



PRINTABLES
PREMIUM EDUCATIONAL RESOURCES

GRADE 7 • END-OF-YEAR SPIRAL REVIEW

Expressions & Equations Review Packet

50 Mixed Problems + 2 Mixed-Domain Quizzes

A Deep-Dive Mega Unit on the 7.EE Domain

7.EE.A.1

Apply properties to
expand/factor linear
expressions

7.EE.A.2

Rewrite expressions in
different forms

7.EE.B.3

Solve multi-step real-life
problems

7.EE.B.4a

Solve word problems with
equations

7.EE.B.4b

Solve word problems with
inequalities

WHAT'S INSIDE

5 color-coded strands • 10 problems each • 2 full mixed-domain quizzes • Complete worked solutions • CCSS alignment chart • Student "I Can" tracking sheet • Vocabulary glossary • Teacher pacing guide (3 implementation options)

"Mathematics is the music of reason." — James Joseph Sylvester

Component	Pages	Description
Strand 4 — Two-Step Inequalities	2	10 word problems on 7.EE.B.4b: writing and solving two-step inequalities.
Strand 5 — Mixed-Domain Challenge	2	10 multi-step challenge problems drawing on all four standards.
Post-Assessment Quiz (Quiz 2)	1	10 mixed-domain questions to measure growth after instruction.
Complete Answer Key & Worked Solutions	8+	Every problem and quiz with full step-by-step solutions and explanations.
CCSS Alignment Chart	1	Map of every problem to its exact CCSS standard and "I Can" statement.
Student "I Can" Tracking Sheet	1	Self-monitoring tool with confidence ratings (1–4) for each standard.
Vocabulary Glossary	2	20+ key EE-domain terms with student-friendly definitions and examples.
Teacher Pacing Guide	2	Three implementation options: 5-day spiral, 1-day crash review, weekly homework.

Implementation Tips for Teachers

- **Pre-assess first.** Give Quiz 1 cold, before any review instruction. Use the results to group students and decide which strands need the most attention.
- **Use the color coding.** Project a strand's banner before students begin. The visual cue helps students connect the practice to the standard and to their own "I Can" goals.
- **Encourage self-monitoring.** Have students update their tracking sheet after each strand. The 1–4 scale builds metacognition and helps you see at a glance who needs support.
- **Pair students for the challenge strand.** Strand 5 problems are deliberately multi-step. Collaborative problem-solving builds mathematical discourse and perseverance.
- **Use the worked solutions for reteaching.** The answer key is written as a teaching script. Project the steps for any problem the class struggled with and have students explain each line.
- **Finish with Quiz 2 as a celebration of growth.** Have students compare Quiz 1 and Quiz 2 scores and reflect on which standards showed the biggest gains.

CCSS Alignment Chart

Every problem in this packet is mapped to a specific Common Core State Standard within the 7th-grade Expressions & Equations domain. The chart below allows teachers to quickly identify which standard each problem addresses, making it easy to target specific skills during reteaching or enrichment. The "I Can" statement column translates the standard into student-friendly language that mirrors the language used on the student tracking sheet.

Standard	Domain	Student-Friendly "I Can" Statement
7.EE.A.1	Equivalent Expressions	I can apply properties of operations to expand and factor linear expressions with rational coefficients.
7.EE.A.2	Equivalent Expressions	I can rewrite an expression in different forms to shed light on the problem and interpret the relationship between quantities.
7.EE.B.3	Multi-Step Real-Life	I can solve multi-step real-life and mathematical problems posed with positive and negative rational numbers and assess the reasonableness of answers.
7.EE.B.4a	Equations (Word Problems)	I can write and solve word problems that lead to two-step equations of the form $px + q = r$ and $p(x + q) = r$.
7.EE.B.4b	Inequalities (Word Problems)	I can write and solve word problems that lead to two-step inequalities and graph their solution sets on a number line.

Problem-by-Problem Alignment

#	Section	Standard	Skill Focus
Q1	Quiz 1	7.EE.A.1	Apply distributive property to combine like terms
Q2	Quiz 1	7.EE.A.1	Factor out the greatest common factor (GCF)
Q3	Quiz 1	7.EE.B.4a	Solve a two-step equation
Q4	Quiz 1	7.EE.B.4a	Solve a two-step equation with parentheses
Q5	Quiz 1	7.EE.B.4b	Solve and graph a one-step inequality
Q6	Quiz 1	7.EE.B.3	Multi-step money word problem
Q7	Quiz 1	7.EE.B.3	Find original price from discounted price (percent)
Q8	Quiz 1	7.EE.B.4b	Solve a two-step inequality
Q9	Quiz 1	7.EE.B.4a	Translate a verbal phrase into an equation
Q10	Quiz 1	7.EE.A.1	Verify equivalence of two expressions
S1.1	Strand 1	7.EE.A.1	Distribute and combine like terms
S1.2	Strand 1	7.EE.A.1	Factor a linear binomial by GCF
S1.3	Strand 1	7.EE.A.1	Distribute a negative coefficient
S1.4	Strand 1	7.EE.A.1	Combine like terms (three variables)
S1.5	Strand 1	7.EE.A.1	Distribute twice and simplify

Student "I Can" Tracking Sheet

Directions for Students: Before starting the packet, rate how confident you feel about each skill on a scale of 1 to 4. After completing each strand, rate yourself again. Use the space below each row to write a quick note about what you learned or what you still need to practice. Be honest — this sheet is for YOU.

1 — I am just starting to learn this.	2 — I can do this with help.	3 — I can do this on my own.	4 — I can teach this to a friend.
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Standard	"I Can" Statement	Before	After	Notes / Evidence
7.EE.A.1 Strand 1	I can apply the distributive property to expand linear expressions, factor out the GCF, and combine like terms.			
7.EE.A.2 Strand 1	I can rewrite an expression in different forms (factored, expanded, simplified) to show how quantities relate to each other.			
7.EE.B.3 Strand 2	I can solve multi-step real-life problems with positive and negative rational numbers, and check whether my answers make sense.			
7.EE.B.4a Strand 3	I can write and solve two-step equations ($px + q = r$ and $p(x + q) = r$) that come from real-world word problems.			
7.EE.B.4b Strand 4	I can write and solve two-step inequalities from word problems and graph the solution set on a number line.			
7.EE (All) Strand 5	I can combine multiple EE skills (expressions, equations, inequalities, and real-life reasoning) to solve complex multi-step problems.			

My Reflection

Which strand did I feel most confident in? Why?	Write 2–3 sentences.
Which strand was the hardest for me? What will I do to improve?	Write 2–3 sentences.

Vocabulary Glossary — Expressions & Equations

A strong mathematical vocabulary is the foundation of algebraic reasoning. The glossary below defines every key term used in this packet in student-friendly language. Each definition includes a concrete example so that students can see the term in action. Print this page double-sided and have students keep it in their math binder for quick reference throughout the unit.

Algebraic Expression

A mathematical phrase that contains numbers, variables, and operations but no equals sign. Example: $3x + 7$ is an algebraic expression, while $3x + 7 = 22$ is an equation.

Variable

A letter or symbol that stands for an unknown number. Example: In $5x - 4$, the letter x is the variable.

Coefficient

The numerical factor of a term that contains a variable. Example: In $7x$, the number 7 is the coefficient.

Constant

A term with no variable; its value does not change. Example: In $4x + 9$, the number 9 is the constant.

Term

A single number, a variable, or the product of numbers and variables, separated from other terms by $+$ or $-$ signs. Example: $3x^2 - 5x + 8$ has three terms.

Like Terms

Terms that have the same variable(s) raised to the same power(s). Like terms can be combined. Example: $4x$ and $7x$ are like terms; $3x$ and $3y$ are not.

Distributive Property

A property stating that multiplying a sum by a number is the same as multiplying each addend by the number and then adding. Formula: $a(b + c) = ab + ac$. Example: $3(x + 4) = 3x + 12$.

Factoring

Rewriting an expression as a product of its factors. The reverse of distributing. Example: $6x + 9 = 3(2x + 3)$; we factored out the GCF of 3 .

Greatest Common Factor (GCF)

The largest factor that two or more terms share. Used to factor expressions. Example: The GCF of $12x$ and 18 is 6 , so $12x + 18 = 6(2x + 3)$.

Equivalent Expressions

Two expressions that have the same value for every value of the variable. Example: $2(x + 5)$ and $2x + 10$ are equivalent.

Simplify

To rewrite an expression in the fewest terms possible. Example: $3x + 4 + 2x - 1$ simplifies to $5x + 3$.

Equation

A mathematical sentence that uses an equals sign to show that two expressions are equal. Example: $2x + 3 = 11$ is an equation.

Solution of an Equation

The value of the variable that makes the equation true. Example: The solution of $2x + 3 = 11$ is $x = 4$ because $2(4) + 3 = 11$.

Inverse Operations

Operations that "undo" each other. Addition and subtraction are inverse operations; multiplication and division are inverse operations. Used to isolate a variable. Example: To solve $x + 5 = 12$, subtract 5 from both sides.

QUIZ 1 • PRE-ASSESSMENT

Mixed-Domain Diagnostic

10 mixed-domain questions | CCSS 7.EE.A.1–B.4b | Time:

20–25 minutes

Directions: Solve each problem below. Show your work in the space provided. For inequalities (Q5 in Quiz 1; Q5, Q8, Q9 in Quiz 2), graph the solution set on the number line provided. This quiz is designed to measure what you already know about Expressions & Equations — do your best and do not worry if you cannot solve every problem yet.

Name: _____

Date: _____

Score: _____ / 10

Q1 Simplify: $4(x - 2) + 3x$

Q2 Factor out the GCF: $18x + 24$

Q3 Solve for x : $2x + 5 = 17$

Q4 Solve for x : $3(x - 4) = 15$

Q5 Solve and graph on a number line: $x + 5 > 12$



Q6 A taxi charges \$3 plus \$2 per mile. How many miles can you ride with \$15?

1

Equivalent Expressions

CCSS 7.EE.A.1 & 7.EE.A.2

I can apply properties of operations to expand, factor, and rewrite linear expressions with rational coefficients.

In this strand, you will practice the foundational algebraic skills of expanding, factoring, and combining linear expressions. These skills are the building blocks of every equation and inequality you will solve — mastering them means you can manipulate expressions fluently and recognize when two forms represent the same relationship.

S1.1 Simplify the expression: $3(2x + 4) - 2(x - 1)$ *Hint: Distribute, then combine like terms.***S1.2** Factor out the greatest common factor (GCF): $12x + 18$ *Hint: Find the largest factor shared by both terms.***S1.3** Expand and simplify: $-2(3x - 5) + 7$ *Hint: Distribute carefully, especially the negative sign.***S1.4** Combine like terms: $5x - 3y + 2x + 7y - 4$ *Hint: Group terms with the same variable together.***S1.5** Apply the distributive property and simplify: $4(2x + 3) - 2(3x - 1)$ *Hint: Distribute to both parentheses, then combine like terms.***S1.6** Factor out the GCF: $15x^2y + 25xy^2$ *Hint: Find the GCF of the coefficients AND the variable parts.***S1.7** Rewrite as a single simplified expression: $7(x + 2) + 3(x - 4)$ *Hint: Distribute to both groups, then combine.*

Answer Key — Strand 1: Equivalent Expressions

Every problem below is shown with full step-by-step worked solutions. Use this section to check your work, identify where you went wrong, and study the reasoning behind each step. Teachers: project these solutions for whole-class reteaching or use them for one-on-one intervention.

S1.1 $3(2x + 4) - 2(x - 1)$

Step 1 (Distribute 3): $3 \cdot 2x + 3 \cdot 4 = 6x + 12$

Step 2 (Distribute -2): $-2 \cdot x + (-2) \cdot (-1) = -2x + 2$

Step 3 (Combine like terms): $(6x - 2x) + (12 + 2) = 4x + 14$

Solution: $4x + 14$

S1.2 **Factor:** $12x + 18$

Step 1 (Find GCF): Factors of 12: 1, 2, 3, 4, 6, 12. Factors of 18: 1, 2, 3, 6, 9, 18. $\text{GCF}(12, 18) = 6$.

Step 2 (Rewrite each term): $12x = 6 \cdot 2x$; $18 = 6 \cdot 3$

Step 3 (Factor out 6): $6(2x) + 6(3) = 6(2x + 3)$

Step 4 (Check by distributing): $6(2x + 3) = 12x + 18$ ✓

Solution: $6(2x + 3)$

S1.3 $-2(3x - 5) + 7$

Step 1 (Distribute -2): $-2 \cdot 3x + (-2) \cdot (-5) = -6x + 10$

Step 2 (Add 7): $-6x + 10 + 7$

Step 3 (Combine constants): $-6x + 17$

Solution: $-6x + 17$

S1.4 $5x - 3y + 2x + 7y - 4$

Step 1 (Group like terms): $(5x + 2x) + (-3y + 7y) + (-4)$

Step 2 (Combine x-terms): $5x + 2x = 7x$

Step 3 (Combine y-terms): $-3y + 7y = 4y$

Step 4 (Bring down constant): -4

Solution: $7x + 4y - 4$

S1.5 $4(2x + 3) - 2(3x - 1)$

Step 1 (Distribute 4): $8x + 12$

Step 2 (Distribute -2): $-6x + 2$

Step 3 (Combine): $(8x - 6x) + (12 + 2) = 2x + 14$

Solution: $2x + 14$

Teacher Pacing Guide

This mega unit is designed to flex to your schedule. Below are three ready-to-use implementation options, ranging from a focused 1-day crash review to a comprehensive 5-day spiral, plus a weekly homework plan that stretches the packet across four weeks. Choose the option that best fits your calendar, your students' needs, and your instructional goals. Each option integrates the pre-assessment, practice strands, and post-assessment as a coherent learning sequence.

At-a-Glance: Three Pacing Options

Option	Time	Best For	Pre-Assessment	Post-Assessment
A. 5-Day Spiral	5 class periods (45–50 min)	End-of-year review after teaching the EE domain	Day 1	Day 5
B. 1-Day Crash	1 class period (60–90 min)	Quick refresher before a unit test or state assessment	Optional (skip)	End of period
C. Weekly Homework	4 weeks (home-based)	Spiraled practice over a month; ideal for tutoring or RTI	Week 1, Day 1	Week 4, Day 5

Option A — 5-Day Spiral Review

Recommended for: A focused week of end-of-year review after the EE domain has been taught. This pacing allows students to engage deeply with one or two strands per day, with time for whole-class discussion and small-group intervention.

Day	Focus	Activities & Assignment	Time
Day 1	Pre-Assessment + Strand 1	Give Quiz 1 cold (15 min). Review answers as a class. Introduce Strand 1 (Equivalent Expressions, 7.EE.A.1–A.2). Students work through problems S1.1–S1.10 with a partner. Project the worked solutions for any problems that gave the class trouble. Exit ticket: students rate themselves on the "I Can" tracking sheet.	45–50 min
Day 2	Strand 2 & Strand 3	Warm-up: 2 problems from Strand 1 (reteach if needed). Mini-lesson on translating word problems into equations/inequalities (10 min). Students complete Strand 2 (S2.1–S2.10) and Strand 3 (S3.1–S3.10). Pair-share after every 5 problems. Exit ticket: one Strand 3 problem solved independently.	45–50 min
Day 3	Strand 4	Warm-up: review the inequality vs. equation distinction (5 min). Mini-lesson on the "Flip the inequality" rule when multiplying or dividing by a negative (10 min). Students complete Strand 4 (S4.1–S4.10). For each problem, students graph the solution set on a number line. Exit ticket: one two-step inequality solved and graphed independently.	45–50 min

UM PRINTABLES • GRADE 7 MATH

Expressions & Equations

Review Packet • End-of-Year Spiral Review

52

TOTAL PAGES

70

TOTAL QUESTIONS

5

COLOR-CODED STRANDS

01 PRE-ASSESSMENT QUIZ

10 mixed-domain questions designed to diagnose starting mastery.

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02 FIVE PRACTICE STRANDS

50 problems total • 10 per strand • equivalent expressions, multi-step real-life problems, equations, inequalities, and

pp. 15–24

03 POST-ASSESSMENT QUIZ

10 mixed-domain questions to measure progress after the practice strands.

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04 WORKED ANSWER KEY

Step-by-step solutions for the 50 strand problems and both 10-question quizzes.

pp. 27–47

05 CCSS ALIGNMENT

Standards overview plus problem-by-problem alignment to the listed Grade 7 EE standards.

pp. 6–8

06 STUDENT TRACKING + REFLECTION

1–4 confidence ratings, "I Can" statements, reflection prompts, and quiz-score comparison.

pp. 9–10

07 VOCABULARY GLOSSARY

Student-friendly Expressions & Equations vocabulary with examples.

pp. 11–12

08 TEACHER PACING + DIFFERENTIATION

5-day spiral, 1-day crash review, 4-week homework plan, and differentiation tips.

pp. 48–50

09 CLOSING / FEEDBACK PAGES

UM Printables feedback request and closing resource information.

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CCSS 7.EE.A.1 • 7.EE.A.2 • 7.EE.B.3 • 7.EE.B.4a • 7.EE.B.4b