Practice Solving Equations and Representing Situations with Equations

Lesson # 4

Addressing	**6.EE.B** Reason about and solve one-variable equations and inequalities. **6.EE.B.5** Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true. **6.EE.B.6** Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. **6.EE.B.7** Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers. **6.NS.B.3** Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

Let’s solve equations by doing the same to each side.

Today’s Goals

- ❏ I can explain why different equations can describe the same situation.
- ❏ I can solve equations that have whole numbers, fractions, and decimals.

Students, write your response!

Number Talk: Subtracting from Five

Warm Up 4.1

Find the value of each expression mentally.

$5 - 2$

$5 - 2.1$

$5 - 2.17$

$5 - 2\frac{7}{8}$

Row Game: Solving Equations Practice

Activity 4.2

- MLR2: Collect and Display

$$2x = 12$$

Row Game How To:

Solve the equations in one column. Your partner will work on the other column.

Check in with your partner after you finish each row. Your answers in each row should be the same. If your answers aren’t the same, work together to find the error and correct it. (10 min)

Let’s Talk About It

$$21 = \frac{1}{4}x$$

$$\frac{5}{7}x = 55$$

Choosing Equations to Match Situations

Activity 4.3

- MLR6: Three Reads

Work quietly on the task (10 min)

- Circle **all** of the equations that describe each situation. If you get stuck, draw a diagram.
- Find the solution for each situation.

1. Clare has 8 fewer books than Mai. If Mai has 26 books, how many books does Clare have?

$26 - x = 8$ $\quad x = 26 + 8$ $\quad x + 8 = 26$ $\quad 26 - 8 = x$

$x =$ _____

2. A coach formed teams of 8 from all the players in a soccer league. There are 14 teams. How many players are in the league?

$y = 14 \div 8$ $\quad \frac{y}{8} = 14$ $\quad \frac{1}{8}y = 14$ $\quad y = 14 \cdot 8$

$y =$ _____

3. Kiran scored 223 more points in a computer game than Tyler. If Kiran scored 409 points, how many points did Tyler score?

$223 = 409 - z$ $\quad 409 - 223 = z$ $\quad 409 + 223 = z$ $\quad 409 = 223 + z$

$z =$ _____

4. Mai ran 27 miles last week, which was three times as far as Jada ran. How far did Jada run?

$3w = 27$ $\quad w = \frac{1}{3} \cdot 27$ $\quad w = 27 \div 3$ $\quad w = 3 \cdot 27$

$w =$ _____

1st Read: Shared Reading

What is this situation about?

2nd Read: Team Reading

What is countable or measureable in this story?

3rd Read: Team Reading

How might you begin to solve this task?

Start working on your own.

Then we'll discuss your thinking as a class!

Are you ready for more?

Mai’s mother was 28 when Mai was born. Mai is now 12 years old. In how many years will Mai’s mother be twice Mai’s age? How old will they be then?

Lesson Synthesis

Describe some ways to understand how a situation can be represented mathematically.

Lesson Synthesis

What have you learned about equations that surprised you?

Lesson Synthesis

- Share your thoughts about using diagrams to help understand relationships.
- Where have you seen diagrams used earlier this year?
- Where were they most helpful to you? Least helpful?

Lesson Synthesis

Describe any connections you see between the types of diagrams used in the last four lessons.

Today’s Goals

- ❏ I can explain why different equations can describe the same situation.
- ❏ I can solve equations that have whole numbers, fractions, and decimals.

More Storytime

Cool Down 4.4

Cool Down

1. Write a story to match the equation $x + 2\frac{1}{2} = 10$.
2. Explain what x represents in your story.
3. Solve the equation. Explain or show your reasoning.