Expressions and Equivalence

Lesson 5 Parts of an Expression

Standards 6.EE.A.2b

Learning target I can name terms, coefficients, factors, and grouped parts.

Materials Algebra tiles or rectangle models, pencils, expression cards.

Lesson Flow 50 Minutes

0–5 Activate prior knowledge. Read the learning target. Ask students what they already know about parts of an expression. Use a quick model or estimate to make their starting ideas visible.

5–17 Teach and model. Addition and subtraction separate terms. A coefficient multiplies a variable; a constant has no variable. A parenthesized sum can be one factor of a larger product, so describe both the inside and the whole expression. Work through the two examples on the attached instruction page. Have students name the first step before showing it.

17–22 Guided practice. Revisit worked Example 2 with its solution covered. Students propose the next step and explain why it is valid; uncover and compare with the worked solution.

22–45 Independent classwork. Assign the attached 10 questions in order. Check items 1–3 for entry-level understanding, 4–6 for connected procedures, 7–8 for representation and explanation, and 9–10 for application or justification. Ask students to use the instruction-page notes area or extra grids for longer work.

45–50 Check understanding. Use classwork question 10 as an exit discussion: In $7(x + 6)$, identify the outer operation, both factors, and the operation inside the grouped factor. Compare the result with the answer key and ask a student to defend the method.

Support and Extension

Support Model item 1 together with the listed tools, then have students attempt item 2 independently. Watch exponents versus multiplication, operation order, and distributing to every term.

Extension Ask students to solve a final item another way, draw a second representation, or create a related problem with a checked answer.

Next step Record which students can explain the target independently. Begin the next teaching session with a brief correction for any recurring error.

Name _____ Date _____

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Learning target I can name terms, coefficients, factors, and grouped parts.

Learn and Discuss

Addition and subtraction separate terms. A coefficient multiplies a variable; a constant has no variable. A parenthesized sum can be one factor of a larger product, so describe both the inside and the whole expression.

Example 1 For 5x + 2y + 6, list terms, coefficients, and the constant.
Solution Terms 5x, 2y, 6; coefficients 5, 2; constant 6. Terms are separated by addition; coefficients multiply variables.
Example 2 In 6(x + 7), identify the outer operation, both factors, and the operation inside the grouped factor.
Solution Outer product; factors 6 and (x + 7); inner sum. The complete sum (x + 7) is one factor multiplied by 6.

Classwork Show Your Work

Complete the 10 problems on the following page. Refer to the examples, draw models, and check your results.

My Notes or Second Method

Lesson 5 Parts of an Expression

Name _____ Show calculations, models, and units.

1. For 7x + 5y + 3, list terms, coefficients, and the constant.

2. For 4x + 4y + 6, list terms, coefficients, and the constant.

3. For (2x + 3) ÷ 2, name the outer operation, the dividend as a single entity, and the divisor. Identify the sum inside the parentheses.

4. For 3x + 4y + 3, list terms, coefficients, and the constant.

5. For (2x + 2) ÷ 5, name the outer operation, the dividend as a single entity, and the divisor. Identify the sum inside the parentheses.

6. For 2x + 6y + 4, list terms, coefficients, and the constant.

7. For (5x + 6) ÷ 5, name the outer operation, the dividend as a single entity, and the divisor. Identify the sum inside the parentheses.

8. In 5(x + 3), identify the outer operation, both factors, and the operation inside the grouped factor.

9. In 3(x + 5), identify the outer operation, both factors, and the operation inside the grouped factor.

10. In 7(x + 6), identify the outer operation, both factors, and the operation inside the grouped factor.

Parts of an Expression

Expressions and Equivalence

1. Terms 7x, 5y, 3; coefficients 7, 5; constant 3
Reasoning Terms are separated by addition; coefficients multiply variables.

2. Terms 4x, 4y, 6; coefficients 4, 4; constant 6
Reasoning Terms are separated by addition; coefficients multiply variables.

3. Outer quotient; dividend (2x + 3); divisor 2; inner sum 2x + 3
Reasoning The grouped sum is one complete quantity being divided. Within it, the terms are 2x and 3.

4. Terms 3x, 4y, 3; coefficients 3, 4; constant 3
Reasoning Terms are separated by addition; coefficients multiply variables.

5. Outer quotient; dividend (2x + 2); divisor 5; inner sum 2x + 2
Reasoning The grouped sum is one complete quantity being divided. Within it, the terms are 2x and 2.

6. Terms 2x, 6y, 4; coefficients 2, 6; constant 4
Reasoning Terms are separated by addition; coefficients multiply variables.

7. Outer quotient; dividend (5x + 6); divisor 5; inner sum 5x + 6
Reasoning The grouped sum is one complete quantity being divided. Within it, the terms are 5x and 6.

8. Outer product; factors 5 and (x + 3); inner sum
Reasoning The complete sum (x + 3) is one factor multiplied by 5.

9. Outer product; factors 3 and (x + 5); inner sum
Reasoning The complete sum (x + 5) is one factor multiplied by 3.

10. Outer product; factors 7 and (x + 6); inner sum
Reasoning The complete sum (x + 6) is one factor multiplied by 7.