



OPERATION SENSE

Name: *"The One and Done"*

Type: *Routine*

About the Routine: "The One and Done" is a routine for students to practice using the identity property to create friendlier problems. It helps them think about problems in terms of whole numbers and then compensate for that adjustment. Students first determine how to create an equivalent problem and then reason about how to solve the problem. The first example shows examples of expressions that are good starting points. The second example shows how to create more advanced versions of the routine.

Materials: This routine does not require any materials.

- Directions:**
1. Post two or three expressions for students to consider.
 2. Create a column for recording an equivalent expression that is the result of using the identity property. This column is dubbed "The One."
 3. Create a second column for recording how students found the quotient. Title this column "and Done."
 4. Students examine the first expression and discuss with partners how they can generate an equivalent expression using the identity property.
 5. Ideas are shared among the group.
 6. Then, students reason about how to find the quotient and share their ideas with partners.
 7. The whole group comes together again to share their reasoning.

Example A shows expressions that focus on changing to a whole-number divisor. $63.6 \div 0.6$ can be written as a fraction:

The One and Done (example A)		
	The One	and Done
$63.6 \div 0.6$		
$71.4 \div 0.7$		
$8.1 \div 0.09$		

$$\frac{63.6}{0.6} \times \frac{10}{10} = \frac{636}{6}$$

Thus, $636 \div 6$ is "The One" equation that is easier to solve. If students understand this identity property in action, they do not need to write these fractions, but if they do not understand it, this notating can help them see why the original expression and the adapted expressions are in fact equal.

After creating “The One” expressions, students talk about how to solve the problem (and DONE). In the first row, they might say that they thought about $636 \div 6$ as $600 \div 6$ added to $36 \div 6$. They found the quotient to be 106. In the middle row, $71.4 \div 0.7$ became $714 \div 7$ (ONE) which was then reasoned to be $(700 \div 7) + (14 \div 7)$ or 102 (DONE).

The One and Done (example A)

	The ONE	and DONE
$63.6 \div 0.6$	$636 \div 6$	
$71.4 \div 0.7$	$714 \div 7$	
$8.1 \div 0.09$	$810 \div 9$	

Example B is slightly more challenging, as students will need to reason with decimals. The third row might spark an interesting debate among students. Some might argue that they should multiply by 100/100 to create $72 \div 8$, while another group argues that it is just a basic fact because it is asking how many hundredths are in hundredths. You can use this argument to help students connect and cement both ideas.

The One and Done (example B)

	The ONE	and DONE
$63.6 \div 0.6$		
$75 \div 2.5$		
$0.72 \div 0.08$		