

Is it fair?



FUSE/THINKSTOCK

"It's not fair!"

Every teacher has heard this cry, because even young children have an intuitive knowledge of equal sharing. Fair sharing—that is, separating cookies or sandwiches into equal-size portions—helps students construct the ideas of fractional parts in relation to the whole and knowledge of whole numbers to fractions.

Pose a fair-sharing task without providing instruction on how to solve it:

Suppose Mrs. Kominsky brought _____ sandwiches to be shared equally with _____ students. How much will each student get?

As students work, observe their strategies and explanations. If the problem is too difficult, give easier numbers and encourage students to represent the situation and to solve in ways that make sense to them. The same problem can be assigned across grade bands. The problem difficulty is based on the number choices and the use of models.

Kindergarten–grade 2

Problems with answers greater than one are easier. Children initially perform sharing tasks by distributing items one at a time. When this results in leftover pieces, they begin halving; therefore, start with two or four sharers:

- Twelve sandwiches for four children
- Five sandwiches for two children
- Six sandwiches for four children

Grades 3–5

Pose problems with answers that are mixed numbers or fractions less than one. Plan problems with equivalent answers to discuss whether these answers are the same. Represent student solutions with equations.

- Six sandwiches for eight children (Are $\frac{3}{4}$, $\frac{6}{8}$, and $1\frac{1}{2}$ plus $\frac{1}{4}$ all the same?)
- Five sandwiches for eight children ($5 \div 8 = \underline{\hspace{1cm}}$; $8 \times \underline{\hspace{1cm}} = 5$)

Cathery Yeh, catheryy@uci.edu, is a PhD candidate and course instructor at the University of California–Irvine. Edited by Martha Hildebrandt, mhildebrandt@chatham.edu, who teaches undergraduate and graduate mathematics education and mathematics courses at Chatham University in Pittsburgh, Pennsylvania; and by Theodore (Teddy) Chao, chao.160@osu.edu, an assistant professor of mathematics education at The Ohio State University in Columbus. 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 <http://tcm.msubmit.net>. See detailed submission guidelines for all departments at <http://www.nctm.org/tcmdepartments>.



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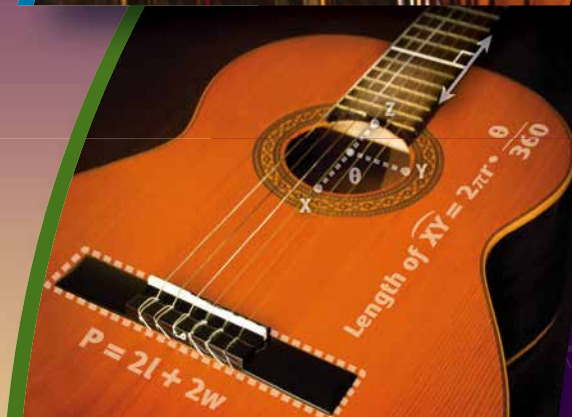
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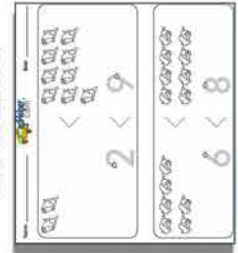


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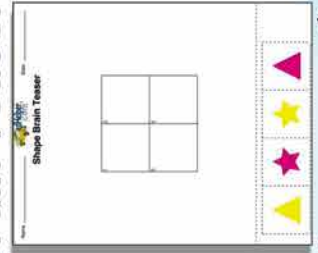
Bulletin Boards



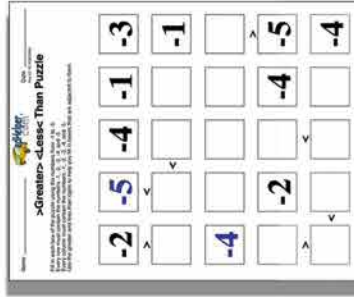
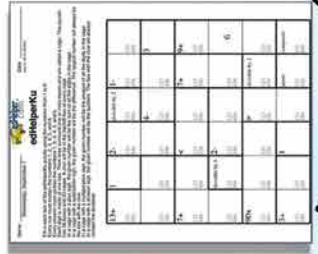
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