BIG Ideas—Beyond "I Can"
Post Conference Day for Primary Grades
Mathematics Intervention Teacher Leaders
March 9, 2016, Lexington, KY

Guiding Questions

- What are BIG Ideas and why do they matter?
- How do BIG Ideas about number and numeration connect with the Kentucky Academic Standards for Mathematics and the Kentucky Early Childhood Standards?
- How might we intentionally assess and advance student attainment of essential understandings related to BIG Ideas of number and numeration, leading to mastery of the Standards?

9:00 a.m.	Introduction: Mathematics Knowledge for Teaching, Standards Coherence, and Big Ideas	Alice Gabbard
9:30 a.m.	N&N (Number and Numeration) Big Idea #1) *Number is an extension of more basic ideas about relationships and quantities.*	Beth Meiman and Dee Crescitelli
10:20 a.m.	N&N Big Idea #2) *The selection of a unit makes it possible to use numbers in comparing quantities.*	Kris Jarboe and Lisa Riggs
11:10 a.m.	LUNCH	
12:10 p.m.	N&N Big Idea #3) *Meaningful counting integrates different aspects of number and sets, such as sequence, order, one-to-one correspondence, ordinality, and cardinality.*	Gwen Morgan and Selisa Adams
1:00 p.m.	N&N Big Idea #4) *Numbers are abstract concepts.*	Julie Adams
1:50 p.m.	N&N Big Idea #5) *A base-ten positional number system is an efficient way to represent numbers in writing.*	Cindy Aossey
2:40 p.m.	Mathematics Teaching Practice 1: Establish Mathematics Goals to Focus Learning	Alice Gabbard
3:00 p.m.	Adjourn	

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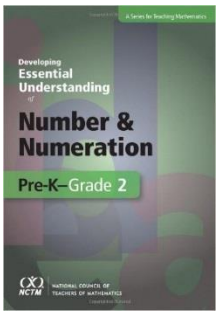

N&N Big Idea #1) *Number is an extension of more basic ideas about relationships between quantities.*
EU (Essential Understanding) 1a. Quantities can be compared without assigning numerical values to them.
EU 1b. Physical objects are not in themselves quantities. All quantitative comparisons involve selecting particular attributes of objects or materials to compare.
EU 1c. The relation between one quantity and another quantity can be an equality or inequality relation.
EU 1d. Two important properties of equality and order relations are conservation and transitivity.
EU 1.e. The equality relation between two quantities remains unchanged when one or both quantities are decomposed into parts and when one of the quantities is combined with another quantity to form a larger quantity.

N&N Big Idea #2) *The selection of a unit makes it possible to use numbers in comparing quantities.*
EU 2a. Using numbers to describe relationships between or among quantities depends on identifying a unit.
EU 2b. The size of a unit determines the number of times that it must be iterated to count or measure a quantity.
EU 2c. Quantities represented by numbers can be decomposed (or composed) into part-whole relationships

N&N Big Idea #3) *Meaningful counting integrates different aspects of number and sets, such as sequence, order, one-to-one correspondence, ordinality, and cardinality.*
EU 3a. The number-word sequence, combines with the order inherent in the natural numbers, can be used as a foundation for counting.
EU 3b. Counting includes one-to-one correspondence, regardless of the kind of objects in the set and the order in which they are counted.
EU 3c. Counting includes cardinality and ordinality of sets of objects.
EU 3d. Counting strategies are based on order and hierarchical inclusion of numbers.

N&N Big Idea #4) *Numbers are abstract concepts.*
EU 4a. Patterns in the number-word sequence provide a foundation for the abstract number concept.
EU 4b. The number sequence is infinite.
EU 4c. Number symbols are representations of abstract mental objects.

N&N Big Idea #5) *A base-ten positional number system is an efficient way to represent numbers in writing.*
EU 5a. Ten different digits can be used and sequenced to express any whole number.
EU 5b. Our base-ten number system allows forming a new place-value unit by grouping ten of the previous place-value units, and this process can be iterated to obtain larger and larger place value units.
EU 5c. The value of a digit in a written numeral depends on its place, or position, in a number.