Grade 5 Mathematics
Week of December 14 – December 18

Lesson 3.5 – Equation Solving
Unit 3 Inquiry Project

Lesson Materials

- Lessons for Section 3.5 Equation Solving
- Unit 3 Learning Guide (This PDF)
- Unit 3 Inquiry Project

Use the link above to open the lessons for this section. Remember: on the lesson page, use the arrow next to the "Table of Contents" at the **top of the page** to move through the lessons. You can also click on the Table of Contents to open the menu so you can jump to a specific lesson page.

Work through the online lessons. You can work at your own pace or follow the suggested schedule below. Complete the activities in your Learning Guide as you work through the lessons. You can print the Learning Guide, or, copy out the questions on a separate piece of paper. Be sure to try the games and practice quizzes as you make your way through the online lesson book.

Suggested Lesson Schedule

Monday	Wednesday
• Solving Equations	• Unit 3 Inquiry Project
• Equation or Expression?	
• Making Equations	**Thursday**
• Addition or Subtraction	• Unit 3 Inquiry Project
• Practice 1	
• LG 3.5 #1-3, p. 13-14	**Friday**
Tuesday	• Unit 3 Inquiry Project
• Multiplication	
• Practice #2	
• Division	
• Practice #3	
• Summary	
• LG 3.5 #4-5, p. 14-15	

3.5 Equation Solving

1. Decide if each statement is true only of expressions (EXP), only of equations (EQU), or true of both equations and expressions (BOTH). Circle the correct answer.

   a. Contains an equal sign.   EXP   EQU   BOTH

   b. Can contain variables such as x, n, and t.   EXP   EQU   BOTH

   c. Does not contain an equal sign.   EXP   EQU   BOTH

   d. Can use any mathematical operation, such as $+, -, \times, \div$.   EXP   EQU   BOTH

   e. Can only be evaluated if given the value of the variable.   EXP   EQU   BOTH

2. Find the **opposite** mathematical operation of the operation in each equation. _Hint: You need to be able to identify the **opposite** of an operation in order to solve equations._

Ex.

$$\frac{n}{7} = 14$$

$+ \quad - \quad \textcircled{\times} \quad \div$

$\frac{n}{7}$ is a division. The opposite of ÷ is ×.

c.

$$w \div 12 = 8$$

$+ \quad - \quad \times \quad \div$

a.

$$x + 9 = 33$$

$+ \quad - \quad \times \quad \div$

d.

$$r - 41 = 9$$

$+ \quad - \quad \times \quad \div$

b.

$$15m = 135$$

$+ \quad - \quad \times \quad \div$

e.

$$\frac{z}{6} = 11$$

$+ \quad - \quad \times \quad \div$

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3. A student worked at solving the following equations. Determine whether they reached the correct answer or not by checking their work. _Reminder: To check the solution to an equation, plug the solution back into the problem and evaluate._

Ex. $d - 16 = 51$

Student answer: $d = 68$

$(\ \ ) - 16 = 51$
$(68) - 16 = 51$
$52 \neq 51$
The answer is <u>incorrect</u>.

a. $x - 23 = 38$

Student answer: $x = 61$

b. $q + 20 = 93$

Student answer: $q = 63$

c. $m + 15 = 57$

Student answer: $m = 42$

d. $5t = 46$

Student answer: $t = 9$

e. $4v = 52$

Student answer: $v = 14$

4. Solve each equation by isolating the variable. Follow the steps. _Reminder: Even though you may be able to solve these equations in your head, practice writing down the steps as they will be needed when the level of difficulty increases._

	Ex. $8e = 56$	**a.** $f - 13 = 51$	**b.** $w + 6 = 67$
Step 1: Determine the operation needed to isolate the variable. (The **opposite** operation).	$\div$		
Step 2: Use this operation on **both sides** of the equation.	$\dfrac{8e}{8} = \dfrac{56}{8}$		
Step 3: Evaluate	$e = 7$		
Step 4: Check your answer by putting it back into the question.	$8(7) = 56$ $56 = 56$		

	c. $h \div 5 = 12$	d. $6p = 36$	e. $\dfrac{x}{10} = 4$
Step 1: Determine the operation needed to isolate the variable. (The **opposite** operation).			
Step 2: Use this operation on **both sides** of the equation.			
Step 3: Evaluate			
Step 4: Check your answer by putting it back into the question.			

5. Solve each equation. Follow the same steps as you did in #3.

Ex. $u + 15 = 47$

$\qquad -\mathbf{15} \ -\mathbf{15}$

$\qquad \mathbf{u = 32}$

$\left(\mathbf{32}\right) + \mathbf{15 = 47}$

Correct

a. $\dfrac{c}{7} = 8$

b. $6a = 18$

c. $p - 23 = 34$

d. $3g = 36$

e. $t + 62 = 84$

f. $\dfrac{w}{2} = 34$

g. $j - 41 = 26$