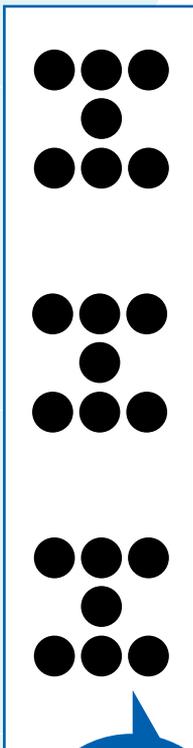


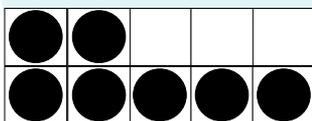
Quick images for all



Quick images are a fun, engaging way for students to compose and decompose visual numbers. Students apply their understanding of subitizing—the ability to recognize a number of items without counting—as they determine the quantity of the groups.

Number-sense routines

In this activity, students are shown an image for two seconds and then independently and mentally determine the number of dots. Have younger students try dot plates and ten frames to start decomposing groups of items. Have older students use images with “groups of” to give them opportunities to decompose numbers and develop their flexibility and fluency as they think creatively and make sense of what they see. To encourage students to use mathematically precise explanations to communicate their thinking, ask a few of the following questions:



- Who sees it another way? How?
- Give a number model to match the picture.
- What’s another number model?
- What is the same or different?

Modeling and making connections

To build on the standard quick image, use multiple images of different numbers. Have students justify how they determined the number of dots; discussion of the order of operations will come naturally. Focus on students’ mathematical sense making of the groups of images, and have them write numerical expressions to reflect how they see the visual representation.

Molly Rawding, mollyrawding@gmail.com, is a mathematics specialist and coach at Fiske Elementary School in Lexington, Massachusetts. She is interested in how teachers and students think about and do math in creative, flexible, fun ways. Edited by Theodore (Teddy) Chao, chao.160@osu.edu, an assistant professor of mathematics education at The Ohio State University in Columbus; and Imani Goffney, imanigoffney@gmail.com, an assistant professor at the University of Houston. 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>. Got to <http://www.nctm.org/WriteForTCM> to see detailed submission guidelines for all departments.

Owen:
I see six groups of three and three ones

Teacher:
Who sees it in another way?

Pippi:
I see three groups of seven.

Max:
I see three threes and three fours.



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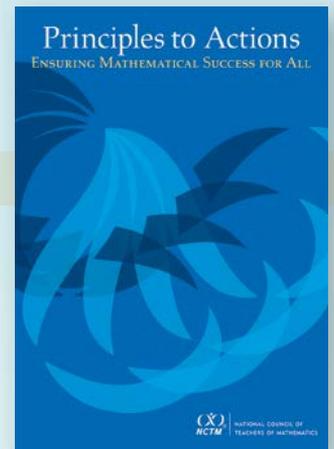
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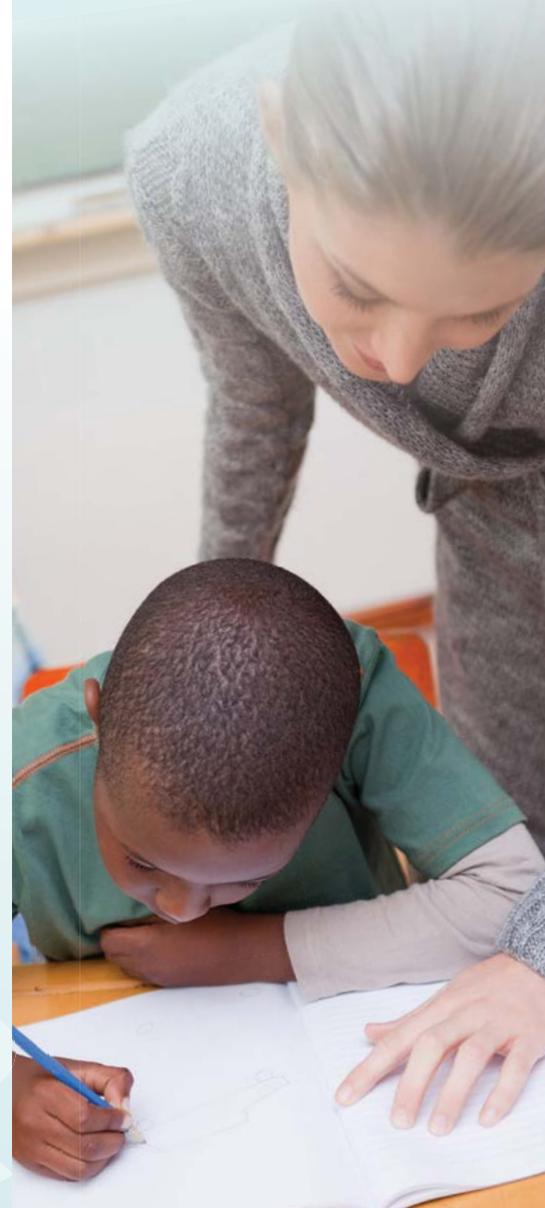
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