A board game that highlighted recursive base-10 patterns did not improve place value knowledge compared to a Chutes-and-Ladders style board game.

ECR Hub
EDU Core Research

#2400562: Leveraging Numerical Patterns in a Modified Board Game to Improve Numeracy Knowledge

Game Board Highlighting Patterns

(treatment condition)

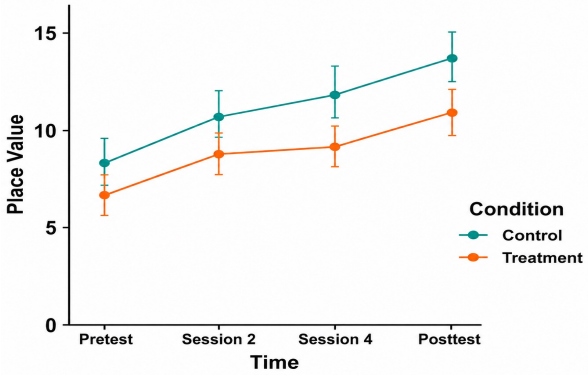
How are the numbers in this row the same as the numbers in the last row?

Game Board Mimicking Chutes & Ladders

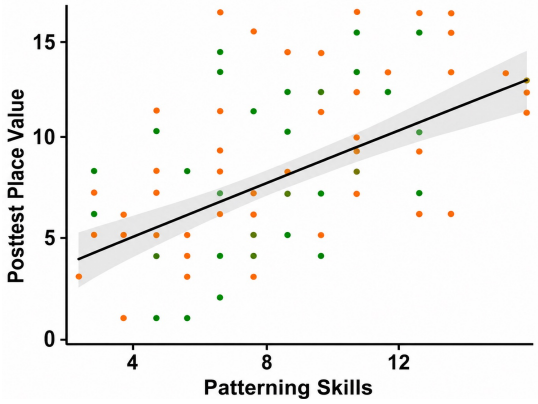
(control condition)

What number are you on?

Number board play improved place value knowledge, but improvements were not larger when the board highlighted numerical patterns.



Patterning skill (i.e., recognizing and extending repeating and growing patterns) significantly predicted learning gains.



Method

Experimental Design | Game Play

- Collected measures of place value, patterning and encoding from 96 kindergarteners (ages 5–7) from Greater Nashville and Boston.
- Pretest-posttest experimental design: 4 gameplay sessions with patterning lens (treatment) or control conditions.
- Analyzed place value scores by condition, pretest patterning and posttest encoding with ANCOVA, moderation, and mediation models.

Challenge Overcome

Study 2 in Progress!!

Conducting a **follow-up study** with an active control condition (same prompts in a card game). In both conditions, we increased use of question cards and scaffolding.

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