

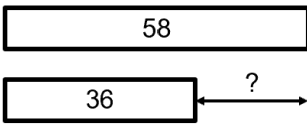
VARIED PRACTICE COMPANION GUIDE

By Jonathan Brendefur, Ph.D., and DMTI Associates
Developing Mathematical Thinking Institute (2025)

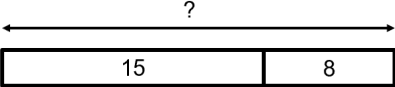
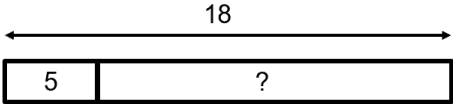
Classrooms in Action: Varied Practice Worksheet Examples

This document provides concrete examples of Varied Practice Worksheets. The following examples illustrate how varied practice supports representational fluency across grade levels. Each row presents a single mathematical idea across three representations: contextual (story), iconic (visual), and symbolic/language. Only one representation is provided in a classroom worksheet, requiring students to construct the others.

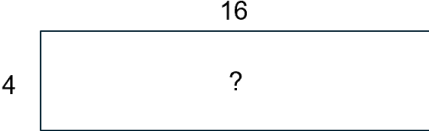
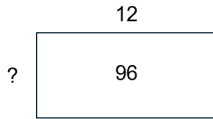
DMT Insight Example

Contextual (Story)	Iconic (Visual Model)	Symbolic / Mathematical Language
There are 58 green apples in one basket. And there are 36 red apples in another basket. How many more green apples are there than red apples?		$58 - 36 = 22$ "I compared 58 and 36 and found the difference to be 22."

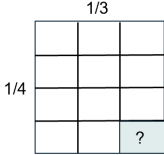
Grade 1 – Join and Part–Whole (Addition & Subtraction)

Contextual (Story)	Iconic (Visual Model)	Symbolic / Mathematical Language
There are 14 red apples on a tree. 9 more apples grow. How many apples are there now?		
		
		$24 + 13 = ?$ $24 + 13 = 37$ “I composed two items, 24 and 13, to make a total of 37.”
There are 18 ducks in the pond. 5 of the ducks are white and the rest are brown. How many brown ducks are in the pond?		
		
		$39 - 17 = ?$ $39 - 17 = 22$ “I decomposed the total, 39, to find the missing amount.”

Grade 3 – Multiplication and Division

Contextual (Story)	Iconic (Visual Model)	Symbolic / Mathematical Language
A gardener plants 15 rows of 6 flowers. How many flowers in all?		
		
		$7 \times 16 = ?$ $16 \times 7 = 112$ “I iterated the unit of 16 seven times to get 112.”
There are 48 students . Each van takes 6 students each. How many vans are needed?		
		
		$42 \div 6 = ?$ “I partitioned 42 into equal groups of 6 and found 7 groups.”

Grade 5 – Fractions (Operations and Applications)

Contextual (Story)	Iconic (Visual Model)	Symbolic / Mathematical Language
A baker made 24 buns and sold $\frac{3}{4}$ of them. How many buns were sold?		
		
A garden is $\frac{3}{5}$ of an acre, and $\frac{1}{4}$ of it is planted with vegetables. What fraction of the acre is vegetables?		
		
		$\frac{1}{2} \times \frac{2}{3} = ?$ $\frac{1}{2} \times \frac{2}{3} = \frac{1}{3}$ “I took one-half of two-thirds to find two-sixths or one-third.”