EQUATIONS, EXPRESSIONS & INEQUALITIES

Lesson	Resources
Unit Prep (pages 7 – 13)	25 DAY UNIT • Vocabulary Page • Warm Up Page • Unit Pre-Assessment (1 page)
(1) Properties and Order of Operations (pages 14 - 27)	• Two Warm Ups • Properties and Order of Operations Notes • Properties of Operations Fold and Flip Notes (3 versions) • Order of Operations Fold and Flip Notes (3 versions) • Mathematical Properties Practice • Order of Operations Practice • Equivalent Expressions Practice
{Optional} Combining Like Terms Mini Lesson (Separate file)	• Combining Like Terms notes • Combining Like Terms Practice • Combining Like Terms Matching Activity
(2) Adding and Subtracting Expressions (pages 28 – 38)	• Four Warm Ups • Adding and Subtracting Expressions Notes • Adding and Subtracting Expressions Guided Practice • Adding and Subtracting Expressions Fold and Flip Notes • Adding and Subtracting Expressions Practice • Adding and Subtracting Expressions Real World Applications
(3) Factoring & Expanding Expressions (pages 39 – 48)	• Four Warm Ups • Factoring Expressions Notes • Expanding Expressions Notes • Factoring and Expanding Expressions Practice (3 pages) • Lessons 1 – 3 Quiz (2 pages)
(4) Writing Expressions & Equations (pages 49 – 56)	• Four Warm Ups • Writing Expressions & Equations Key Words Graphic Organizer • Writing Expressions & Equations Notes (2 pages) • Writing Expressions and Equations Practice (2 pages)

EQUATIONS, EXPRESSIONS & INEQUALITIES

25 DAY UNIT

Lesson	Resources
(5) Solving Expressions & Equations (pages 57 – 69)	• Four Warm Ups • Evaluating Expressions Notes • Solving Equations Notes (2 pages) • Solving Equations Fold and Flip Notes (3 versions) • Solving Equations Practice (2 pages) • Writing and Solving Expressions and Equations Quiz
(6) Writing Inequalities (pages 70 – 77)	• Four Warm Ups • Writing Inequalities Key Words Graphic Organizer • Writing Inequalities Notes (2 pages) • Writing Inequalities Practice (2 pages)
(7) Solving Inequalities (pages 78 – 89)	• Four Warm Ups • Solving Inequalities Notes • Flip Flop Inequalities Notes • Flip Flop Inequalities Fold and Flip Notes • Solving Inequalities Practice • Writing & Solving Inequalities Practice • Writing & Solving Inequalities Quiz
(8) Graphing Solutions to Inequalities (pages 90 – 95)	• Four Warm Ups • Graphing Solutions to Inequalities Notes • Graphing Solutions to Inequalities {Number Line Practice} • Interpreting Solutions to Inequalities from Number Lines
End of Unit (pages 96 – 102)	• Study Guide (2 pages) • Final Unit Exam (4 pages)

Name_____
Date _____

WARM UP #3

Lesson 2 : Adding & Subtracting Expressions

Skill : Adding Expressions

1. $(^-3x - 2) + (^-2x + 1)$	2. $(14 + x) + (12x - 8)$
3. $(^-8x - 1) + (9 - 7x)$	4. $(15 - x) + (4x + 3)$

Name_____
Date _____

WARM UP #3

Lesson 3 : Factoring & Expanding Expres

Skill : Factoring Expressions

1. Factor 5x + 15.	2. Factor 20x – 5.
3. Factor 32x – 16.	4. Factor $^-15x + 70$.
5. Factor $^-8x + 24$	6. Factor 18 – 20x.

Name_____
Date _____

WARM UP #3

Lesson 4 : Writing Expressions and Equations

Skill : Writing Expressions

1. Write an expression to represent : Triple a number times the difference of four and three.	2. Write an expression to represent : Three less than four times a number.
3. Write an expression to represent : Six more than the product of a number and five.	4. Write an expression to represent : Nine times the sum of a number and two.
5. Write an expression to represent : Eight times the sum of half a number and three.	6. Write an expression to represent : The quotient of three and the product if three and a number.

Name_____
Date _____

WARM UP #3

Lesson 5 : Solving Expressions and Equa

Skill : Evaluating Expressions

1. Evaluate this expression if a = 5 and b = 7. $4a + 3b$	2. Evaluate 3.5m – 8 if m = 5.
3. What is the value of the given expression if x = 15? $(x - 9) \cdot ½$	4. What is the value of the expr 3m – 4.2 if m equals 2.1?
5. Evaluate $4½ x + 2x$ if x = 8.	6. Calculate the value of $x^2 +$ and y = 3.

Name_____
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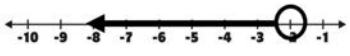
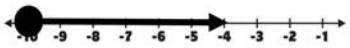
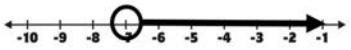
WARM UP #3

Lesson 6 : Writing Inequalities

Skill : Writing Inequalities

1. Write the inequality represented by the number line. 	2. Write the inequality represented by the number line. 
3. Write the inequality represented by the number line. 	4. Write the inequality represented by the number line. 

Name_____
Date _____

Lesson 5 : Solving Expressions and Equa

Skill : Writing and Solving Equations

1. Nine times the sum of a number and two is forty five. What is the number? {Write and solve an equation.}	2. Downloading music costs $0. song, plus a registration fee o you spent a total of $39.85, h songs did you download? {W

Name_____
Date _____

Lesson 6 :

1. Write an inequality to repres number decreased by 15 is	

does it cost Mr. Thompson to make 25 dozen cookies? {Write and solve an equation.}

Andrew have? {Write and sol equation.}

5. Write an inequality to represent : Three more than the difference of twice a	6. Write an inequality to represent : The product of twice a number and sixteen

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Warm Ups

Name_____

Date _____

Properties
Order of O
NO

Order of Operations Review :

OPERATION(S)	NOTES
Grouping Symbols	
Exponents	
Multiplication / Division	
Addition / Subtraction	

Properties Review :

PROPERTY	ADDITION	MULTIPLICATI
Associative		
Commutative		

Name_____

Date _____

Adding & Subtracting Expressions
NOTES

Key Words :

- Linear Expression – _____
- Examples – _____

The Steps (Horizontal Method) :

1) Write each expression in _____.
2) Apply the _____.
3) Combine _____.
4) Write the term with the _____ first.

The Steps (Vertical Method) :

1) Write the expressions _____.
2) _____ straight down.

: Subtract $^{-}2x + 5$ and $x - 9$

VERTICAL METHOD	HORIZONTAL METHOD
$^{-}2x + 5$ $-\quad x - 9$	$(^{-}2x + 5) - (x - 9)$

Name_____

Date _____

Writing Expressions and Equations
NOTES

Say it :

How would you say each of the expressions below?

- ❑ 8x : _____
- ❑ x ÷ 4 : _____
- ❑ 9 + x : _____
- ❑ x + 9 : _____ (this is different from the one abo
- ❑ ½x : _____

Take a look :

What are the differences and similarities between an expression and an equatio

Expression	Equation
An expression is :	An equation is :
An expression is not :	An equation is not :

Name_____

Date _____

Solving Inequalities
NOTES

Let's Review : What are the steps for solving equations?

- ✓ Step 1 : _____
- ✓ Step 2 : _____
- ✓ Step 3 : _____
- ✓ Step 4 : _____
- ✓ Step 5 : _____

Try this : Solve the inequality below using the steps from above. Don't forget step 5!

$$6x + 6 \geq 48$$

hat do you notice? _____

ow try this : Solve the ineq

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Notes

Name_____

Date _____

Mathema... Proper... PRAC...

Re-write each expression using the indicated property.

1) Write an equivalent expression using the associative property of addition.

$9 + (8 + 2) =$ _____

2) Write an equivalent expression using the multiplicative identity property.

_____ = 4

4) Write an equivalent expression usi... commutative property of multipli...

$5 \cdot (3 \cdot 10) =$ _____

5) Write an equivalent expression usi... additive inverse property.

_____ =

Name_____

Date _____

Adding & Subtracting Expressions

PRACTICE

Real World Applications

Read each scenario carefully. All expressions should be written in simplest form.

(1) Last week Patrice made (15d + 400) dollars. This week she made (10d + 50) dollars. Write an expression that represents how much money she made altogether over the last two weeks.

(4) You have two options for a moon bounce rental company for the school carnival. The first company charges a $50 fee plus $15 per day. The second company charges a $80 fee plus $20 per day. Write an expression that represents how much more the second company charges.

Name_____

Date _____

Factoring & Expanding Expressions

PRAC...

1) Factor $4x - 16$

2) Factor $27x + 81$

3) Expand $5(x + 2)$

4) Factor $4x + 18$

5) Expand $3(x + 9)$

11) Factor $-7x - 35$

12) Factor $4x + 28$

13) Factor $3x - 3$

14) Factor $15x + 33$

15) Factor $25 - 10x$

Name_____

Date _____

Writing Expressions and Equations

PRACTICE

Translate each phrase into an expression or equation.

1) Two less than the sum of twice a number and forty. _____

2) Fourteen less than the quotient of a number and 5. _____

3) 18 less than half a number is 6. _____

4) 9 more than the sum of a number and 3 is 35. _____

5) The sum of triple a number and 12. _____

6) 12 more than the sum of half a number and 3 is 45. _____

7) The product of 4 and twice a number is 60. _____

8) 5 less than the quotient of a number and 3 is 15. _____

...m of triple a number and 5 is 40. _____

Name_____

Date _____

Writing Inequalities

PRACT...

Write each verbal expression as an inequality.

1) A number decreased by 5 is at most 33.	11) The combined weight of four id... bricks is over 15 pounds.
2) A number plus 16 is greater than 10.	12) Twice a number increased by 6 ... least 3.
3) A sum of a number and 4 is at least 50.	13) There are more than five people... family.
4) A number decreased by fifteen is less than two.	14) The sum of a number and four ... most twenty.
5) The conference room can hold fewer than 100 people.	15) She can invite no more than thi... people to her birthday party.
6) Tara is inviting more than 15 people to her party.	16) She wants to buy three shirts tha... the same. She wants to spend ur... $50.
7) Nicholas can eat no more than 8 cookies.	17) You must be older than 16 to sw... with the dolphins.
8) Patrice runs at least 5 miles a day.	18) Swim practice will last more tha... minutes.
greater than four.	You spend more than $30 for a t...

Name_____

Date _____

Writing and Solving Inequalities

PRACTICE

Write an inequality to solve each problem.

1) Benny had $35 to spend at the store. He paid $10 for a DVD and then bought some packs of gum for $2 each. What is the maximum number of packs of gum he could purchase?

- Let p represent the _____
- Inequality _____
- Solve below. Benny can buy _____packs of gum.

2) Nikki can spend $50 at the mall. She finds a pair of shoes that cost twice as much as a shirt. What is the most the shirt can cost?

- Let c represent _____
- Inequality _____
- Solve below. The skirt can cost at most _____.

3) Hannah has $400 to spend on... she can spend each day whil...

- Let m represent the ...
- Inequality ...
- Solve below. Hannah ca...

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Worksheets

Name_____

Date _____

PRE-ASSESSM

Expressions, Equations & Inequal

Solve each problem.

1) Write an equivalent expression using the commutative property of addition.

4 + (6 + 2) = _____

2) Evaluate : $9 + 2 \cdot (12 - 5)^2$

3) Evaluate : $(^-3x + 3) + (2x - 10)$

4) Factor : $4x + 10$.

6) Write an equivalent expression associative property of multipl

3 • (2 • 6) = _____

7) $18 + (4 - 8) + 10$

8) Evaluate : $(6x - 4) - (2x - 6)$

9) Expand : $3(12x + 2)$

Name_____

Date _____

Lessons 1 - 3

QUIZ

11) Write an expression equivalent to : $8x - 100$

12) Find the sum : $3(4x - 2) + (^-4x + 8)$

13) Find the difference : $(^-5x + 9) - (8x - 2)$

14) Factor : $14x + 16$

16) Write an expression equivalent to : $12x + 28$

17) Find the sum : $(7x + 3) + (19x - 4)$

18) Find the difference : $(^-3x - 4) - (3x + 5)$

19) Expand : $^-5(3x - 5)$

: $7x + 84$

20) Expand : $^-4(2x + 2) + 3$

Name_____

Date _____

Expressions and Equations

QUI

Write an equation to solve each problem.

1) The sum of three consecutive numbers is 75. What is the smallest of these numbers?

- Let n represent _____
- Equation _____
- Solve below. _____is the smallest number in the set.

2) James won 30 tickets at the fair. He gave 2 to each friend. He only has 10 tickets lef many friends does he have?

- Let f represent the _____
- Equation _____
- Solve below. James shared with _____friends.

3) Evaluate if x = 2 and y = 8.

$^-4x - 2y$

4) Evaluate if a = $^-2$ and b = 4.5.

$a^2 + 2b$

5) Evaluate if m = ½.

$m(4 + 2m) - m$

6) Evaluate if p = $^-5$.

$p + 2p + 3p$

7) Solve : $3x + 9 = 5$

8) Solve : $^-30 = ^-9x - 3$

Name_____

Date _____

Integers and Rational Numbers

UNIT EXAM

Directions : Show your work whenever possible.

1) Write an equivalent expression using the associative property of addition.

3 + (9 + 2) = _____

2) Identify the property :

$9 \cdot \frac{1}{9} = 1$

3) Evaluate : $(9 - 2)^2 \cdot 2 - 15$

4) Write an expression equival

$2x + 8$

5) Evaluate : $(^-5x + 9) + (7x - 2$

7) Identify the property :

$5 \cdot 1 = 5$

8) $18 \div (14 - 8) + 5^2$

9) Write an expression equivalent to :

$9(3x + 3)$

7th Grade Math Curriculum

Expressions, Equations and Inequalities

Unit 2 7th

Unit 2 7th

Unit 2 7th Grade Math

Unit 2 7th Grade Math

Unit TWO Lesson ONE

Properties and Order of Operations STUDENT TRACKING

Name	Warm Up 1	Warm Up 2	Notes	Properties Practice	Order of Op. Practice	Expressions Practice

Unit TWO Lesson THREE

Factoring & Expanding Expressions STUDENT TRACKING

Name	Practice 1	Practice 2	Practice 3	Lessons 1 – 3 Quiz

Notes :

Unit TWO Lesson SEVEN

Solving Inequalities STUDENT TRACKING

Name	Warm Up 1	Warm Up 2	Warm Up 3	Warm Up 4	Inequalities Notes

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Tracking Sheets & Binder Labels

EQUATIONS, EXPRESSIONS & INEQUALITIES

Vocabulary	Objectives
• Algebraic Expression • Coefficient • Constant • Distributive Property • Equation • Factor • Inequality • Like Terms • Maximum • Minimum • Term	• Use properties of ope to generate equivale expressions. • Add, subtract, factor expand linear expres with rational coefficie • Create and solve pro involving expressions equations. px + q = r p(x + q) = r • Create and solve pro involving inequalities.

Name_____

Week of _____ to _____

WEEKLY WARM UP SHEET

Date:	
Date:	

Exit Ticket	Exit Ticket	Exit Ticket	Exit Ticket	Exit Ticket
Name_____	Name_____	Name_____	Name_____	Name_____
Date _____	Date _____	Date _____	Date _____	Date _____

Expressions, Equations & Inequalities
Lesson Plan

d(s): _____ Date(s): _____

Materials:

tor ❑ Scissors ❑ Compass ❑ _____
d pencils ❑ Glue ❑ Graph paper ❑ _____
❑ Protractor ❑ Dry erase ❑ _____

Progression:

EXPRESSIONS, EQUATIONS & INEQUALITIES

Algebraic Expression	
Coefficient	
Constant	
Distributive Property	
Equation	
Factor	
Inequality	
Like Terms	
Maximum	
Variable	

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Planning Pages