Grade 6 Accelerated
Day 2

Standard	***7.EEI.3*** Extend previous understanding of Order of Operations to solve multi-step real-world and mathematical problems involving rational numbers. Include fraction bars as a grouping symbol.
Learning Targets **I Can Statements**	I can apply order of operations to multi-step real-world problems.
Essential Question(s)	How important is order of operation when working through multi-step situations? Can changing the order of solving a multi-step mathematical problem still achieve the same outcome?
Resources	No additional resources needed. However, all answers should be written on a separate sheet of paper.
Learning Activities or Experiences	1. Complete at least 3 topics of your **ALEKS** pathway. (if available) 2. Review attached notes and complete the "You Try It." 3. Complete the "Today's Thought" activity.

NOTE: *For additional practice aligned to your grade for SC READY review please refer to the 6th grade level assignments.*

Lesson Notes

When applying order of operations with numerical expressions the acronym **PEMDAS** often comes to mind. You many know it as "Please Excuse My Dear Aunt Sally."

Parenthesis
Exponents
Multiplication (from left to right)
Division (from left to right)
Addition (from left to right)
Subtraction (from left to right)

So, what does order of operations look like when there is an unknown, a variable? This now makes it an algebraic expression or equation. There is not an acronym but you can refer to some steps to organization your thought process that will allow you to work through the mathematical situation.

Parenthesis – this could be the distributive property
Exponents – evaluate all powers
Addition / Subtraction – isolate your variable using inverse operations
Multiplication / Division – isolate your variable using inverse operations

NOTE: *All steps are with the understanding, if applicable. Not all equations will have every element of this process. Also, this provides a basic process. As the mathematical situations grow in complexity so will your process. For example, you may be required to combine like terms multiple times when solving an equation.*

Let's Take a Look

Christopher is making a bookshelf. Each shelf needs to be 3 ½ feet long. Each side of the bookshelf needs to be 5 ½ feet tall. He has a 25-foot board that will be exactly enough wood if he cuts precisely. How many shelves will be on the bookshelf?

Let x represent our unknown which is the number of bookshelves. The following equations represents our mathematical situation.

$$2\ (5\ \tfrac{1}{2})\ +\ 3\ \tfrac{1}{2}\ x\ =\ 25$$

Let's use the steps above to solve the equation.

Equation	Explanation
$2\ (5\frac{1}{2}) + 3\frac{1}{2}x = 25$	Original Equation
$11 + 3\frac{1}{2}x = 25$	Parenthesis
$11 - 11 + 3\frac{1}{2}x = 25 - 11$	Addition / Subtraction
$3\frac{1}{2}x = 14$	Simplify
$\frac{3\frac{1}{2}}{3\frac{1}{2}}x = \frac{14}{3\frac{1}{2}}$	Multiplication / Division
$x = 4$	Simplify to Solve

So it looks like Christopher will be able to make four shelves on his bookshelf.

You Try It

Francis earns $3.50 an hour mowing lawns. He also gets $10 a week allowance. Bella earns $5.25 an hour babysitting and spends $11 a week on books. If Francis and Bella work the same number of hours a week and have the same amount of money at the end of each week, for how many hours a week do they each work?

Today's Thought

1. Denise is training for a race. She plans to increase the distance she runs by 20% each week. Denise runs 5 miles the 1st week.

$$5(1.2)^{x-1}$$

If *x* represents the number of weeks Denise runs, how many miles does she run during the 3rd week?

a. 5.2 miles
b. 6 miles
c. 7 miles
d. 7.2 miles

2. At a local flower shop, corsages are on sale. Each corsage costs $10, but the florist will sell every third corsage purchased at a 60% discount. To save money, a group of 12 friends, going to a school dance, decide to purchase corsages together. **How much will it cost to buy 12 corsages?**

a. $84
b. $96
c. $104
d. $120

3. The table shows the changes in the amount of money in Christopher's bank account in the last four weeks.

Week	Change in Amount
1	-$58.47
2	$36
3	-$15.82
4	$24

If Christopher has $79.14 left in his bank account after the four weeks, how much did he have originally?

a. $93.43
b. $80.67
c. $64.85
d. $55.15

4. A lifeguard earns $12 per hour working during the summer. The lifeguard works a total of 52 hours and spends 80% of the money earned on a video game system. **Which statement is true?**

a. The lifeguard has about $500 left after earning $624 and spending about $125 of that on the video game system.
b. The lifeguard has about $500 left after earning $624 and spending about $499 of that on the video game system.
c. The lifeguard has about $125 left after earning $624 and spending about $125 of that on the video game system.
d. The lifeguard has about $125 left after earning $624 and spending about $499 of that on the video game system.