WMC Conference 2017
Number Relationship Activities

Improving Learners’ Mental Representation

~1 minute activity
Construct the tape measure while you wait 😊
Leslie McDougall, graphic designer
Will Bengtson, content tech
Haley Bengtson, content tech
Where do you think when you see a puzzle?

What do you know and notice? What processes do you use? What informs each step as you complete a puzzle?
Number line estimation
Sample Estimation Research

Playing Linear Number Board Games—But Not Circular Ones—Improves Low-Income Preschoolers’ Numerical Understanding

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A theoretical analysis of the development of numerical representations indicated that playing linear number board games should enhance preschoolers’ numerical knowledge and ability to acquire new numerical knowledge. The effect on knowledge of numerical magnitudes was predicted to be larger when

Reducing the gap in numerical knowledge between low- and middle-income preschoolers

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Reducing the gap in numerical knowledge between low- and middle-income preschoolers. The gap in numerical knowledge is complex and may be due to a variety of factors including the preschoolers’ socioeconomic status. Numerical knowledge is essential for future mathematical learning, and it is important to identify interventions that can help reduce this gap.

Cognitive processes of numerical estimation in children

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Cognitive processes of numerical estimation in children. Numerical estimation is a fundamental skill that involves approximating quantities, differences, and products. The goal of the current study was to examine the cognitive processes involved in numerical estimation in children.

The relationship between the shape of the mental number line and familiarity with numbers in 5- to 9-year-old children: Evidence for a segmented linear model

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The relationship between the shape of the mental number line and familiarity with numbers in 5- to 9-year-old children: Evidence for a segmented linear model. The mental number line is a mental representation of numbers that is used for various cognitive tasks. The shape of the mental number line can be influenced by factors such as age, culture, and the familiarity with numbers.
This activity is an adaptation of the game found by Siegler et al to close the achievement gap.

What are its strengths?

What challenges may it hold?
Broken Number Line Puzzles
How do you know you are on the right path?
What clues or evidence do you call on to verify that you put your pieces together correctly?
Naïve Learners

What evidence reinforces an incorrect solution, if used alone?
Cut up the number line in a different way.
Did you learn anything?

How do you capture evidence of learning?
Practice with Self Check System
Can you transfer your learning?

How do you extend learning?