Rational Counting-Concepts and Skills*

*Rational Counting is also described as *Counting with Understanding* or *Enumeration.*

Concepts and Skills are not necessarily sequential. Children may master one counting "rule" such as Order Irrelevance, yet not demonstrate understanding of Counting Dissimilar Objects, for example.

Skills in the shaded boxes are commonly associated with children of kindergarten age and above. Some preschoolers will demonstrate these skills and they are included to support the progression of number skills.

Skill or Concepts	Associated Activities and Notes:
Recognizes and uses number names with growing accuracy	
Can instantly recognize numbers of small groups of objects without counting [Subitizing]- To What Number?	
When reciting counting words and pointing [or other gestures], words and gestures are synchronous [1:1 correspondence] Accuracy varies.	
Demonstrates understanding that one object can have only one number name [1:1 correspondence]	
Responds to questions of quantity (such as "Give me 3 blocks" by counting and producing groups.	
Demonstrates counting strategies, such as moving an object to one side after it is counted, lining up objects, etc. Accuracy varies.	
Demonstrates understanding that there is a correct order for the number word list that does not vary. [Stable Order Rule]	
Can Count small groups of dissimilar objects [Abstraction Rule]	
Can do simple comparisons of groups (more, less, equal)	
Demonstrates with words or objects an understanding that the last counting word in a group represents the whole group. [Cardinality]	

UNIT 2- Where's the Math- Teacher Supports for Unit Concepts

Can begin counting at any point in a group [Order Irrelevance rule]	
Counts on to number groups when counting, [does not start over at 1 each time].	
Can "hold" a number in memory and use that skill in games, comparisons, or responding to quantity questions [Conservation Rule]	
Demonstrates understanding that the amount of objects in a group does not change when the same group is re-counted. [Stability of Sets]	

Sources: Developing Number Concepts by K Richardson; Helping Children Learn Mathematics by Reys, et al; Learning Trajectories by D. Clements; B. Hatcher.