


## Problem Solving using the Four Operations

<p style="text-align: center;"><b>Overarching Student Learning Goals</b></p> <p style="text-align: center;">In this unit, your child will work to build an understanding of the following:</p>	<p style="text-align: center;"><b>Resources/Tasks to support your child at home.</b></p>
<p><b>Identifying which operation(s) are needed to solve a problem.</b></p> <p><i>Think about the actions in the story problems below. Identify the operation (multiplication, division, addition or subtraction) that matches the action in the problem. Justify your thinking.</i></p> <p><b>Vanessa was buying DVDs of her old favorite TV series. She bought eight DVDs at the store and she bought seven online. How many DVDs did she buy total?</b></p> <p><b>Billy bought five boxes of books at a yard sale. If each box had seven books how many books did he buy?</b></p> <p><b>Sample Response:</b> “This is addition, because I am putting together the two amounts of DVDs.”</p> <p><b>Sample Response:</b> “This is multiplication, because there are equal groups that I am putting together.”</p>	<ul style="list-style-type: none"> <li>When your child is solving one- or two-step word problems, ask them to use the actions (<u>not</u> key words) to justify their choice of operation. Sample justifications connected to actions: <ul style="list-style-type: none"> <li>Addition: I am putting to different amounts together.</li> <li>Subtraction: I am taking some away, or I am separating a total amount.</li> <li>Multiplication: I have equal groups of things and I am trying to find the total.</li> <li>Division: I have a total amount of objects that I am separating into equal groups.</li> </ul> </li> </ul>
<p><b>Creating models of word problems (concrete or visual).</b></p> <p><i>Create/draw a model to represent the actions in the word problem.</i></p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Rita found 4 eggs. Joe found 3 times as many eggs as Rita. They put their eggs in the same basket. How many eggs were in the basket?</p> </div> <p><b>Sample Models:</b></p> 	<ul style="list-style-type: none"> <li>In addition to asking your child to justify their choice of operation(s) when solving word problems, have them create a concrete model (using coins, paperclips, post-its, buttons, etc.) or draw a pictorial representation that matches the actions in the problem.</li> <li>LearnZillion Video: Solving Two-Step Problems Using a Model <a href="https://bit.ly/2v9KkAK">https://bit.ly/2v9KkAK</a></li> <li>Math Playground: Thinking Blocks Modeling Tool <a href="https://bit.ly/2O4Q6e6">https://bit.ly/2O4Q6e6</a></li> </ul>

Grade 3

**Representing one- and two-step word problems using equations with letter(s) to represent unknowns.**

Write an equation(s) to represent the story problem below. Let "e" represent the number of eggs in the basket.

Rita found 4 eggs. Joe found 3 times as many eggs as Rita. They put their eggs in the same basket. How many eggs were in the basket?

Sample Responses:

$$3 \times 4 = 12,$$

$$4 + 12 = e$$

$$4 + (3 \times 4) = e$$

- As your child is creating models to represent one- and two-step word problems, challenge them to write equations with variables to represent each step in their model. Students can then try to represent all of the steps in one equation. \*Students do not need to know the order of operations.
- Kahn Academy Video: Unknowns with Multiplication and Division <https://bit.ly/1QjJge0>

**Solving one- and two-step word problems.**

Create a models and solve the following problem.

Kami scored a total of 21 points during her basketball game. She made 6 two-point shots and the rest were three-point shots. How many three-point shots did Kami make?

Sample Response:

$2 \times 6 = 12$

$21 - 12 = 9$

$9 \div 3 = 3$

Kami made 3  
three point shots.

- When students solve one- and two-step word problems, continue to reinforce the need to create models, write equations with variables and justify thinking by making connections back to the original problem.
- Khan Academy: Two-Step Estimation Problem – Marbles <https://bit.ly/2Kh1Qb0>
- Khan Academy: Two-Step Problem – Truffles <https://bit.ly/2v6Zs1K>
- Math Playground: Thinking Blocks Modeling Tool <https://bit.ly/2O4Q6e6>