STUDENT MATERIALS

TASK 1 – WHO KNOWS THE ORDER

Alexander, Bianca and Chancey each were given the expression $16 - 2 \div 2 + 5$. Each student ended up with something different. Their work and steps are shown below:

Alexander	Bianca	Chauncey
$16 - 2 \div 2 + 5$ $14 \div 2 + 5$ $7 + 5$ 12	$16 - 2 \div 2 + 5$ $14 \div 7$ 2	$16 - 2 \div 2 + 5$ $16 - 1 + 5$ $15 + 5$ 20

Pemdas

Choose the student who performed order of operations correctly and arrived at the correct equivalent expression and check the ❒ next to "There are no errors" in their feedback below.

For the other two students, explain the error or errors they made in their work .

Feedback for Alexander	Feedback for Bianca	Feedback for Chauncey
❒ There are no errors. Explain any errors: he did the problem in the order it was already in. Not following Pemdas.	❒ There are no errors. Explain any errors: She did subtraction and addition before the devision.	☑ There are no errors. Explain any errors: she did The devision before everything else, and the D in pemdas is before addition and subtraction.

TASK 2 – GROUP IT!

1. Damond noticed that the two students who did not use order of operations correctly could add grouping symbols so the equations below are true.

   Add parentheses to the equations, if necessary, to make them true. Remember that one of the equations is already correct and does not need parentheses because it is already true.

Alexander's Equation: $(16 - 2) \div 2 + 5 = 12$ Pemdas

Bianca's Equation: $(16 - 2) \div (2 + 5) = 2$

Chauncey's Equation: $[16 - (2 \div 2)] + 5 = 20$

2. Create your own problem using parentheses and at least two operations that could be confusing to figure out or simplify if you didn't know how to use order of operations correctly. Show how to simplify the expression correctly. Then show how someone may incorrectly simplify the expression if they didn't understand order of operations.

Your own problem: $20 + (5 \div 5) =$	
How to simplify the expression CORRECTLY. ① $20 + (5 \div 5)$ ② $5 \div 5 = 1$ ③ $20 + 1 = 21$	How someone who doesn't understand order of operations may simplify the expression. ① $20 + 5 \div 5$ ② $20 + 5 = 25$ ③ $25 \div 5 = 5$

REFLECTION

Respond to the following reflection question:

Based on the work you saw today and the feedback you provided, why might it be important to have rules like the order of operations?

It's important to have rules like the order of operations because if we didn't everyone would solve the problem differnty. Therefor, there would be no correct answer.