The Effect of Gender on Children’s Pattern-Making Skills
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Purpose
Our goal was to characterize children’s performance on early patterning tasks as a function of gender.

Background
Children’s early pattern skills, such as replicating, extending, and describing patterns, have been shown to correlate with later formal math and reading achievement (Kidd et al., 2014). Given previous mixed findings on gender differences in math (Hyde et al., 1990), we focused on gender differences using a specific patterning task.

Method
Participants: 10 male children (M age = 5.5 yrs.), and 10 female children (M age = 5.6 yrs.)
Task: Participants were first asked to solve and explain 1 baseline item with no instruction. Participants were then shown pairs of worked examples and similar solve items. They solved a total of 8 pattern abstraction items: 1 baseline item, 3 simple pattern items, and 4 complex pattern items.

Pattern Types
- Simple Patterns (n = 3) contain two different objects (e.g. comprised of small circles and big squares). Pattern structures were ABB, AAB, and AABB.
- Complex Patterns (n = 4) contain three different objects (e.g. small circle, big circle, small square). Pattern structure was ABC for all 4.

Results
- Baseline Performance: more females (50%) than males (20%) solved this item correctly.

Pattern Performance

Sample Responses

Simple Pattern

Complex Pattern

Conclusions
Results indicate that female children performed better than their male counterparts on early pattern abstraction tasks. However, results suggest that males may benefit as much, or more from instructional support and problem-solving.

Implications
There may be gender differences in children’s early math skills and their ability to learn these skills. Future research should further examine these differences using a variety of tasks and investigate why these differences exist and the influence they have on later mathematical achievement.

References