

Dear Parents and Teachers,

March 2018

We are writing to thank your school for their participation in our study during fall 2017. We recently finished our data collection and wanted to share some of our initial findings with you. The purpose of this study was to help us understand how early pattern skills are linked to other math skills, like counting, in preschool. This knowledge can be used to make decisions about appropriate activities that could provide a good foundation for math achievement.

For children with parental permission, we played games that measured pattern skills and math knowledge at the beginning of this preschool year. For the patterning measure, children were asked to copy and extend patterns (e.g., $\diamond \diamond \heartsuit \diamond \diamond \heartsuit$ “Can you finish the pattern just like I would?”). These are the tasks that children are most likely to encounter in preschool and tend to be easier. Children also completed more difficult patterning tasks, such as remaking a pattern using different materials. For example, the child might see the pattern “red heart, red heart, blue star” and be asked to make the same kind of pattern using green and yellow cubes. Our math assessment measured children’s basic math skills like counting, number comparison, number symbol knowledge (1,2,3,4,5), and shape knowledge, as well as more advanced number concepts, such as calculations with objects and large number comparisons. Our other tasks measured children’s skills including memory and reasoning ability.

Overall, we found that children’s patterning and math skills are significantly related, even after controlling for age and general abilities. Patterning skills are related to children’s knowledge about numbers, suggesting that noticing patterns might help children learn about numbers. This is exciting, because many children, parents, and teachers already enjoy working with patterns. We are now exploring if tutoring preschool children in patterning helps children better understand math overall.

Again, we greatly appreciate your school’s participation in our study.
Please feel free to contact us with any further questions.

Sincerely,

Bethany Rittle-Johnson, PhD
Vanderbilt University
bethany.rittle-johnson@vanderbilt.edu
615-322-8301