Multiplication and Division

Fact Fluency Strategies

Strategies are based on multiplication and to become fluent in division facts, students relate the division fact to the known multiplication fact.

x 2 Facts

With these facts, students can skip count by 2s or use doubles addition facts to solve.

Examples:

7 x 2 = 14 (Add 7 + 7 = 14) 14 ÷ 2 = 7

2 x 6 = 12 (Count by 2s 6 times…2, 4, 6, 8, 10, 12) 12 ÷ 6 = 2

x 10 Facts

With these facts, students skip count by 10s or use their understanding of place value to solve (i.e. 4 x 10 is 4 tens = 40).

Examples:

5 x 10 = 50 (5 tens = 50) 50 ÷ 5 = 10

10 x 3 = 30 (Count by 10s 3 times…10, 20, 30) 30 ÷ 10 = 3

x 5 Facts

With these facts, students can skip count by 5s or build on their understanding of x10 facts and take half (i.e. 6 x 5… 6 x 10 = 60 and half of 60 is 30)

Examples:

6 x 5 =320 (6 x 10 = 60 and half of 60 is 30) 30 ÷ 5 = 6

5 x 4 = 20 (Count by 5s 4 times…5, 10, 15, 20) 20 ÷ 4 = 5

x 1 Facts

These facts employ the *Identity Property of Multiplication* which states "when multiplying by 1, the product is the same as the other factor".

Examples:

4 x 1 = 4 1 x 8 = 8

4 ÷ 1 = 4 8 ÷ 8 = 1

x 0 Facts

These facts employ the *Zero Property of Multiplication* which states "if either factor is 0, the product will be 0". In other words, if you have 0 groups of 7 or if you have 8 groups of 0, you have nothing. Also, these facts do not have related division facts because you cannot divide by 0.

Examples:

5 x 0 = 0 0 x 9 = 0

x 3 Facts

These facts can be thought of as x2 and then adding 1 more group, or tripling a number.

Examples:

7 x 3 = 21 (7 x 2 = 14 plus one more 7 is 21) 21 ÷ 7 = 3

3 x 8 = 24 (8 + 8 + 8 = 24) 24 ÷ 3 = 8

x4 Facts

These facts can be thought of as doubling a double.

Examples:

6 x 4 = 24 (Double 6 = 12 and double 12 = 24) 24 ÷ 4 = 6

4 x 8 = 32 (Double 8 = 16 and double 16 = 32) 32 ÷ 8 = 4

x6 Facts

These facts can be thought of as doubling a multiple of 3 (so students need to know their x3 facts). Another approach to this strategy is x5 fact and add one more group.

Examples:

7 x 6 = 42 (7 x 3 = 21 and double it to 42) 42 ÷ 7 = 6

6 x 8 = 48 (5 x 8 = 40 plus one more group of 8 is 48) 48 ÷ 6 = 8

x9 Facts

These facts build on knowledge of x10 facts, the product of a x9 fact is 1 group less than the product of the same x10 fact.

Examples:

6 x 9 = 54 (6 x 10 = 60, take away one group of 6 = 54) 54 ÷ 9 = 6

9 x 8 = 72 (10 x 8 = 80, take away one group of 8 = 72) 72 ÷ 8 = 9

x8 Facts

These facts can be thought of as double – double - double. *NOTE: If students are fluent in all other categories, there are only TWO x8 facts they will need to learn (see below):*

Examples:

8 x 8 = 64 (Double 8 = 16, double 16 = 32, double 32 = 64) 64 ÷ 8 = 8

7 x 8 = 56 (Double 7 = 14, double 14 = 28, double 28 = 56) 56 ÷ 7 = 8

x7 Facts

These facts can be thought of by breaking apart the 7 into 5 and 2, so you multiply by 5 and multiply by 2 and add together. *NOTE: If students are fluent in all other categories, there is only ONE remaining x7 fact they will need to learn (see below):*

Example:

7 x 7 = 49 (7 x 5 = 35, 7 x 2 = 14; 35 + 14 = 49) 49 ÷ 7 = 7

These strategies are based on the
Mastering Basic Math Facts: Multiplication and Division
by Susan O'Connell and John SanGiovanni