2(x + 2): when x = 3, both = 10; when x = 7, both = 18 — always the same*

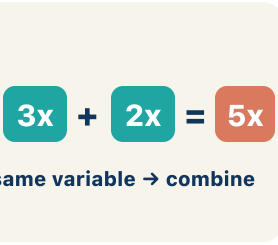
### Equivalent

**Write the definition:**


*3x + 2x + 5 simplifies to 5x + 5 — fewer terms, same value*

### Simplify

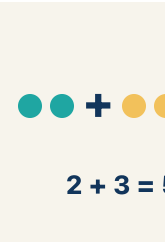
**Write the definition:**




*3x and 7x are like terms (both x); 3x and 3y are NOT (x vs y); 3x and 3x² are NOT (x vs x²)*

### Like Terms

**Write the definition:**




*4n + 3n = 7n — add the coefficients (4 + 3 = 7) and keep the variable (n)*

### Combine

**Write the definition:**


*In 5x + 3, the coefficient of x is 5 — when x = 2, the 5x part equals 10*

## Coefficient

**Write the definition:**

## Guided Notes Level 2 Standard

🎯 **WHAT WE'RE LEARNING TODAY**

**I can show that two expressions are equivalent by simplifying and combining like terms.**

✏️ **Fill in each blank as we go. Use the Word Bank to help you.**

📚 **WORD BANK — FILL EACH BLANK WITH THE BEST WORD**

Equivalent | Simplify | Like Terms | Combine | Coefficient

☝️ *Tap any word to see what it means and a picture.*

1. _____ — Expressions that always have the same value.

2. To write an expression in its shortest equal form is to _____ it.

3. Terms with the same variable raised to the same power, like 4x and 9x, are _____.

4. To add or subtract like terms into one term is to _____ them.

5. A number multiplied by a variable is a _____.

## 🧱 Watch & Try — Worked Examples

*See the notes in action: watch one worked all the way through, then try the next with the same steps.*

**👀 I do — watch**

Follow each step as your teacher solves it.

**Problem:** Which expression is equivalent to 4x + 3x?

A. 7x

B. 12x

C. $7x^2$

D. 43x

**Step 1** 4x + 3x = 7x.

**Step 2** Combine the coefficients: 4 + 3 = 7.

✅ **Answer:** A. 7x

**🧩 Try — put the steps in order**

Drag the cards (or use the ▲▼ buttons) to put the solution steps in the right order, then press **Check**.

Combine the coefficients: 4 + 3 = 7.

4x + 3x = 7x.

**🤝 We do — together**

Solve this one with your class using the same steps.

**Problem:** Which expression is equivalent to 2(m + 5)?

A. 2m + 10

B. 2m + 5

C. m + 10

D. 7m

**Step 1** _____

**Step 2** _____

**Answer:** _____

✏️ **You do — your turn**

Now try one on your own. Show every step.

**Problem:** Which property is shown: $3(x + 7) = 3x + 21$?

A. Distributive

B. Commutative

C. Associative

D. Identity

Show your work:

## Try It

Solve on your own. Check the answer key when you are done.

**1. A track stacks 3x and then one more x. Which expression is equivalent to 3x + x?**

A. 4x

B. $3x^2$

C. 4

D. 3x

Show your work:

**2. Producer B flipped a formula to 5 + 2x. Which expression is equivalent?**

A. 2x + 5

B. 7x

C. 10x

D. 5x + 2

Show your work:

### Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

**A student says 2x + 3 and 5x are equivalent because both equal 5 when x = 1. Is the student correct? Explain why testing one value is not enough to prove equivalence, and find a value of x where they give different results.**

*Sentence starter: The student is ____ because ____. When x = 1: 2(1) + 3 = ____ and 5(1) = ____. But when x = ____: 2(____) + 3 = ____ and 5(____) = ____. To prove equivalence, expressions must be equal for ____ values of x.*

Show your work:

## Reflect — Exit Ticket

**Which expression is equivalent to 6n + 4 + 3n − 1?**

A. 9n + 3

B. 9n + 5

C. 63n

D. 18n + 4

Your answer: