

# Seeing the Brilliance of Children's Thinking through Counting

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# Grounding

What is your dream for the students you serve...

- How they view themselves?
- How they view others?
- How they view math?

What classroom experiences do you dream for children?

# Counting Principles

There is an **ordered sequence of counting numbers**, and numbers are always assigned to items in a collection in the same order starting with one. There is structure in how the sequence builds/repeats (base 10).

**The one-to-one principle.** Exactly one number from the counting sequence is assigned to each item in the collection.

**The cardinal principle.** The last number in the counting sequence assigned to the collection represents the number of objects in the collection.

## Hazel, age 3 ½

What does Hazel know and understand?



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Carpenter, Franke, Johnson, Turrou, Wager (2016). *Young Children's Mathematics*, Portland, ME: Heinemann.

# Counting Collections



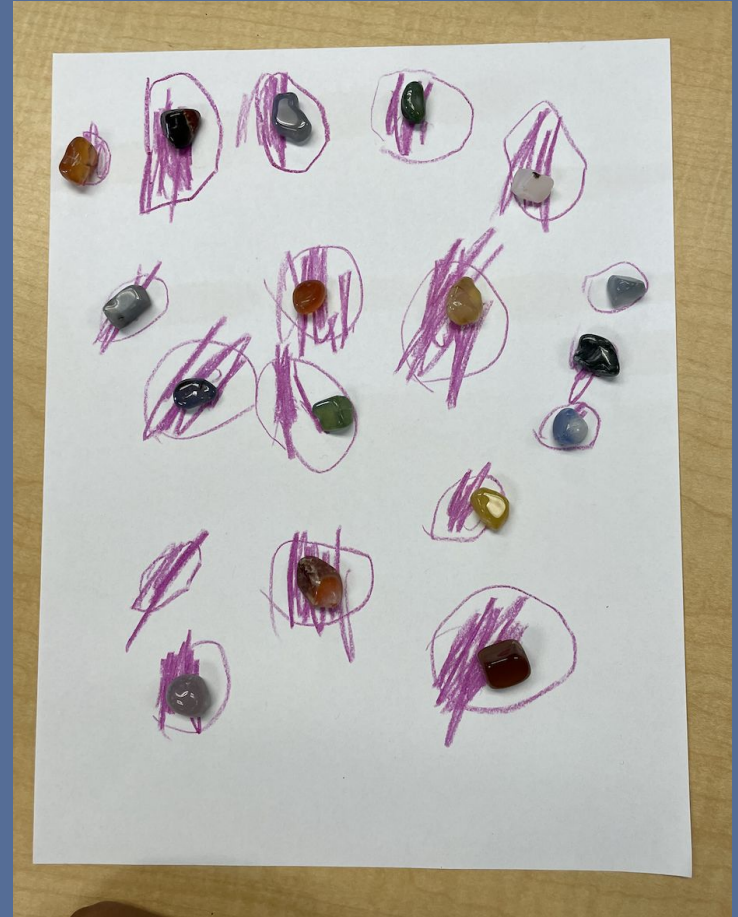
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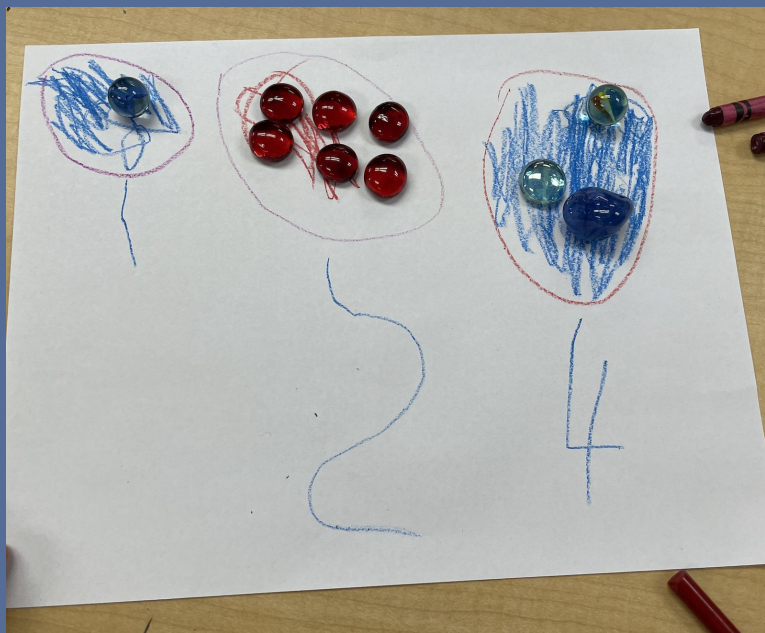


# Student brilliance...

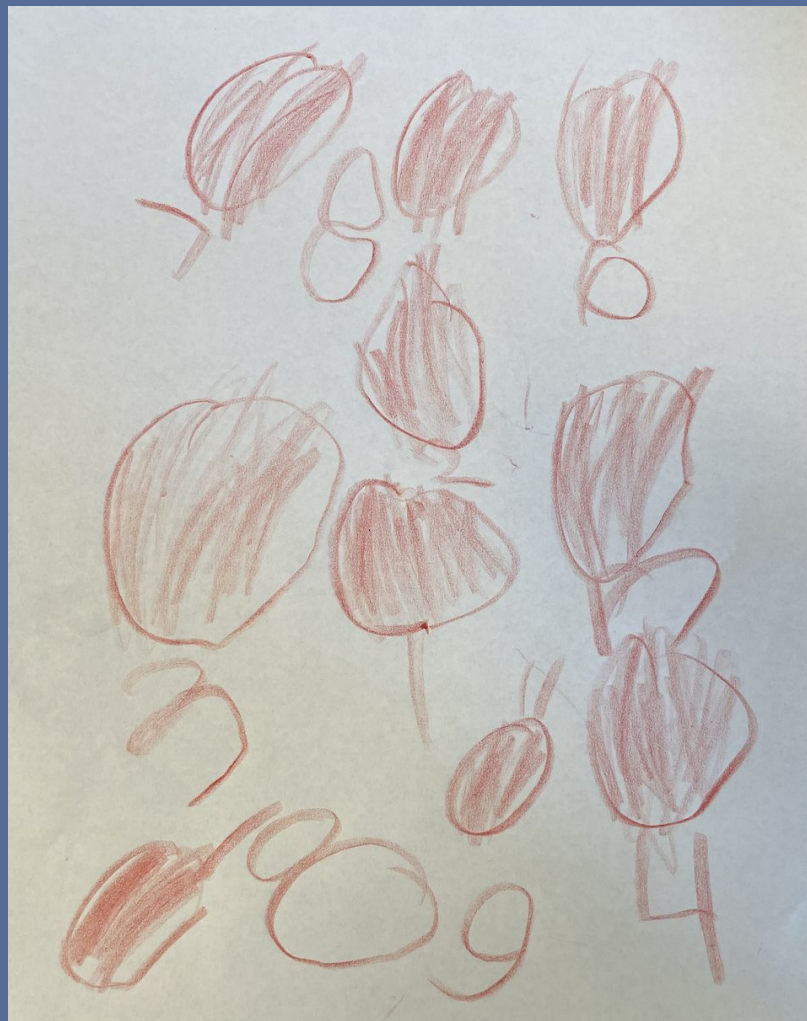


TK, first experience counting collections





TK, first experience counting collections













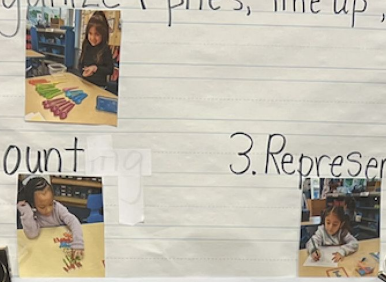






Counting Collections

1. Organize (piles, line up, sort)
2. Count
3. Represent

Three small photographs are pinned to the whiteboard. The top photo shows a child at a table with colorful counting blocks. The middle photo shows a child counting items on a table. The bottom photo shows a child counting items on a table.

# Extending Counting to Solve Problems

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# Dominik counts people

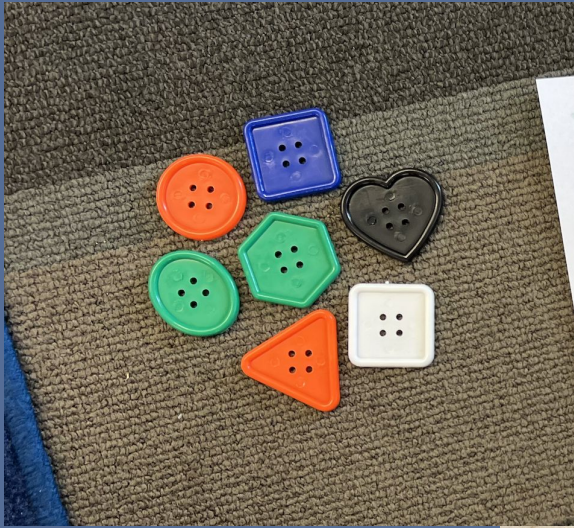


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# Dominik shares people



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## Reflecting...

Why might teachers do “counting collections” in their classrooms? What does this activity support in terms of student thinking and participation in mathematics?

What can we learn about students if we zoom in...

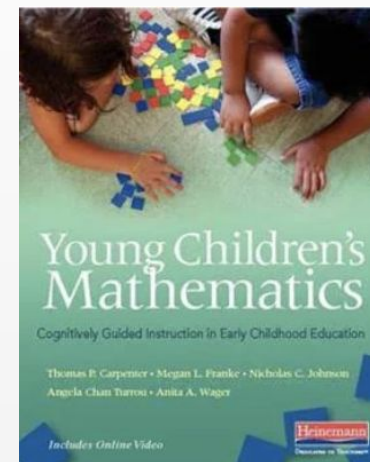
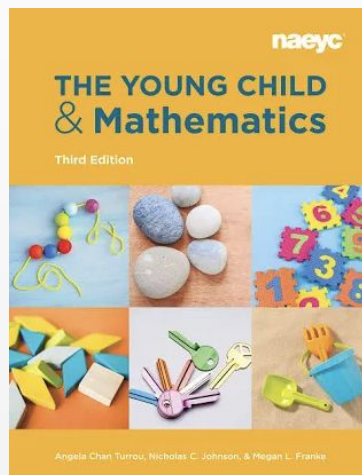
- Social
- Organization and grouping
- Counting
- Mathematical reasoning
- Communication

# Thank you!

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