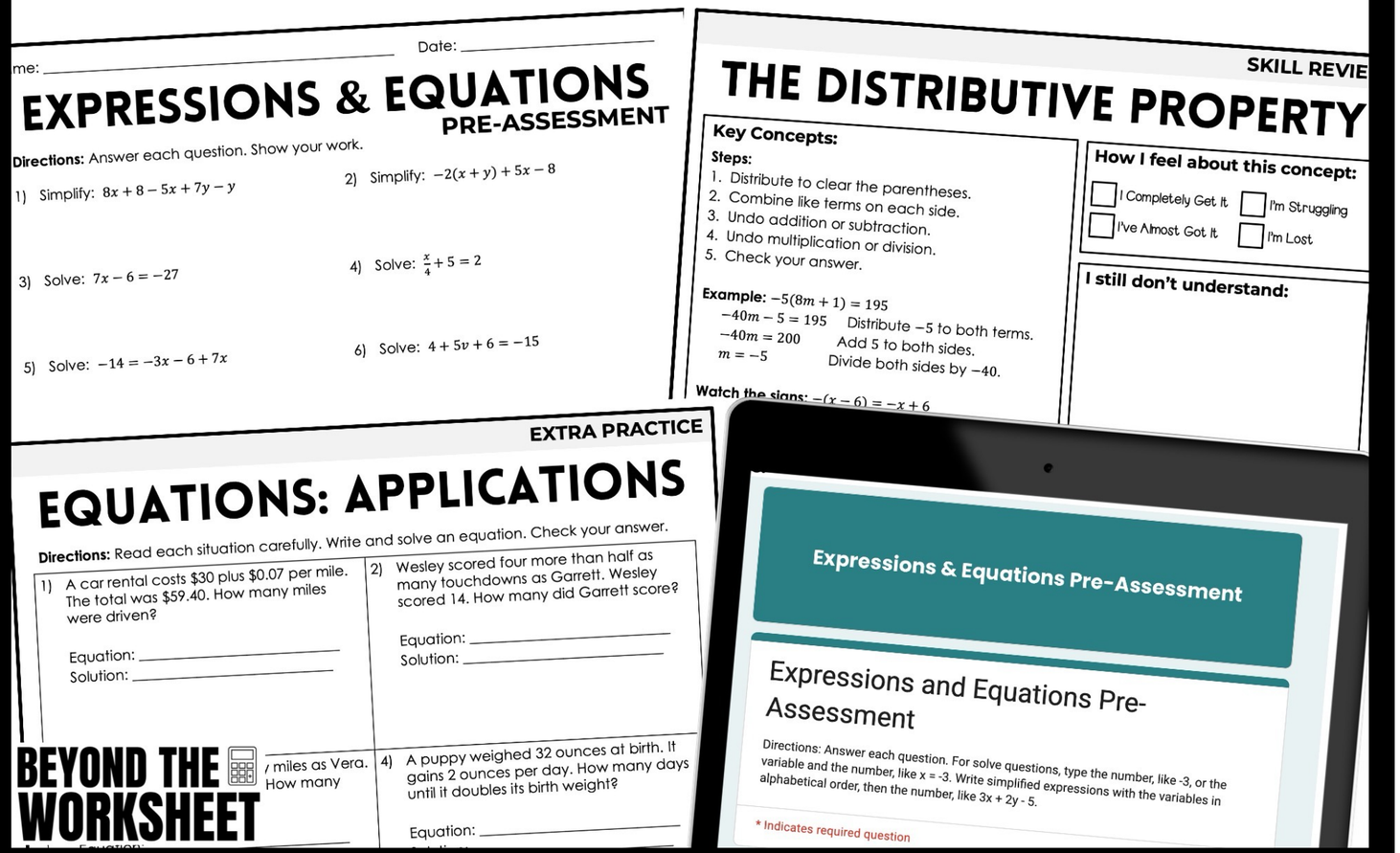
8TH GRADE MATH INTERVENTION UNIT

EXPRESSIONS & EQUATIONS



PRE + POST ASSESSMENTS • 7 TARGETED SKILLS • ERROR ANALYSIS

This 8th grade math intervention unit gives you a pre-assessment that pinpoints each student's gaps, and short, focused pages to reteach only the skills they missed. It covers simplifying expressions, the distributive property, and solving equations.

learn more!

WHAT'S INCLUDED:

- **Intervention Planning Sheets**
  Three planning formats are included to help organize intervention groups, targeted skills, and instructional plans.
- **Pre and Post Assessments**
  Use the pre-assessment to identify individual skill gaps and the post-assessment to measure growth after intervention. In print and Google Forms.
- **Skill Review**
  A concise review of the skill with key concepts, guided practice, and a student self-assessment.
- **Extra Practice**
  Additional problems for independent, pairs or small group practice.
- **Error Analysis**
  Students analyze incorrect work, identify the mistake, and determine the correct solution.
- **Progress Tracking**
  Record student performance across the Skill Review, Extra Practice, and Error Analysis pages.
- **Editable Version**
  Adjust wording and problems to perfectly meet your standards or student needs.

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PRE & POST ASSESSMENTS

Date: ______________

ESSIONS & EQUATIONS
PRE-ASSESSMENT

each question. Show your work.

$- 5x + 7y - y$

2) Simplify: $-2(x + y) + 5x - 8$

$= -27$

4) Solve: $\frac{x}{4} + 5 = 2$

$-3x - 6 + 7x$

6) Solve: $4 + 5v + 6 = -15$

$x + 1) = 30$

8) Solve: $-4(6m + 1) = 92$

$= 5x + 18$

10) Solve: $3(4b + 2) = 2b - 14$

olutions does $4x + 3 = 4x - 3$

12) Circle **all** equations with infinitely many solutions.

$2(x + 3) = 2x + 6$ $3x + 1 = 3x$

$5x - 5 = 5(x - 1)$ $x = 2x$

udio charges \$125 per month
ecital fee. A family paid \$825.
months did the student take

14) Ellie has twice as many stickers as Gavin. Together they have 45 stickers. How many stickers does each child have?

Name: ______________________________ Date: ______________

EXPRESSIONS & EQUATIONS
POST-ASSESSMENT

Directions: Answer each question. Show your work.

1) Simplify: $6a - 3 + 2b - a + 5b$

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

3) Solve: $5x + 4 = -11$

4) Solve: $\frac{x}{3} - 2 = 4$

5) Solve: $20 = 3x - 4 + 5x$

6) Solve: $9 - 2v + v = 13$

7) Solve: $6 + 3(x - 2) = 21$

8) Solve: $-4(3m - 2) = 56$

) Solve: $7x + 5 = 3x - 15$

10) Solve: $3(2b - 4) = b + 8$

) How many solutions does $6x - 1 = 6x + 1$ have?

12) Circle **all** equations with no solution.

$3(x + 1) = 3x + 1$ $2x + 4 = 2(x + 2)$

$5x = 5x + 5$ $x + 1 = 1$

) Aaron ran some miles at 8 minutes per mile. He also walked one mile in 12 minutes. He spent 44 minutes in all. How many miles did he run?

14) Sam has three times as many cards as Lee. Together they have 64 cards. How many cards does each person have?

PRE AND POST ASSESS

ESSIONS & EQUAT

	Pre-Assessment	Post-Assessment	N

SKILLS REVIEW PAGES

SKILL REVIEW

LIFYING EXPRESSIONS

ame variable raised to the same
e like terms. $4x$ and $4x^2$ are not.
dd or subtract the coefficients. The
me.
$-3-2x+5=5x+8$
multiply the outside number by **every**
ntheses.
ac $\quad -2(x-5)=-2x+10$

r any parentheses.
on as adding the opposite.
rms.
$x+2=3x-12-5x+2=-2x-10$

How I feel about this concept:

- ☐ I Completely Get It
- ☐ I've Almost Got It
- ☐ I'm Struggling
- ☐ I'm Lost

I still don't understand:

$+3-2x+5$

2) Simplify: $4(2y-3)$

$2(x+6)$

4) Circle **all** terms that are like terms with $3x$.

$5x$ $\quad 3y$ $\quad -x$ $\quad x^2$ $\quad 3$ $\quad 0.5x$

$(x-4)-5x+2$

6) Which expression is equivalent to

SKILL REVIEW

SOLVING TWO-STEP EQUATIONS

Key Concepts:

Goal: get the variable alone on one side of the equal sign.
Inverse operations undo each other.

Operation	Undo it with…
Addition	Subtraction
Subtraction	Addition
Multiplication	Division
Division	Multiplication

Steps:
1. Undo addition or subtraction first.
2. Undo multiplication or division.
3. Check by substituting your answer.

Example: $3x-5=16 \quad 3x=21 \quad x=7$
Check: $3(7)-5=16$

How I feel about this concept:

- ☐ I Completely Get It
- ☐ I've Almost Got It
- ☐ I'm Struggling
- ☐ I'm Lost

I still don't understand:

Practice:

1) $6x-3=21$

2) $94=9n-5$

3) $\frac{a}{8}+2=4$

4) $\frac{y-6}{11}=-2$

5) $0.4x+1.2=3.6$

6) Which value is a solution of $5-2x=13$?

IBINING LIKE TE

…s on each side of the equation.
…ubtraction.
…n or division.
…r in the original equation.

$=15$
…bine $4x$ and $2x$.
… to both sides.
…both sides by 6.

…ont of each term.
…re 7, $-b$, and -8.

How I feel abou

- ☐ I Completely Get It
- ☐ I've Almost Got It

I still don't unde

2) $-11=-6x-7x+2$

4) $3+7v+8=-17$

6) What is the

EXTRA PRACTICE

EXTRA PRACTICE

ISTRIBUTIVE PROPERTY

n equation. Show your work. Check your answer.

	2) $-5(4-5x)=130$	3) $-5(-4a-5)=105$
$+b$	5) $-2-5(2x+4)=-72$	6) $5x-2(x-1)=8$

each problem carefully.

	8) $0.2(10x+5)=7$
$)=20$ two ways: distribute first, irst. Which way is faster?	10) A rectangle's length is 3 more than its width w. The perimeter is 26. Use $2(w+3)+2w=26$ to find the width.

EXTRA PRACTICE

VARIABLES ON BOTH SIDES

For #1 – 6: Solve each equation. Show your work. Check your answer.

1) $3n-5n=6n-24$	2) $8a+6=1+7a+6a$	3) $14-4-7p-3=1-8p$
4) $1+m-8m=-5m+7$	5) $4x-10=-6(-3+4x)$	6) $-28-7m=7(6-6m)$

or #7 – 10: Read each problem carefully.

) $\frac{1}{2}x+4=\frac{3}{4}x+1$	8) $1.2y-3=0.8y+5$
Gym A charges \$30 to join plus \$5 per visit. Gym B charges \$8 per visit. After how many visits do they cost the same?	10) Fill in the blank so the solution is $x=3$. $4x+$ _____ $=2x+10$

E

BER OF SOLUT

her each equation has one solution, no solution, or infini solve it.

	2) $5x+9=3x+1$ one / none / infinite
$+6$	4) $0.5(4x+6)=2x+3$ one / none / infinite

h problem carefully.

he equation has infinitely $)=3x+12$	6) Fill in the blank so the equ solution. (_____)$x+5=4x$
hat has no solution.	8) Kai solved an equation and says the equation has no sol correct? Explain.
n to its number of	10) Plan A costs \$20 plus \$0.05 p Plan B costs \$25 plus \$0.05 per

ERROR ANALYSIS

TIONS: APPLICATIONS

the error. Then explain it and solve the problem correctly.

ke for a $19 fee plus $3 per $43. How many hours did e?

:

$19x = 43$

t 2.1 hours

2) Jessie bought milk for $5 and four loaves of bread. She spent $13. How much was each loaf?

Student answer:

Equation: $5 + 4b = 13$

Solution: $4.50 each

tickets. He gave four tickets and has 8 left. How many kets?

er:

$- x = 8$

riends

4) Ethan bought two park tickets and a $35 parking pass. He spent $125. How much was each ticket?

Student answer:

Equation: $2 + 35x = 125$

Solution: about $3.51 each

ree times as many stamps as her they have 48. How many ave?

wer:

$3x = 48$

6) A pool has 500 gallons. It drains 25 gallons per minute. When will 200 gallons be left?

Student answer:

Equation: $500 + 25m = 200$

Solution: $m = -12$ minutes

COMBINING LIKE TERMS

Directions: Identify the error. Then explain it and solve the problem correctly.

1) $-3x - 1 - 8x = -23$

Student answer: $11x - 1 = -23$

$11x = -22$

$x = -2$

2) $-12 = -8x - 4x$

Student answer: $-12 = -4x$

$3 = x$

) $-4 = 1 + 6v + 7$

Student answer: $-4 = 14v$

$-\frac{2}{7} = v$

4) $5 - 3k - 2k = -10$

Student answer: $5 - k = -10$

$-k = -15$

$k = 15$

$2x + 5 + 3x = 30$

Student answer: $5x + 5 = 30$

$5x = 35$

$x = 7$

6) $9 = 4y - y$

Student answer: $9 = 4y$

$\frac{9}{4} = y$

E

NG TWO-STEP EQU

the error. Then explain it and solve the problem correctly

$\frac{m}{2} = -2$

$m = -1$

2) $2n + 1 = -27$

Student answer: $2n = -2$

$n = 14$

$4 = 5k$

$.8 = k$

4) $-4 = \frac{-9+b}{7}$

Student answer: $-11 = -9$

$-2 = b$

5

6) $0.5x + 2 = 6$

Student answer: $0.5x = 4$

$x = 2$

TEACHER PAGES & ANSWER KEY

EXTRA PRACTICE

LIFYING EXPRESSIONS

each expression. Show your work.

	2) $-3x + 7y - x - 2y$ $-4x + 5y$	3) $5(m + 2) - 3m$ $2m + 10$
2	5) $\frac{1}{2}(8x - 6) + 2$ $4x - 1$	6) $0.5(4n + 10) - n$ $n + 5$

each problem carefully.

ressions equivalent to $4x - 8$.

$2(2x - 4)$ $4(x - 8)$

$(2 - x)$ $2x - 8 + 2x$

8) Fill in the blank.

$3(x + \underline{5}) = 3x + 15$

etimes, or never?

$x + b) = ax + b$

sometimes never

ly when $a = 1$ or $b = 0$.

10) Which one doesn't belong? Explain.

$6x - 3$ $3(2x - 1)$

$2(3x - 1) - 1$ $6(x - 3)$

$6(x - 3)$.
It equals $6x - 18$.
The others equal $6x - 3$.

e is $x + 4$ units long and $2x$

12) True or false: $-(x - 5) = -x - 5$
Explain.

8TH GRADE MATH INTERVENTION PROGRAM

Resource: 8th Grade Math Intervention Unit 2 – Expressions and Equations

Suggested Class Time: 30 minutes at a time as needed

The Big Idea

- This unit provides **targeted intervention and additional practice** with simplifying expressions and solving linear equations, including equations with variables on both sides and equations with no solution or infinitely many solutions. Each skill review also revisits the earlier skills students need, such as integer operations, inverse operations, and the distributive property.
- Use the pre-assessment to identify specific skill gaps, then assign only the skill pages students need. The materials work best in **teacher-led small groups**, but the Extra Practice and Error Analysis pages can also be used for independent practice, partner work, reteaching, or progress monitoring.

Each skill comes with:

- **Skill Review**
  A concise review of the skill with key concepts, guided practice, and a student self-assessment.
- **Extra Practice**
  Additional problems students can complete independently, with a partner, or as continued small-group practice.
- **Error Analysis**
  Students analyze incorrect work, identify the mistake, and determine the correct solution. This provides an opportunity to uncover misconceptions that may not be obvious from a correct/incorrect answer alone.
- **Progress Tracking**
  Record student performance across the Skill Review, Extra Practice, and Error Analysis pages to monitor growth and determine next steps.

lso included:

- **Pre- & Post-Assessments**
  Use the pre-assessment to identify individual skill gaps and the post-assessment to measure growth after intervention. Print and Google Forms versions are included.
- **Intervention Planning Sheets**
  Three planning formats are included to help organize intervention groups, targeted skills, and instructional plans. These can also be used to communicate plans with interventionists, assistants, or other support staff.

GGESTED INTERVENTION FLOW

Assess → 2. Identify Skill Gaps → 3. Review & Reteach → 4. Practice → 5. Analyze Errors → 6. Reassess

ndards (CCSS)

.EE.7a, 8.EE.7b

Gap skills reviewed: 6.EE.3, 7.EE.1, 7.EE.4a

l Progression

equisite Skills	**Skills Addressed in This Unit**	**Skills Students Will Build Toward**
nteger operations verse operations	• Simplifying expressions • Two-step equations	• Solving inequalities • Systems of equations

8TH GRADE MATH INTERVE

eptions & Teaching Tips

ESSIONS

nts combining unlike terms ($3x + 2 = 5x$) or dropping the

dents circle each term with the sign in front of it before

NS

ts dividing before undoing addition or subtraction or usi

of the inverse.

lents name the operation on the variable, then write its i

MS

s combining terms on opposite sides of the equal sign or

n each side first. Rewrite subtraction as adding a negati

Y

multiplying only the first term inside the parentheses or

s from the outside number to every term inside.

DES

adding a variable term to one side and subtracting it fro

ts write the same operation under both sides on every st

ixing up 0 = 0 (infinitely many) and 3 = 5 (no solution) or

t statement true or false?" True means infinitely many. Fa