



INSTRUCTIONAL GUIDANCE: ADDITION & SUBTRACTION

Vocabulary and stem sentences

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Vocabulary	Simple Definition	Questions / Stem Sentences
add	To put amounts together to find the sum or increase a set *	___ add ___ is equal to ___. ___ is equal to ___ add ___.
subtract	To compare two sets or to separate a set *	What happens when we take some away?
Equals sign	The symbol that tells you that two sides of an equation are the same, balanced, or equal.*	___ is equal to ___
total	The whole amount after adding	What is the total?
together	To combine sets or numbers*	How many altogether?
difference	The result of subtracting one number from another number	What is the difference between ___ and ___?

* With thanks to Texas Education Agency (Instructional Routines for Mathematics Intervention)

Common strategies for addition and subtraction, from least to most efficient

Counting-based strategies	
Count all	Students count both addends separately, then count the total from one
Count on	Start at one addend and count up the other addend for addition OR
Count back	Start at the whole and count back the amount being subtracted. For example, for $9 - 6$, count back 6 steps from 9: 8, 7, 6, 5, 4, 3.
Count up	Count up for subtraction to find the difference between the whole and one part, e.g. for $9 - 6$: 6... 7, 8, 9.
Decomposition and derived fact strategies	
Near double	Using a known doubles fact to figure out a related fact, e.g. I know $6 + 6 = 12$ so $6 + 7 = 13$
Make ten	The make-10 strategy is a mental maths strategy where students break apart one addend to build the first to 10, then add the remaining amount, e.g. $7 + 6 = 7 + (3 + 3) = 10 + 3 = 13$
Fact family	Related addition and subtraction facts using the same numbers, e.g: $7 + 3 = 10$, $3 + 7 = 10$, $10 - 3 = 7$, $10 - 7 = 3$.
Retrieval	
Retrieval	When students recall the answer from memory without active strategy use. Low doubles are typically the first facts students are able to retrieve (e.g. $1 + 1$, $2 + 2$, $3 + 3$). Retrieval is a desirable goal as not only does it release cognitive resources for problem solving, but it enables the development of more flexible derived fact strategies using the known facts.