4th Grade Math

Module 1: Place Value of Multi-Digit Whole Numbers

Math Parent Letter

This document is created to give parents and students a better understanding of the math concepts found in Eureka Math (© 2013 Common Core, Inc.) that is also posted as the Engage New York material which is taught in the classroom. Module 1 of Eureka Math (Engage New York) covers place value, rounding, and algorithms for addition and subtraction.

Focus Area ▶ Topic F: *Addition and Subtraction Word Problems*

Words to Know:

Algorithm- a process or set of rules to be followed in calculations

Tape diagram - a visual representation of addends using connected rectangles – designed to help students break down and analyze word problems – visually represent part, part, whole relationships
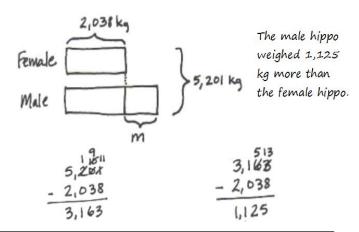
Variable - a letter like x or y that represents an unknown number
Example: in $x + 5 = 7$, x is the variable

Multi-Step Problems with Tape Diagrams

Tape diagrams are used to model single and multi-step word problems. In the example below, the tape diagram helps the student determine which operations will be needed.

Example Problem and Answer

A pair of hippos weighed 5,201 kg together. The female weighed 2,038 kg. How much more did the male weigh than the female?

The male hippo weighed 1,125 kg more than the female hippo.

$$\begin{array}{r} 5,201 \\ -\ 2,038 \\ \hline 3,163 \end{array} \qquad \begin{array}{r} 3,163 \\ -\ 2,038 \\ \hline 1,125 \end{array}$$
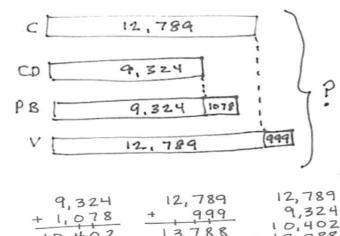
OBJECTIVES OF TOPIC F

▶ Solve additive compare word problems modeled with tape diagrams.
▶ Solve multi-step word problems modeled with tape diagrams and assess the reasonableness of answers using rounding.
▶ Create and solve multi-step word problems from given tape diagrams and equations.

Focus Area ▶ Topic F: *Addition and Subtraction Word Problems*
Multi-Step Problems with Tape Diagrams

As students continue practing with tape diagrams, their ability to reason and problem solve will increase as will their ability to work with more complex problems.

Example Problem and Answer

The shop sold 12,789 chocolate and 9,324 cookie dough cones. They sold 1,078 more peanut butter cones than cookie dough cones and 999 more vanilla cones than chocolate cones. What was the total number of ice cream cones sold?
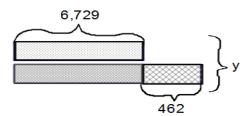

$$\begin{array}{r} 9,324 \\ +\ 1,078 \\ \hline 10,402 \end{array} \qquad \begin{array}{r} 12,789 \\ +\ 999 \\ \hline 13,788 \end{array} \qquad \begin{array}{r} 12,789 \\ 9,324 \\ 10,402 \\ +\ 13,788 \\ \hline 46,303 \end{array}$$

They sold 46,303 ice cream cones!

Starting with Tape Diagrams

Students will be given a tape diagram and asked to create and solve multi-step word problems that would fit it.

Example Problem and Answer

Using the diagram below, create your own word problem and solve for the missing variable.

Answer

Hal had 6,729 baseball cards. Jeff had 462 more cards than Hal. How many did they have altogether?

$$6{,}729 + 6{,}729 + 462 = y$$

$$y = 13{,}920$$

$$\begin{array}{r} 6,729 \\ 6,729 \\ +\ 462 \\ \hline 13,920 \end{array}$$

Can you think of another problem to match the tape diagram?