Multiplication Fact Memorization

Simplification, simplification, simplification

PROBLEM: Students are having difficulty memorizing their multiplication facts.

Traditional Method:

- Too many #'s to memorize
- Focuses on tables
- Emphasizes factors
- 161 problems to memorize

(See Traditional Multiplication Tables attached.)

SOLUTION: Simplify the amount of #'s to memorize.

Alternative Method:

- Focus on Products
- Emphasis moves away from tables and factors
- Simplification translates to "short-cut" and increased student motivation
- Easily translates to division

HOW: Focus on 31 common products over 5 days.

1 x 1 = 1	2 x 1 = 2	3 x 1 = 3	4 x 1 = 4	5 x 1 = 5	6 x 1 = 6	7 x 1 = 7	8 x 1 = 8	9 x 1 = 9
1 x 2 = 2	2 x 2 = 4	3 x 2 = 6	4 x 2 = 8	5 x 2 = 10	6 x 2 = 12	7 x 2 = 14	8 x 2 = 16	9x 2 = 18
1 x 3 = 3	2 x 3 = 6	3 x 3 = 9	4 x 3 = 12	5 x 3 = 15	6 x 3 = 18	7 x 3 = 21	8 x 3 = 24	9 x 3 = 27
1 x 4 = 4	2 x 4 = 8	3 x 4 = 12	4 x 4 = 16	5 x 4 = 20	6 x 4 = 24	7 x 4 = 28	8 x 4 = 32	9 x 4 = 36
1 x 5 = 5	2 x 5 = 10	3 x 5 = 15	4 x 5 = 20	5 x 5 = 25	6 x 5 = 30	7 x 5 = 35	8 x 5 = 40	9 x 5 = 45
1 x 6 = 6	2 x 6 = 12	3 x 6 = 18	4 x 6 = 24	5 x 6 = 30	6 x 6 = 36	7 x 6 = 42	8 x 6 = 48	9 x 6 = 54
1 x 7 = 7	2 x 7 = 14	3 x 7 = 21	4 x 7 = 28	5 x 7 = 35	6 x 7 = 42	7 x 7 = 49	8 x 7 = 56	9 x 7 = 63
1 x 8 = 8	2 x 8 = 16	3 x 8 = 24	4 x 8 = 32	5 x 8 = 40	6 x 8 = 48	7 x 8 = 56	8 x 8 = 64	9 x 8 = 72
1 x 9 = 9	2 x 9 = 18	3 x 9 = 27	4 x 9 = 36	5 x 9 = 45	6 x 9 = 54	7 x 9 = 63	8 x 9 = 72	9 x 9 = 81

The Key is the Simplicity

Compare Math to Spelling:

- Most students are expected to memorize a Spelling list of up to 25 words per week.
- 25 words X 35 weeks of school = 875 words memorized in a school year

Student Expectations

If 25 words can be memorized in one week, taking into consideration all the possible spelling patterns, vowel rules, inflected endings, etc., the task of memorizing 31 products is clearly a realistic expectation.

The Process (The 5 day approach recommended for grades 4 and above.)

There are 31 common answers to be memorized from the traditional multiplication facts tables. (Not counting the Identity Property)

4	12	20	30	40	54	63	72	81
6	14	21	32	42	56	64		
8	15	24	35	45				
9	16	25	36	48				
10	18	27		49				
		28						

Day 1

- Focus on the answers less than 20
- Model “What makes….”
- Drill and practice the 10 products for mastery. (Techniques may vary.)

Day 2

- Focus on the answers in the 20’s and 30’s
- Model “What makes…”
- Drill and practice the 10 new products for mastery.
- Review the 20 products to develop recall. (Techniques may vary.)

Day 3

- Focus on the answers in the 40’s
- Model “What makes…”
- Drill and practice the 5 new products for mastery.
- Review the 25 products to develop recall. (Techniques may vary.)

Day 4

- Focus on the remaining 6 products.
- Model “What makes…”
- Drill and practice the 6 new products for mastery.
- Review the 31 products to develop recall. (Techniques may vary.)

Day 5

- Test

Day 1 "What makes…."

4 = 2x2

6 = 2x3

8 = 2x4

9 = 3x3

10 = 2x5

12 = 2x6 , 3x4

14 = 2x7

15 = 3x5

16 = 2x8 , 4x4

18 = 2x9 , 3x6

Day 2 "What makes…"

20 = 4x5

21 = 3x7

24 = 3x8 , 4x6

25 = 5x5

27= 3x9

28 = 4x7

30 = 5x6

32 = 4x8

35 = 5x7

36 = 4x9 , 6x6

Day 3 “ What makes…”

40 = 5x8

42 = 6x7

45 = 5x9

48 = 6x8

49 = 7x7

Day 4 “ What makes…”

54 = 6x9

63 = 7x9

72 = 8x9

81 = 9x9

56 = 7x8

64 = 8x8