

Southern Nevada Regional Professional Development Program

Strategy: Multiplying by 12

Example: Finding a pattern

12 X 1	=	11 + 1	=	12
12 X 2	=	22 + 2	=	24
12 X 3	=	33 + 3	=	36
12 X 4	=	44 + 4	=	48
12 X 5	=	55 + 5	=	60
12 X 6	=	66 + 6	=	72
12 X 7	=	77 + 7	=	84
12 X 8	=	88 + 8	=	96
12 X 9	=	99 + 9	=	108

A debate over basic facts was discussed at many of this years Level One 4,5,6 Math Seminars. The majority of the seminar participants agreed with the districts Curriculum Essentials Framework (CEF) that defines a basic fact. The District's CEF defines a basic fact to be addition and multiplication of facts from numerals one through nine. However, not to be overshadowed, another group of participants' suggested a basic fact should be addition and multiplication from one through twelve. It is obvious that the discussion comes down to a debate over three numerals including: a) 10, b) 11 and 12.

Those participants in favor of basic facts from one to twelve started their argument stating that a student feels very comfortable multiplying by numerals 10 and 11. Both sides of the debate seemed to agree that students have an inherent ability to learn those two facts. Unfortunately, the debate seemed to die out when it came to the numeral twelve. This page does not advocate against the District's CEF of basic facts from numerals one to nine. In fact, this page strongly advocates looking at a pattern for the debated numeral twelve and helping students have a better understanding of finding the math behind the pattern that exists.

THIS IS NOT A TRICK...THIS IS A MATH PATTERN

Where's the Math?

<div style="border: 1px solid black; padding: 5px; display: inline-block;">Distribution of multiplication over addition</div>							
12 X 1	=	(11 + 1) X 1	(11 X 1) + (1 X 1)	=	11 + 1	=	12
12 X 2	=	(11 + 1) X 2	(11 X 2) + (1 X 2)	=	22 + 2	=	24
12 X 3	=	(11 + 1) X 3	(11 X 3) + (1 X 3)	=	33 + 3	=	36
12 X 4	=	(11 + 1) X 4	(11 X 4) + (1 X 4)	=	44 + 4	=	48
12 X 5	=	(11 + 1) X 5	(11 X 5) + (1 X 5)	=	55 + 5	=	60
12 X 6	=	(11 + 1) X 6	(11 X 6) + (1 X 6)	=	66 + 6	=	72
12 X 7	=	(11 + 1) X 7	(11 X 7) + (1 X 7)	=	77 + 7	=	84
12 X 8	=	(11 + 1) X 8	(11 X 8) + (1 X 8)	=	88 + 8	=	96
12 X 9	=	(11 + 1) X 9	(11 X 9) + (1 X 9)	=	99 + 9	=	108

THE PROPERTY OF DISTRIBUTION OVER ADDITION MAKES THIS POSSIBLE.