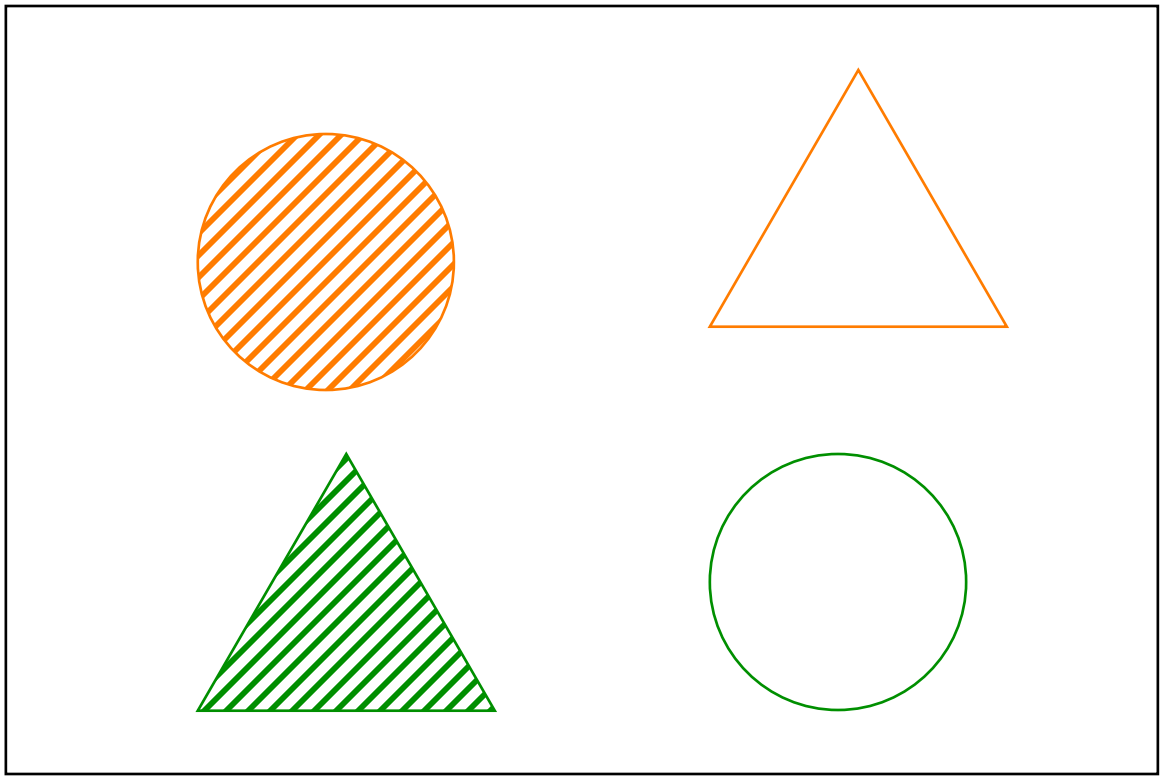
Welcome to Content Session 1

Sets: Sorting It All Out

SAME & DifFerEnT

Which of the figures below are the same?



Sorting Stuff

& sorting again

Ways to Sort a Collection

- Binary sort – something & not something
- Color
- Shape
- Material type
- Use
- Size - length, weight, etc
- Texture
- & …

In open sorts, we often mix schemes …

Shoe Sort

What kinds of shoes are we wearing today?

How could we figure it out?

Shoe Sort

Put one shoe in the collection.

How could we describe these shoes?

How do we want to sort these shoes?

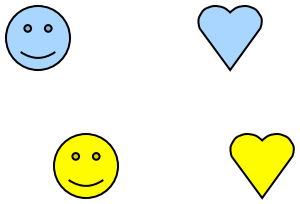
Shoe Sort

Put your shoe in its appropriate category.

What can we say about our shoes from looking at this object graph?

What is mathematical about sorting?

What are the Big Ideas about Sets & Sorting?

Topic	Big Ideas	Examples
Sets & Sorting 	•**Attributes** can be used to **sort** collections into sets. •The same collection can be **sorted** in different ways. •Sets can be **compared** and **ordered**.	•Color, size, shape, type of object, etc. •Red bears vs. blue bears; big bears vs. little bears •"There are more red bears than blue bears." (compare); small red bears, medium red bears, large red bears (order)

Stop & Reflect

Video Analysis

Focus on the Child: Sets

What evidence of children's thinking can you see or hear?

"Sorting Rocks"

What development in thinking do you notice between preschoolers & kindergarteners?

"Sorting Commercial Manipulatives"

Are these materials easier or harder to sort than the rocks?

Development of Thinking about Sets & Sorting

At all ages, children classify intuitively to make sense of their world.

By 2 weeks of age, infants distinguish between objects they suck and those they do not.

By 2 years, toddlers form sets with objects that are similar.

By age 4, children can sort objects according to a given attribute and form categories.

- *They may switch attributes during open sorting.*

By age 6, children can independently sort by a single attribute and re-classify by different attributes.

Children aged 5, 6 & 7 are still building their understanding of overlapping sets and hierarchical categories.

3 types of knowledge

Physical

What we learn through direct experience of the physical world, like gravity or texture.

Logico-mathematical

What we learn by constructing abstract ideas, such as parts of speech, biological classifications, or numbers.

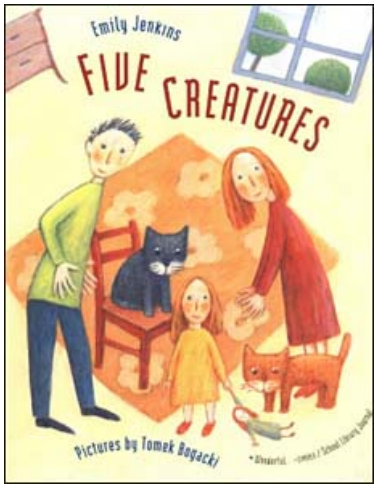
Social

What we learn only from other people, such as our language or manners.

Video Analysis

Research Lesson:

People Sort



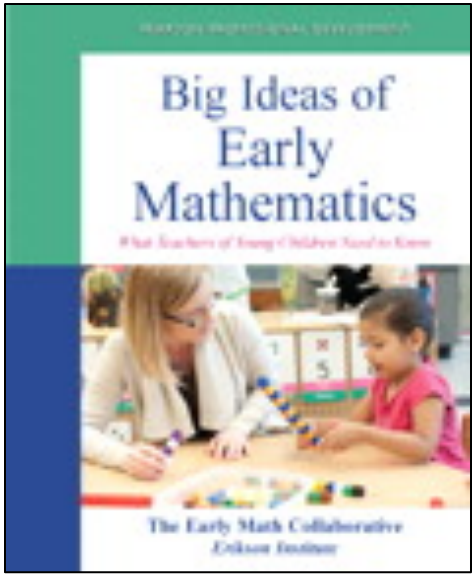
What evidence do you see
of the children's thinking & understanding?

What evidence do you see
of the teacher's thinking & planning?

How might this experience connect to other math?

Stop & Reflect

What are the *Big Ideas* of Early Mathematics?



Walk through the book

Each chapter focuses on different "chunk" of content.

Each chapter has similar structure.

- math snapshots – examples from a preschool or kindergarten classroom
- Big Ideas explored one by one
- implications
- tables
- books