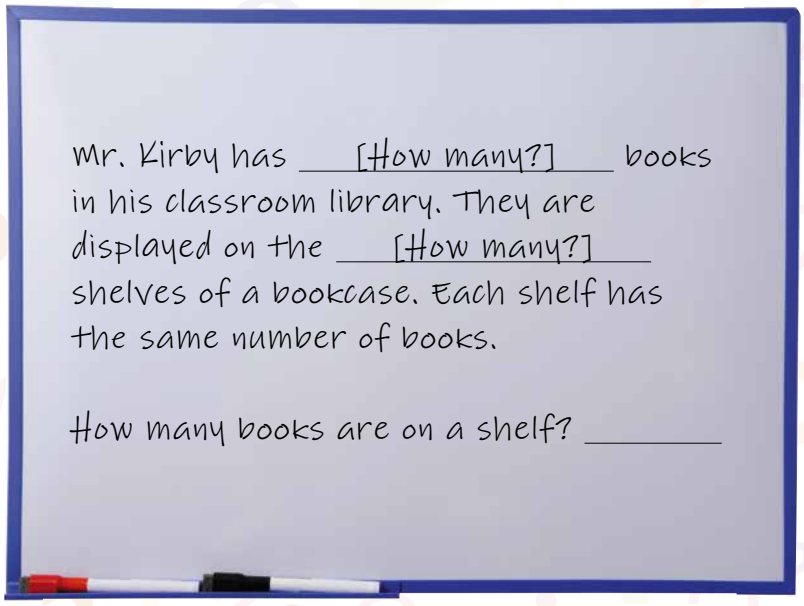
Jane Braddock Hunt

Problems without numbers



KYOSHINO

Every teacher has experienced students glossing over the details of a word problem, guessing what to do, and just performing calculations without reasoning. Leaving the numbers out of a word problem is one way to move students from responding with these quick solutions to deeply examining the problem's context.

To start, display a word problem with blanks where the numbers usually go. Then, ask students which numbers might be appropriate possibilities to fill the blanks. Student reasoning and sense making around possible number choices is substantial. For example, with the word problem above, students could consider whether the first number could be larger than the second. Must it be? Could they be equal? You might ask students in higher grades if it would make sense to fill either or both blanks with fractions or decimals.

Have students share their selected numbers and explanations in small groups. Encourage students to challenge one another's number choices and push to explain or justify their solutions in words, drawings, or with visual tools. As students work and discuss appropriate numbers, other worthwhile questions will arise. In response to the word problem in the figure, a fifth-grade student said, "I know the numbers had to match up because it says, 'Each shelf has the same number of books.'" This led to a rich discussion on what Jake may mean by "match up."

Remove the numbers on your next word problem and allow student insights to guide the conversation.

Elementary math consultant **Jane Braddock Hunt**, **jbhunt@juno.com**, is a retired middle school math teacher and coach with Fort Knox Community Schools in Fort Knox, Kentucky. She specializes in developing students' mathematical thinking and enjoys working with teachers in professional growth opportunities. Edited by **Martha Hildebrandt**, **mhildebrandt@chatham.edu**, who teaches undergraduate and graduate mathematics education and mathematics courses at Chatham University in Pittsburgh, Pennsylvania; and **Cathery Yeh**, **catheryy@uci.edu**, a graduate student in the School of Education at the University of California–Irvine. Submit your quick game, puzzle, activity, or instructional strategy along with suggestions for how teachers of different grade bands (K–1, 2–3, 4–6) can use this idea. Send submissions of no more than 250 words to this department by accessing **tcm.msubmit.net**. See detailed submission guidelines for all departments at **www.nctm.org/tcmdepartments**.

more4U

Download one of the free apps for your smartphone and scan this code to access more problems without numbers at **www.nctm.org/tcm073**.

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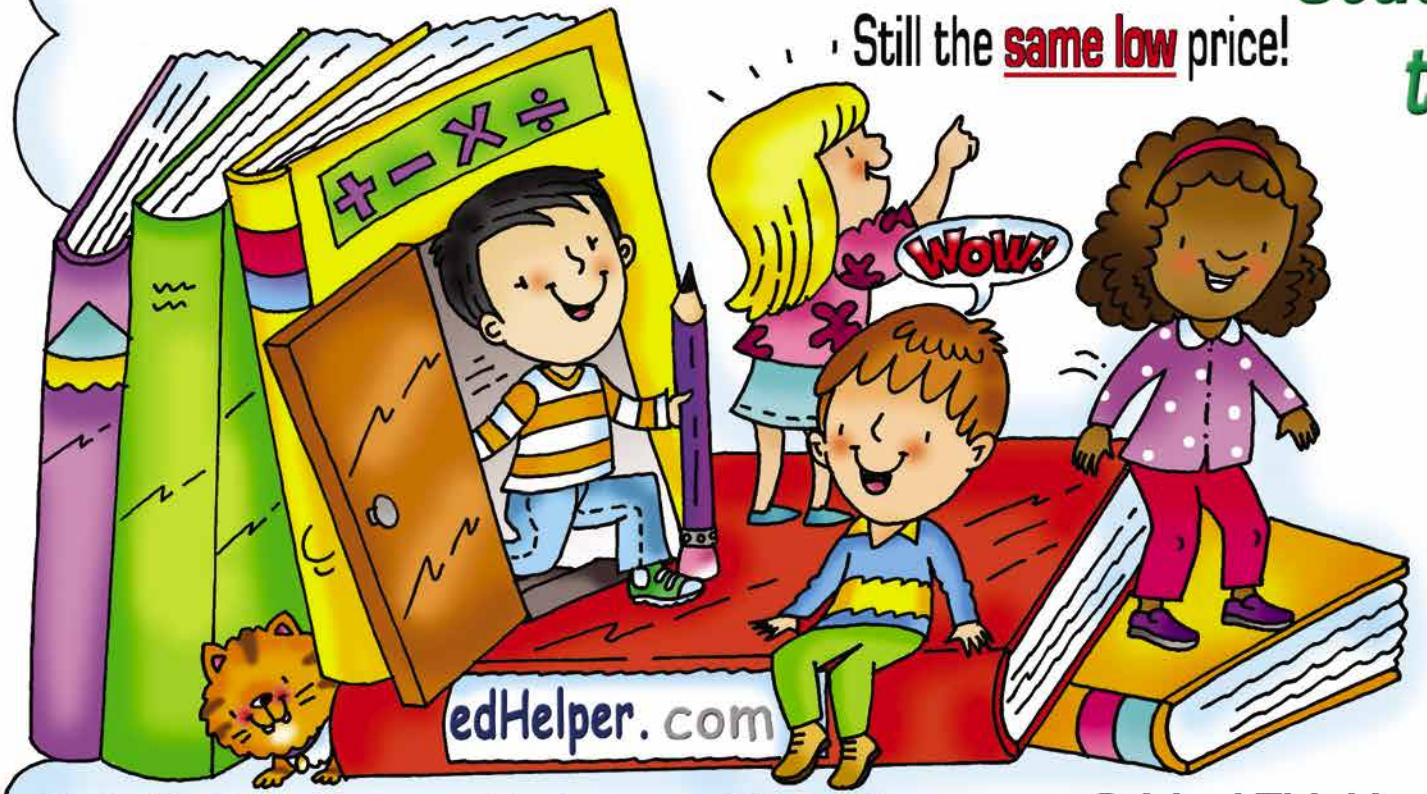

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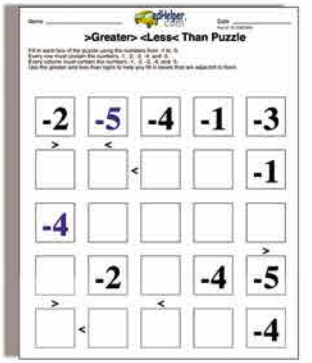
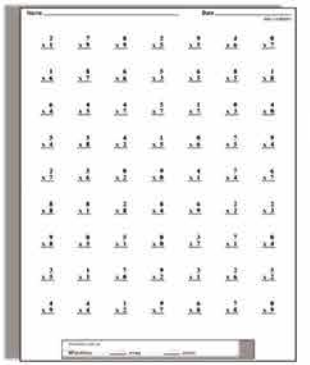
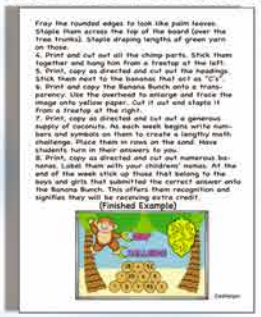


Daily Math

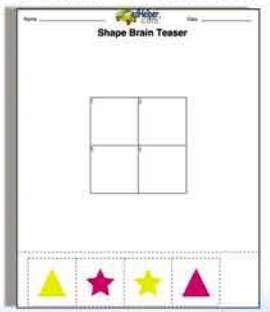


Bulletin Boards



Early Grades

Brain Teasers



Critical Thinking