Appendix A: Math Terms

Term	Definition	Example
1-9 sequence when counting	Recognize and use the 1- 9 sequence in the one's place when counting beyond 10	counting from 20 as 21, 22, 23, 24 and counting from 50 as 51, 52, 53, 54
associativity	Understanding that when addends are grouped in different ways, the sum is always the same	3 + (9 + 7) = (3 + 9) + 7
compensation	The deeper understanding that there are multiple ways to generate a sum to make a simpler problem to solve (unit 3)	37 + 53 = 90 40 + 50 =90
constant difference as equivalence	Understanding that adjusting both numbers in a subtraction problem (add or subtract) by the same amount is equivalent to the original problem; this creates a simpler problem to solve; the open number line is used as a model for this strategy	1226 – 189 = 1237 – 200 (added 11 to each number to make the subtrahend a friendly number)
counting forward and backward	Use counting forward and backward from a number as an addition or subtracting strategy	3 + 5 is solved by starting at 3 and count 4, 5, 6, 7, 8 and reaching the solution as 8
doubles	Understanding the relationship between doubling a number and skip counting by twos; it is the foundation for understanding even and odd numbers	7 + 7 = 2 + 2 + 2 + 2 + 2 + 2 + 2
equivalence	Understanding that an amount can be represented in different ways and the value of the amount remains the same	7 + 8 = 10 + 5 = 5 + 2 + 5 + 3 = 15
five-structure	Recognizing the structure of five as a unit and using it as a strategy for counting, comparing and solving problems	6 + 7 = 5 + 1 + 5 + 2
generalized use of a repertoire of strategies for addition and subtraction	Being able to choose a variety of strategies to add and subtract based upon the numbers within the problem	adding vs. removing, compensation, constant difference, keeping one addend whole and taking leaps of ten, regrouping, taking leaps of ten back and adjusting
hierarchical inclusion	The idea that numbers build exactly by one each time and that they nest within each other by this amount	be able to infer when one is removed from 6, 5 remain or when one is added to 6, there are 7

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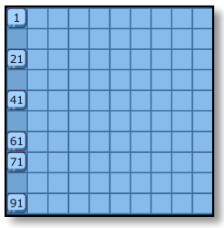
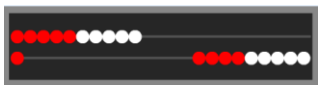
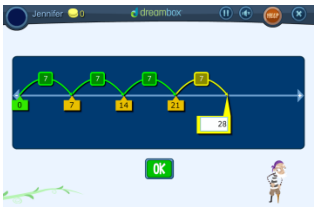
hundreds chart	Graphic organizer for numbers 1-100. It contains 10 rows and 10 columns	
keeping one addend whole moving to a landmark number	The strategy of beginning with a whole addend and moving to a landmark number to add; the open number line is used as a model for this strategy	98 + 37 = 100 + 35 98 is close to 100, so we use compensation to add to create a friendlier problem with a landmark number
keeping one addend whole taking leaps of ten	The strategy of keeping one number whole and adding groups of 10; or taking leaps of 10 on the number line; the open number line is used as a model for this strategy	28 + 44 = 44 + 10 + 10 + 8 = 72 or 28 + 44 = 44 + 20 + 6 + 2
magnitude	The ability to understand and compare two sets as more or less without counting	8 > 2
making ten	The strategy of using making tens to solve a problem	9 + 7 = 10 + 6 = 16
math rack	A tool comprised of beads in rows of 10s, each broken into two sets of five	
number strings	Strategically chosen equations designed to focus on relationships between equations	6 + 6 = 12 6 + 5 = ?
number line	The visual representation of the number line illustrates relationships between answers so students may make connections with different types of equations	
open number line	A number line model that is used to facilitate mental strategies for addition and subtraction	
part to whole relationship	The deeper understanding of how addition and subtraction relate to one another	5 + 2 = 7 and 7 – 5 = 2

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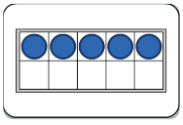
partial sums and differences	Strategy where students create multiple smaller, friendlier equations to solve a larger equation. Students can use place value and landmark numbers when creating these equations	243 + 659 243 + 600 = 843 843 + 60 = 903 903 – 1 = 902
place determines value	Recognizing that the place a number holds determines the value of the number	95 = 9 tens and 5 ones
place value patterns occur when making and adding groups of ten	Recognizing the pattern that when adding a group of ten, the number in the ones place remains constant	65 + 10 = 75 65 + 20 = 85 65 + 30 = 95
regrouping	The strategy of using place value to regroup while performing the standard algorithm for addition or subtraction	53 = 5 tens and 3 ones 53 = 4 tens and 13 ones
snapblocks	Snapblocks are used to represent amounts to demonstrate equivalence	
splitting	The strategy of splitting numbers up into friendlier pieces, usually into hundreds, tens and ones; this strategy is used when students begin to recognize that place determines value. Splitting is also known as decomposing	28 + 44 = 20 + 40 + 8 + 4 60 + 10 + 2 70 + 2 72
subitizing	The strategy of seeing a group as unit without counting	being able to look at the face of a die and see there are 5 dots without counting 
taking leaps of ten back and adjusting	The strategy of subtracting by groups of 10 and then adjusting to find the answer; the open number line is used as a model for this strategy	175 – 19 175 – 20 = 155 + 1 = 156 in this problem, we recognize that 19 is close to 20, so we subtract 20 and then add the extra 1 to get the answer
ten-frame	An array of squares used to teach counting, number relationships and computation	

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ten structure	The strategy of working with a structure of 10 to add and subtract	6 + 7 = 10 + 3
using strategies: compensation	using the big idea of compensation as the strategy of taking an amount from one number and adding it to another to create a friendlier problem; see definition of compensation	37 + 53 = 40 + 50 =90
using strategies: constant difference	using the big idea of constant difference as a strategy to solve a subtraction problem; see definition of constant difference	1226 – 189 = 1237 – 200 (added 11 to each number to make the subtrahend a friendly number)
using strategies: doubles for near doubles	strategy of using the sum of doubles plus or minus one	6 + 7 = 6 + 6 + 1 = 13
using strategies: five structure	working with a structure of five as a strategy for solving	6 + 7 = 5 + 1 + 5 + 2 = 10 + 3 = 13
using strategies: known facts	strategy of using known facts as a strategy to solve a problem	6 + 8 = 14 so 7 + 8 must be 14 + 1 = 15
using strategies: ten structure	using the strategy of working with a structure of 10 to add and subtract	6 + 7 = 10 + 3
varies adding on versus removing	choosing the strategy of adding on or removing based upon the numbers in a subtraction problem; this requires students to understand the relationship between addition and subtraction; the open number line is used as a model for this strategy	**343 – 192** **adding on**  take a jump from 192 to 200 (8) take a jump from 200 to 343 (143) add the two jumps for your answer 8 + 143 = 151 **removing**  take a jump of 200 from 343 = 143 adjust by adding 8 (200 is 8 more than 192) 343 - 200 = 143 then 143 + 8 = 151

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