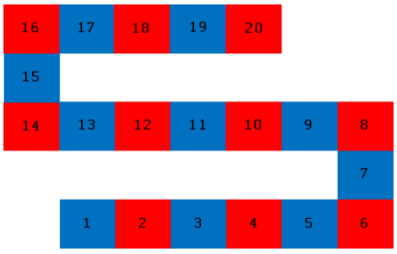
Linear Board Games-How to Play and Why

- Math is important to future success, it has been shown to take 10 years of solid math instruction to be successful in algebra
- Math language can be key to literacy and reading comprehension
  - For example, in Goldilocks and the Three Bears math components include:
    - Numbers
    - Size comparison
    - Ordering (small, medium, big or cold, warm, hot)
    - Size correspondence (small bowl for small bear, medium bed for medium bear)
    - Patterning (repeated phrases of items being too big, just right)
- Research by Dr. Robert Siegler has shown that playing certain board games has a positive impact on children's ability to:
  - Name numbers
  - Count (by rote, ie: memorization of the sequence of numbers 1-10)
  - Understand the rank order of numbers (placing the numbers 1-10 in the correct sequence)
  - Understand a number's magnitude (sense of quantity and what each number represents)
  - Understand number line estimation (placement of numbers on a blank number line, the understanding that 2 would be closer to 0 than to 10)
  - Learn answers to arithmetic problems
- Key findings
  - The game board must be linear, circular games did not give the same results
  - Follow certain guidelines in game creation
    - Spaces must be same size
    - Numbers posted on spaces
    - Game must be linear and have a clear starting and ending point
- How to play
  - Counting on from number on space (instead of counting 1, 2 from 8; say eight then count on-nine, ten)
  - If creating your own game board, write the numbers on the spaces
  - Ignore the ladders and the slides, counting will not make sense when going up/down multiple rows
- Adapt a commercial game (Chutes and Ladders) or Make Your Own!
  - Only play to a certain point (stop at the 20 space instead of going to 100)
  - Share the same marker to make the game faster and to encourage cooperative play rather than competitive play
  - If your child is able to easily count on 2 spaces, then go up to 3 or 4
  - If the commercial game is too visually cluttered for your child, make your own using colored squares going to 10 or 20 (samples below)



Reference: Siegler, Robert S & Ramani, Geetha B. *Playing Linear Number Board Games – But Not Circular Ones – Improves Low-Income Preschoolers' Numerical Understanding.* Journal of Educational Psychology 2009, Vol. 101, No. 3, 545-560