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Cox, Dana C.; Lo, Jane-Jane

Discuss similarity using visual intuition.

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Summary: The change in size from a smaller shape to a larger similar shape (or vice versa) is created through continuous proportional stretching or shrinking in every direction. Students cannot solve similarity tasks simply by iterating or partitioning a composed unit, strategies typically used on numerical proportional tasks. The transition to thinking proportionally is difficult for students and tremendously challenging for teachers to get across to students. After working with urban middle school students, the authors concluded that understanding similarity was difficult, in part, because opportunities to study proportional reasoning were missing from the mathematics curriculum. These opportunities involved studying the following: (1) simple and complex figures; (2) distortion and proportion; and (3) visual reasoning and more analytical strategies. In this article, the authors describe in depth two different types of classroom activities where these opportunities can arise for students: (1) categorization; and (2) construction. They also provide some specific recommendations about incorporating activities, thereby giving students opportunities to learn about similarity. (ERIC)

Classification: G40 C30

Keywords: middle school students; mathematics curriculum; class activities; learning activities; mathematics instruction

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