

Additive Reasoning

Grade One HLC

Understand and use number values and sequences to 120 (cross century, cross decade) Add and subtract numbers within 100 using place value understanding (in context, across multiple problem situations, and in equations)

Grade One HLC Progressions

Students must use models to build understanding of the HLC and interact with a variety of contexts.

Rote Oral Count Sequence Teachers need to purposefully choose a variety of number ranges including opportunities to practice teen numbers, crossing decades, and centuries. This information is often best collected in student interviews checking on clusters of 5 numbers at various starting points.

Count Forward (FWD) and Backward (BWD) within the range 1-30 starting at any number	Count FWD and BWD within the range	Count FWD and BWD within the range	Count FWD and BWD within the range
	1-50 starting at any number	1-100 starting at any number	1-120 starting at any number
		Skip count by 10s FWD and BWD within the range 1-100 on decade	Skip count by 10s FWD and BWD within the range 1-120 starting at any number

Subitizing (immediate recognition of quantity - ten and twenty frames, fingers, regular dot patterns)

Conceptually subitize within 20 (quickly composing greater quantities by seeing and combining smaller parts and using groups of ten) This connects to an understanding of part/part/total and/or decomposing and recomposing.

<u>Examples</u> of quick images to support conceptual subitizing







Symbolic Notation Reversals in numeral formation are expected at this developmental stage, but transpositions (eg., 71 for 17) are an indicator of a misconception and may interfere with representing quantities.

Identify and write numerals within 20	Identify and write numerals within 100	Identify and write numerals within 120



Counting Collections to Build Place Value Understanding

Students must use models to build understanding along this trajectory and interact with a variety of contexts for counting. Models should support students developing understanding of the magnitude of digits in their place values. Students are given amounts of discrete objects to determine the total quantity. All of the skills noted below are observable during a Counting Collection. Each understanding might develop at different times for each number range. **Students must use models to build understanding of unitizing: 10 ones = 1 ten; 10 tens = 1 hundred.**

Count objects within 20	Count objects within 50	Count objects within 100	Count objects within 120
	(using groups of ten)	(using groups of ten)	(using groups of ten)

The following understandings develop at different times for each number range. Counting Collections allow students to:

-Show 1:1 correspondence (each item gets one count)

-Organize (keep track of what's been counted and what still needs to be counted without prompting)

-Use tracking and recording methods (organizing, grouping and recording)

-Use Stable order (correct number word sequence)

-Show conservation of numbers (quantity is the same regardless of arrangement - ex: objects lined up, then spread out, organized by 10 or not organized)





Ordering & Magnitude





Operations: Addition and Subtraction Students must use models to build understanding along this trajectory and interact with a variety of contexts for addition and subtraction. Models should support students developing understanding of the magnitude of digits in their place values.

Composition, Decomposition Students must use models to build understanding and flexibility when composing and decomposing quantities.



Properties of Addition These properties are investigated throughout the year with different numbers and problem situations. *The sequence of how the properties appear below does not suggest the order in which to explore them.* Many times the properties can be explored simultaneously.





Grade One HLC Progressions

Place Value - Building Understanding Students must use models to build understanding along this trajectory and interact with a variety of contexts for addition and subtraction. Models should support students developing understanding of the magnitude of digits in their place values.





Use Place Value to compose, decompose and recompose

Decompose both numbers to add and subtract, decompose one number to add and subtract, recompose like units, missing addend, compensation. There is an explicit connection between counting and addition (i.e. counting 10 more is the same as adding 10, counting back 10 is the same as subtracting 10).

Models & Strategies for Addition





Models & Strategies for Subtraction

