

**Expressions and Equations**  
**CCSSO Math SCASS**  
**October 1-3**

Complete the tasks, and think about what standards or clusters they illustrate within the EE domain. Also consider their connection to A-SSE.

1. What might a student be thinking if they try find the following expressions equivalent to:  $7 - 2(3 - 8x)$

$5(3 - 8x)$	
$7 - 2(-5x)$	
$7 - 6 - 16x$	

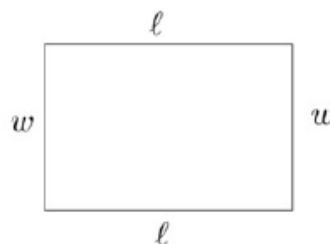
2. Equivalent Expressions?

If we multiply  $\frac{x}{2} + \frac{3}{4}$  by 4, we get  $2x + 3$ . Is  $2x + 3$  an equivalent expression to  $\frac{x}{2} + \frac{3}{4}$ ?

3. Rectangle Perimeter

The students in Mr. Nolan's class are writing expressions for the perimeter of a rectangle of side length  $\ell$  and width  $w$ . After they share their answers, the following expressions are on the board:

- Sam:  $2(\ell + w)$
- Joanna:  $\ell + w + \ell + w$
- Kiyō:  $2\ell + w$
- Erica:  $2w + 2\ell$



Which of the expressions are correct and how might the students have been thinking about finding the perimeter of the rectangle?

#### 4. Miles to kilometers

The students in Mr. Sanchez's class are converting distances measured in miles to kilometers. To estimate the number of kilometers, Abby takes the number of miles, doubles it, then subtracts 20% of the result. Renato first divides the number of miles by 5, then multiplies the result by 8.

- Write an algebraic expression for each method.
- Use your answer to part (a) to decide if the two methods give the same answer.

#### 5. Distance to school

Some of the students at Kahlo Middle School like to ride their bikes to and from school. They always ride unless it rains.

Let  $d$  be the distance in miles from a student's home to the school. Write two different expressions that represent how far a student travels by bike in a four week period if there is one rainy day each week.

#### 6. Money from Grandma

Daniel went to visit his grandmother, who gave him \$5.50. Then he bought a book costing \$9.20. If he has \$2.30 left, how much money did he have before visiting his grandmother?

#### 7. Slab of Soap

If a bar of soap balances  $\frac{3}{4}$  of a bar of soap and  $\frac{3}{4}$  of a pound, how much does the bar of soap weigh?

## 8. Fishing Adventures 2

Fishing Adventures rents small fishing boats to tourists for day-long fishing trips. Each boat can only carry 1200 pounds of people and gear for safety reasons. Assume the average weight of a person is 150 pounds. Each group will require 200 lbs of gear for the boat plus 10 lbs of gear for each person.

- a. Create an inequality describing the restrictions on the number of people possible in a rented boat. Graph the solution set.
- b. Several groups of people wish to rent a boat. Group 1 has 4 people. Group 2 has 5 people. Group 3 has 8 people. Which of the groups, if any, can safely rent a boat? What is the maximum number of people that may rent a boat?