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Children's reasoning about data sets

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Children's reasoning about data sets

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Abstract: When reasoning about several numbers, past work has shown that adults mentally summarize data sets and reason based on set characteristics such as the mean and variance (Morris & Masnick, 2015). In the current study, we asked 10- and 12-year-old children to look at two columns of numbers (framed as the distances two golfers drove a golf ball, when doing so repeatedly), and to choose which golfer hit the ball farther. We examined reaction time, accuracy, and eye movements, in addition to self-reported strategy use. We found children reasoned using some of the same summary characteristics as adults, though less consistently, and had more varied strategy uses. For example, some children focused only on one number in each set, a pattern not seen in adults. These findings suggest that instruction building on these intuitions may help develop children's numerical cognition skills.