

# “MASTERING” THE BASIC FACTS

Basic facts for addition/multiplication refer to those sums/products where both whole numbers are less than 10 (e.g.,  $4 + 7 = 11$ ;  $8 \times 5 = 40$ ). The subtraction/division basic facts refer to those differences/quotients that correspond to addition/multiplication basic facts (e.g.,  $11 - 4 = 7$ ;  $40 \div 8 = 5$ ). *Mastering* a basic fact means being able to provide a quick response without resorting to nonefficient means, such as counting (on fingers).

## **STEPS FOR HELPING STUDENTS DEVELOP FACT MASTERY**

- *Develop understanding of the operations and of number relationships*
- *Develop effective strategies for fact retrieval*
- *Provide practice in the use of **and** in the selection of fact retrieval strategies*
  - *Avoid premature drill*
  - *Keep drill short*
  - *Encourage speed in using strategies (answer a bit faster each time)*
  - *Provide immediate feedback*

## **RETRIEVAL STRATEGIES FOR ADDITION FACTS**

Facts with zero  
Doubles ( $4 + 4$ )  
Five-Bars ( $5 + 1$ ;  $5 + 7 \approx 5 + 5 + 2$ )  
Make-ten facts with 8 or 9 ( $6 + 8 \approx 8 + 2 = 10$  and  $10 + 4$  equals ... [6 becomes 2 + 4])  
Make-ten extended with 7 ( $4 + 7 \approx 7 + 3 = 10$  and  $10 + 1$  equals ... [4 becomes 3 + 1])  
Doubles plus two or Two-apart facts ( $3 + 5 \approx$  double 3 plus 2 more)  
Counting On  
One-more-than/Two-more-than ( $4 + 1$ ,  $7 + 2$ )  
Near-doubles ( $8 + 7 \approx$  double 7 plus 1 more)  
Ten-Frames ( $2 + 8$ ;  $4 + 6$ ;  $7 + 3$ )

## **RETRIEVAL STRATEGIES FOR SUBTRACTION FACTS (Think Addition)**

Facts with zero  
Doubles ( $8 - 4$ )  
Ten-Frames ( $10 - 2$ ;  $10 - 7$ )  
Build-up through ten with 8 or 9 ( $15 - 8$  8 plus 2 is 10 and 5 more is 15 so  $15 - 8 = 7$ )  
Back down through ten for difference of 8 or 9 ( $13 - 3 \approx 13$  less 3 is 10 less 1 more is 9)  
Extend Think-Addition ( $13 - 6 \approx 6$  plus what will make 13)  
One-fewer-than/Two-fewer-than ( $8 - 7$ ,  $8 - 1$ ;  $6 - 2$ ,  $6 - 4$ )  
Near-doubles ( $15 - 7$ )  
Five-Bars ( $8 - 5$ ;  $12 - 7$ )

## **RETRIEVAL STRATEGIES FOR MULTIPLICATION FACTS**

Doubles ( $2 \times 6$ )      Five Facts      Zeros and Ones      Nifty Nines  
Double and double again ( $4 \times 6 \approx$  double 6 is 12 and double 12 is 24)  
Double and one more set ( $3 \times 8 \approx$  double 8 plus 8 more)  
Half then double ( $6 \times 7 \approx$  half of 6 is 3;  $3 \times 7 = 21$ ; double 21 is 42)  
Add one more set ( $6 \times 7 \approx 5 \times 7$  plus one more 7 [helpful to say “six sevens”])  
Double three times ( $7 \times 8 \approx$  double 7 is 14, double 14 is 28, and double 28 is 56)

## **RETRIEVAL STRATEGIES FOR DIVISION FACTS**

THINK MULTIPLICATION!!!!

“Near-Facts” when dealing with remainders ( $50 \div 7 \approx 49 \div 7$  with one left over)