
COUNTING COLLECTIONS KINDERGARTEN TO GR.7

November 21st, 2017 - 3:30 p.m. - 5:00 p.m.
REC 304, Surrey, BC

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What is the LEARNING?

Potential Curricular Content:

Subitizing	Stable order count
Cardinality	One-to-one correspondence
Magnitude - relative size	Name symbols relationship
Counting Forward/ Counting On	Skip counting
Place Value - Base 10 structure	Flexible counting strategies
Flexible addition strategies	Connections between multiplication & addition
Multiplicative thinking	Connecting multiplication to division
Fractions	Fractions/Decimals/Percents

Potential Curricular Competencies:

Note: You would not be assessing all of these. Instead, based on what you know about your students, you would be selective.

- **Reasoning and Analyzing** through estimating and developing mental math strategies and abilities to make sense of quantities
 - **Understanding and Solving** through using multiple strategies
 - **Communicating and Representing** their thinking not only orally but through concrete materials, pictorial representations, and symbolically
 - **Connecting and Reflecting** through visualizing and describing mathematical concepts, connecting mathematical concepts, and sharing and reflecting upon their thinking
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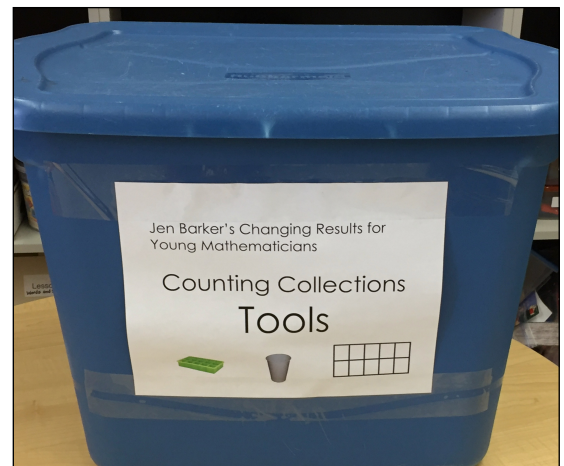
How do I get started?

Setting up the environment:

- Gather items - ask your community for sets of items (bread clips, bottle caps, puzzle pieces, buttons, beads, bulk foods), items in nature (shells), materials in and around your classroom (blocks, unifix cubes), inexpensive items from the dollar store (craft sticks, jewels)
- Build kits that make sense for your group of students e.g., (10 – 20), (21 – 50), (51 – 100), (100 - 200), (200 - 500) and/or items that have multiple features and can be counted in different ways (e.g., lego - counting the studs, dominos - counting the dots, shapes - counting the vertices, animals - counting the legs, buttons - holes), sets of unopened items or images of these (card decks, packages of candy, sticker sets)
- Tools: ice cube trays, ten frames, hands, feet, scarf holders, coffee filter, cupcake liners, plates, cups, etc.
- Determine where you will store your items so that students can access the collections, tools, and materials they will need to record their work.
- Is there a children's literature book you might want to read aloud to launch with
- Determine where your class will gather for mini-lessons, and sharing.



Do not put the range of items on the cover of each of your kits, as this takes away a learning opportunity for your students. Instead, colour code your kits. Example: All the collections in the purple kit have a purple sticker.



It is important .

Potential Mini Lessons - Being responsive - I've been noticing... and I'm wondering...

- How do we work respectfully with a partner?
- I don't know how to write this number. What can help me?
- How could we count?
- How might we estimate?
- What is a range?
- How could we use this new tool?
- Reflecting on representations of how groups counted. How might using different coloured markers be helpful?
- What can we use to help us skip count beyond what we know? E.g., Hundreds charts and highlighters
- How many tens are in your collection?
- How many more do you need to have 100? 500? 1000?
- What if you lost _____ from your collection? How many would you have then?
- How does organizing collections in groups of and/or arrays help us with think about multiplication? And division?
- How might we use different colours to help us organize our representation of how we counted?
- How might I use multiplication facts I know to help me answer questions I don't know?
- How might we describe how you counted your collection through the lens of division?
- How many different related equations can we record that show how we counted our collections?
- How might we use our collections to think about factors and multiples?
- How might we count your collections through the lens of fractions of a set?
- If 100 items were considered to be one whole, what fraction do we have? What if 10 items were considered a whole?
- Later in the year, provide students with a photograph of a collection they counted, but not the total. Ask students to write a number sentence that matches the organization of their previously counted collection.

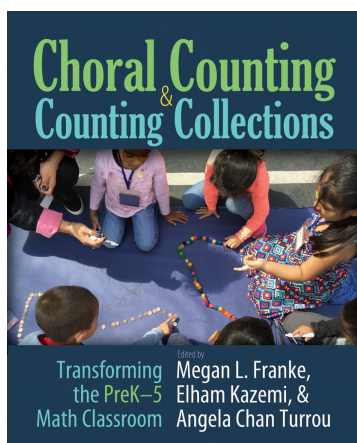
The Role of the Teacher:

- setting up the environment including, considering:
 - Where can the students count?
 - What kind of organization system do you want for your materials?
 - What is a productive noise level? Be prepared to accept more noise in return for highly engaged and mathematically productive discussions
 - What do students do when they are done counting and recording? Do they count the same collection in a different way? Or do they clean up and get a new collection?
 - What will clean up look like? How will it be structured?
 - determining the mini-lesson / framing the task
 - establishing a safe, emotional environment
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- helping students form productive partnerships so they can effectively problem-solve as they work together
 - deciding which conversations to bring back to the group that have the potential to enrich and extend student thinking

Our goal is to help students articulate what they are doing, consider how it is working for them, and possibly refine or extend their strategy in a way that builds on what they can already do. We do this by:

- How's it going?
 - What are you thinking about?
 - What are you working on figuring out?
 - What are you wondering about?
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- Notice the strategies and name them.
 - Consider how you will nudge their learning forward.



#countingcollections

LRS #179991
