Helping Children Master the Basic Facts

Big Ideas

1. Number relationships provide the foundation for strategies that help students remember basic facts.
2. “Think addition” is the most powerful way to think of subtraction facts – what + what = what.
3. All of the facts are conceptually related. You can figure out new or unknown facts from those you already know.

The three components to helping children develop fact mastery are;

* Developing a strong understanding of number relationships and operations
* Developing efficient strategies for fact retrieval through practice
* Providing drill in the use of the strategies once they have been developed

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| MYTH | TRUTH |
| Counting is one of the best ways for children to master basic facts. | Although this is a starting point in developing number sense, continued use of the counting method does not promote the use of other strategies. Children will simply not use them. |
| Drilling is an efficient strategy. | Drilling is a repetitive non-problem based activity that should only be used when an efficient strategy is in place. Premature drilling introduces no new information and encourages no new connections. |
| It is best to tell students about a strategy and then have them practice. | Instead encourage children to develop their own strategies. Two approaches to fact strategies practice are the use of story problems and lessons when a particular strategy is appropriate. |
| The goal of practice is to develop mastery of the facts. | Practice is problem based activities in which students are encouraged to develop (invent, consider, try) but not master flexible and useful strategies that are meaningful. |

\*An efficient strategy is one that can be done mentally and quickly (mental math).

Strategies for addition facts

* One more than/Two more than facts
* Facts with zero
* Doubles
* Near Doubles (doubles plus one)
* Make 10 facts
* Doubles plus two, or two apart facts
* Make – ten extend – build ten and then add a number
* Counting on (downplay – not efficient, procedural not conceptual, not necessary if other strategies are used)
* Ten frame facts

Subtraction strategies

Subtraction as think addition

* What goes with this part to make the total?
* Relationships between parts and wholes (addition and subtraction) are important
* Addition facts must be mastered first
* Most immediately applicable to subtraction facts of 10 or less
* Build up through 10 – all facts where the part or subtracted number is either 8 or 9
* Back down through 10 – useful for facts where the ones digit of the whole is close to the number being subtracted

\* Take away is not think addition

\*The idea is to introduce efficient strategies for mastering facts in the primary grades with a goal of mastery by third grade