



Topic D

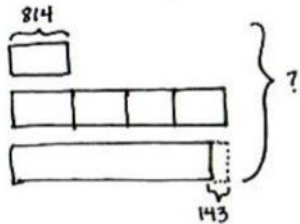
Multiplication Word Problems

4.OA.1, 4.OA.2, 4.OA.3, 4.NBT.5

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|----------------------------|---------------------|---|---|
| Focus Standards: | 4.OA.1 | Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations. | |
| | 4.OA.2 | Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. (See CCLS Glossary, Table 2.) | |
| | 4.OA.3 | Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. | |
| | 4.NBT.5 | Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. | |
| Instructional Days: | 2 | | |
| Coherence | -Links from: | G3–M1 | Properties of Multiplication and Division and Solving Problems with Units of 2–5 and 10 |
| | -Links to: | G3–M3 | Multiplication and Division with Units of 0, 1, 6–9, and Multiples of 10 |
| | | G5–M2 | Multi-Digit Whole Number and Decimal Fraction Operations |

Topic D gives students the opportunity to apply their new multiplication skills (**4.NBT.5**). In Lesson 12, students extend their work with multiplicative comparison from Topic A to solve real-world problems (**4.OA.2**). As shown on the next page, students use a combination of addition, subtraction, and multiplication to solve multi-step problems in Lesson 13 (**4.OA.3**).

Problem 4: In one month, Charlie read 814 pages. In the same month his mom read 4 times as many pages as Charlie, and that was 143 pages more than Charlie’s dad read. What was the total number of pages read by Charlie and his parents?



Charlie and his parents read 7,183 pages in one month.

Solution A:

$$\begin{array}{r} 814 \\ \times 4 \\ \hline 3256 \end{array} \quad \begin{array}{r} 3256 \\ - 143 \\ \hline 3113 \end{array} \quad \begin{array}{r} 3256 \\ 3113 \\ + 814 \\ \hline 7,183 \end{array}$$

Solution B:

$$\begin{array}{r} 814 \\ \times 9 \\ \hline 7326 \end{array} \quad \begin{array}{r} 212 \\ 7326 \\ - 143 \\ \hline 7,183 \end{array}$$

A Teaching Sequence Toward Mastery of Multiplication Word Problems

Objective 1: Solve two-step word problems, including multiplicative comparison. (Lesson 12)

Objective 2: Use multiplication, addition, or subtraction to solve multi-step word problems. (Lesson 13)