A New Way to Interpret *a over b*

Lesson # 5

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.

Let’s investigate what a fraction means when the numerator and denominator are not whole numbers.

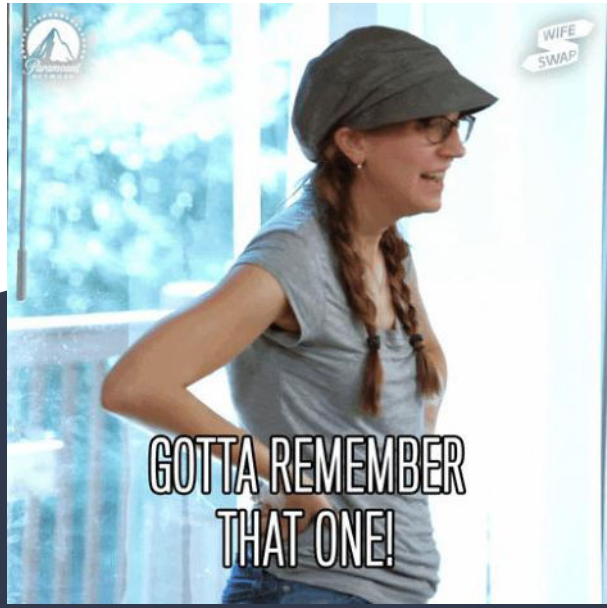
Today's Goals

I understand the meaning of a fraction made up of fractions or decimals, like $\frac{2.1}{0.07}$ or $\frac{\frac{4}{5}}{\frac{3}{2}}$.

When I see an equation, I can make up a story that the equation might represent, explain what the variable represents in the story, and solve the equation.

Recalling Ways of Solving

Warm Up 5.1



Let’s Remember...

Summarize what we learned in the first four lessons

Students, write your response!

Work quietly on the problems (1-2 min)

Solve each equation. Be prepared to explain your reasoning.

1. $0.07 = 10m$

2. $10.1 = t + 7.2$

Interpreting a/b

Activity 5.2

- MLR2: Collect & Display
- Think Pair Share

- Work quietly (5-7 min)
- Share your responses with your partner (3-5 min)

Solve each equation.

1. $35 = 7x$

2. $35 = 11x$

3. $7x = 7.7$

4. $0.3x = 2.1$

5. $\frac{2}{5} = \frac{1}{2}x$

Are you ready for more?

Solve the equation. Try to find some shortcuts.

$$\frac{1}{6} \cdot \frac{3}{20} \cdot \frac{5}{42} \cdot \frac{7}{72} \cdot x = \frac{1}{384}$$

Storytime Again

Activity 5.3

- MLR1: Stronger & Clearer Each Time

Remember Matching Equations with a Situation?

After Elena ran 5 miles on Friday, she had run a total of 20 miles for the week. How many miles did she run before Friday?

$$x + 5 = 20$$

Now you're going to come up with your own situation that can be represented by equations!

Work with your partner on the task (5-10 min)

Take turns with your partner telling a story that might be represented by each equation. Then, for each equation, choose one story, state what quantity x describes, and solve the equation. If you get stuck, draw a diagram.

1. $0.7 + x = 12$

2. $\frac{1}{4}x = \frac{3}{2}$

Lesson Synthesis

- Work with your partner
- Each of you should write a number that is in fraction or decimal form
- Choose one number to be the coefficient in this equation $px = q$ and the other number should be on the other side of the equal sign.
- Work together to write the equation and the solution to the equation

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Choosing Solutions

Cool Down 5.4

Cool Down

Select **all** the expressions that are solutions to $5 = \frac{2}{3}x$.

A. $5 \cdot \frac{2}{3}$

B. $\frac{5}{\frac{2}{3}}$

C. $5 \div \frac{2}{3}$

D. $\frac{15}{2}$

E. $\frac{10}{3}$