

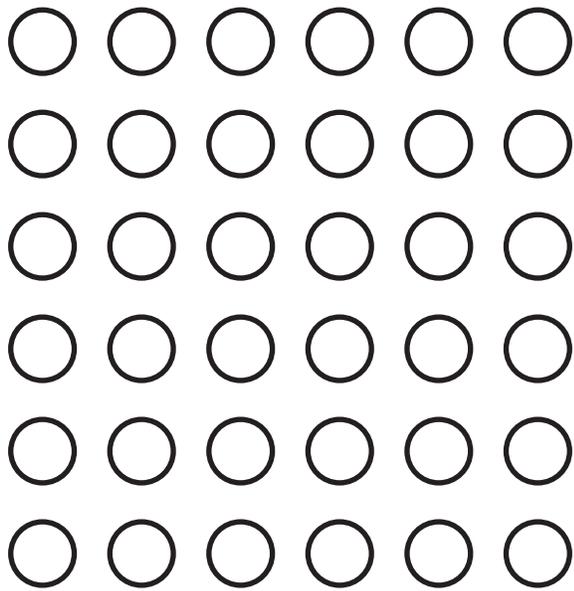
**Display Master: Key Idea: 6s and 12s**

- Unknown facts can be derived from known facts using the doubling strategy.

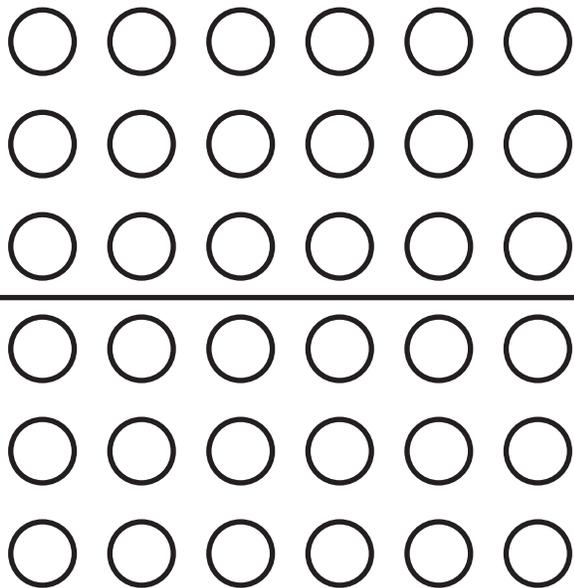
**Display Master: Partially Completed Multiplication Table**

x	1	2	3	4	5	6	7	8	9	10	11	12	
1	1	2	3	4	5		7	8	9	10	11		
2	2	4	6	8	10		14	16	18	20	22		
3	3	6	9	12	15		21	24	27	30	33		
4	4	8	12	16	20		28	32	36	40	44		
5	5	10	15	20	25		35	40	45	50	55		
6													
7	7	14	21	28	35		49	56	63	70	77		
8	8	16	24	32	40		56	64	72	80	88		
9	9	18	27	36	45		63	72	81	90	99		
10	10	20	30	40	50		70	80	90	100	110		
11	11	22	33	44	55		77	88	99	110	121		
12													

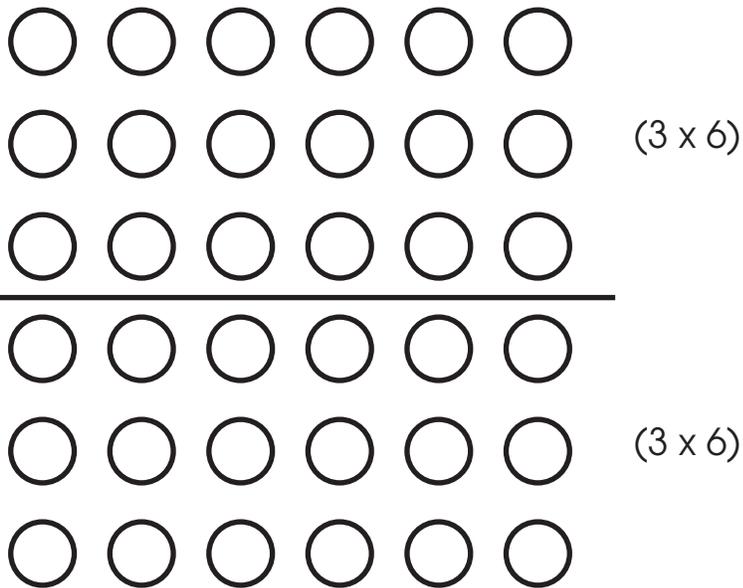
**Display Master: 6 x 6 Array A**



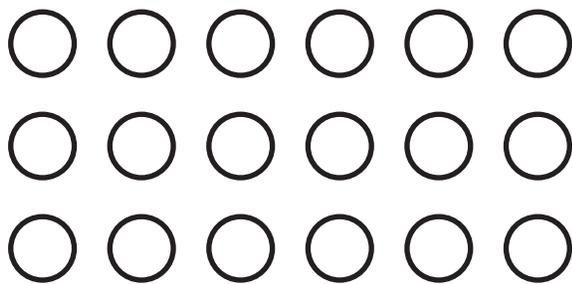
**Display Master: 6 x 6 Array B**



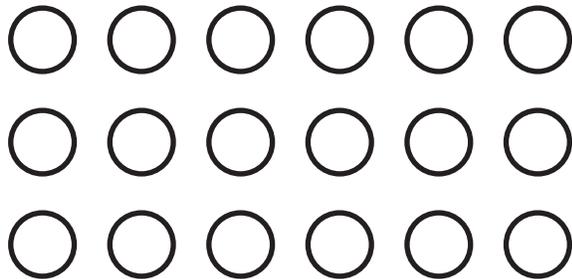
**Display Master: 6 x 6 Array C**



**Display Master: 6 x 6 Array D**



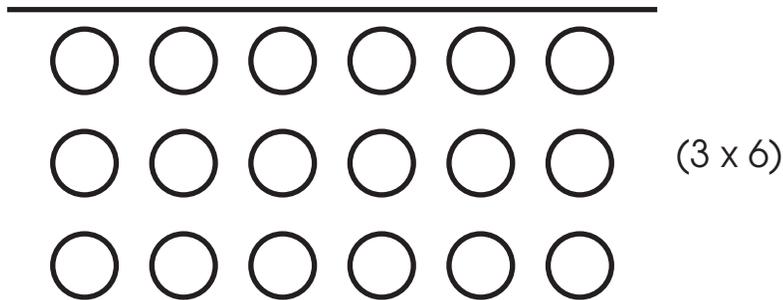
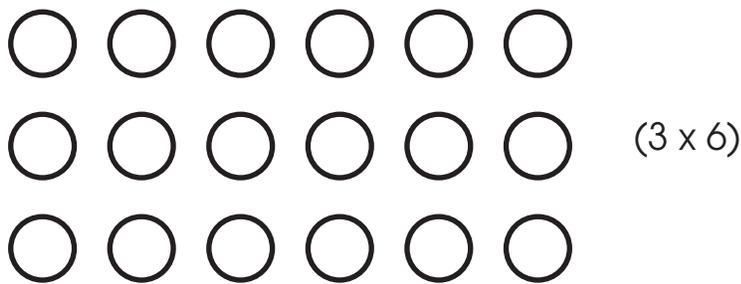
$(3 \times 6)$



$(3 \times 6)$

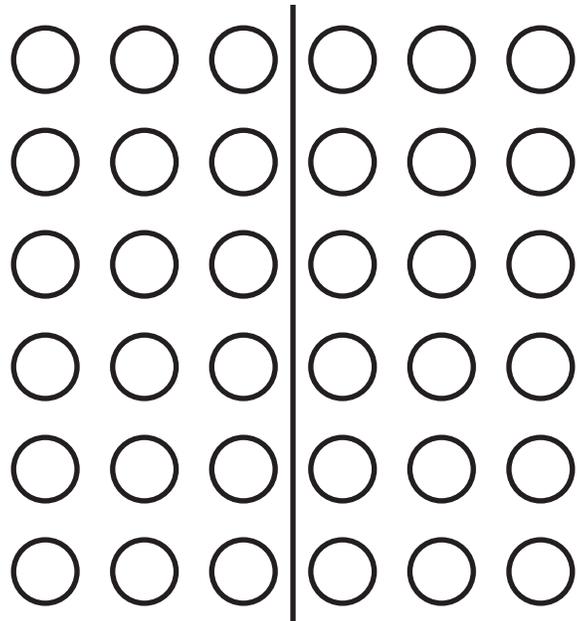
$\Rightarrow (3 \times 6) + (3 \times 6)$

**Display Master: 6 x 6 Array E**

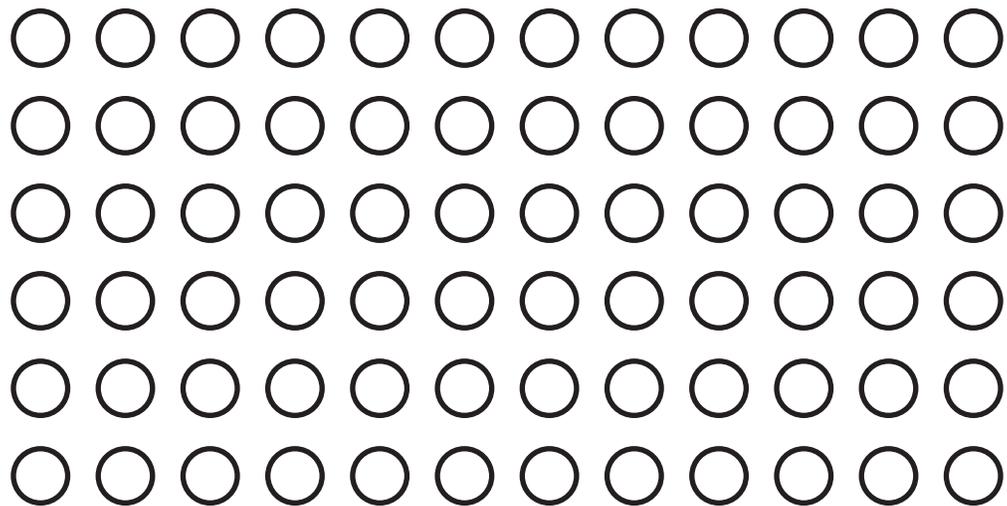


$$\Rightarrow (3 \times 6) + (3 \times 6)$$
$$\Downarrow \quad \Downarrow$$
$$18 + 18 = 36$$

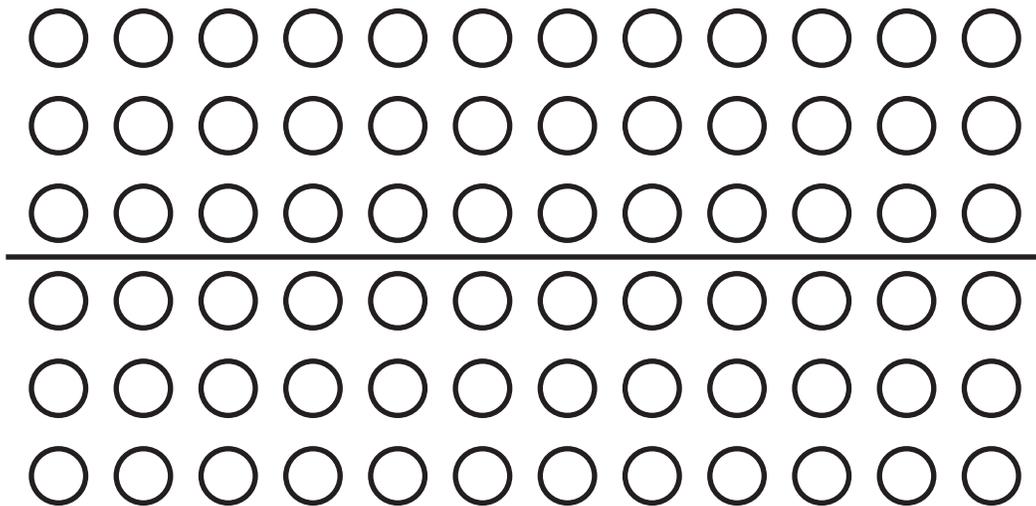
**Display Master: 6 x 6 Array F**



**Display Master: 6 x 12 Array A**



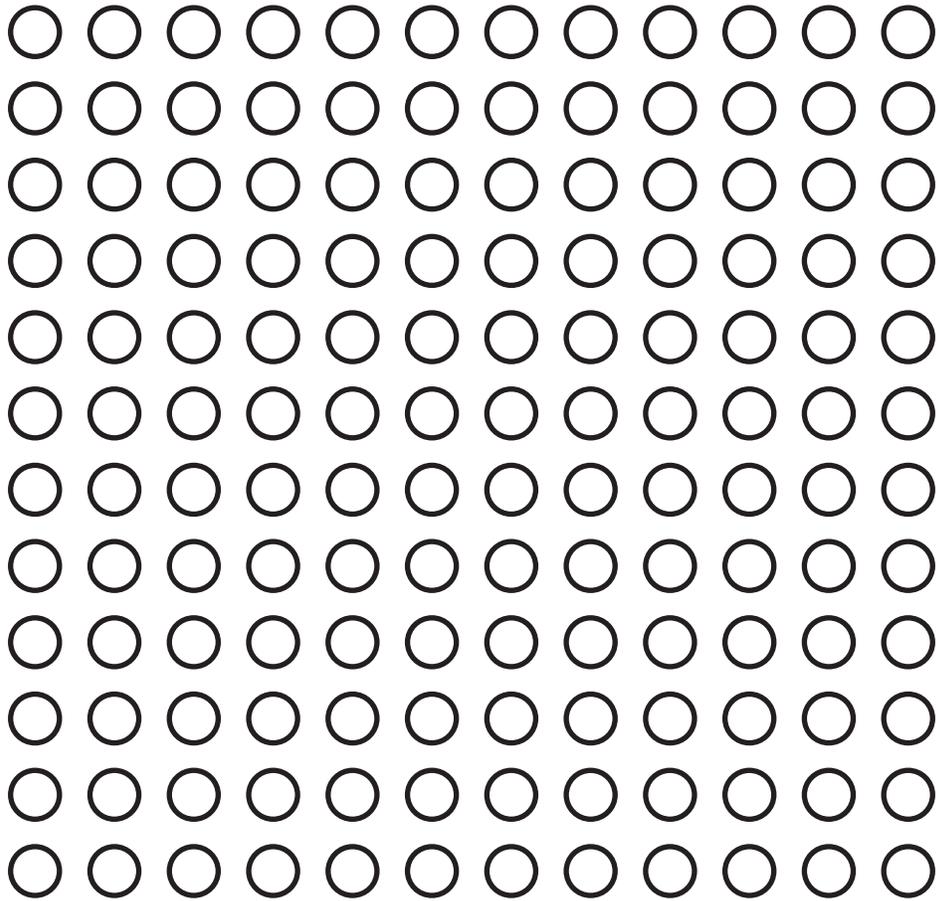
**Display Master: 6 x 12 Array B**



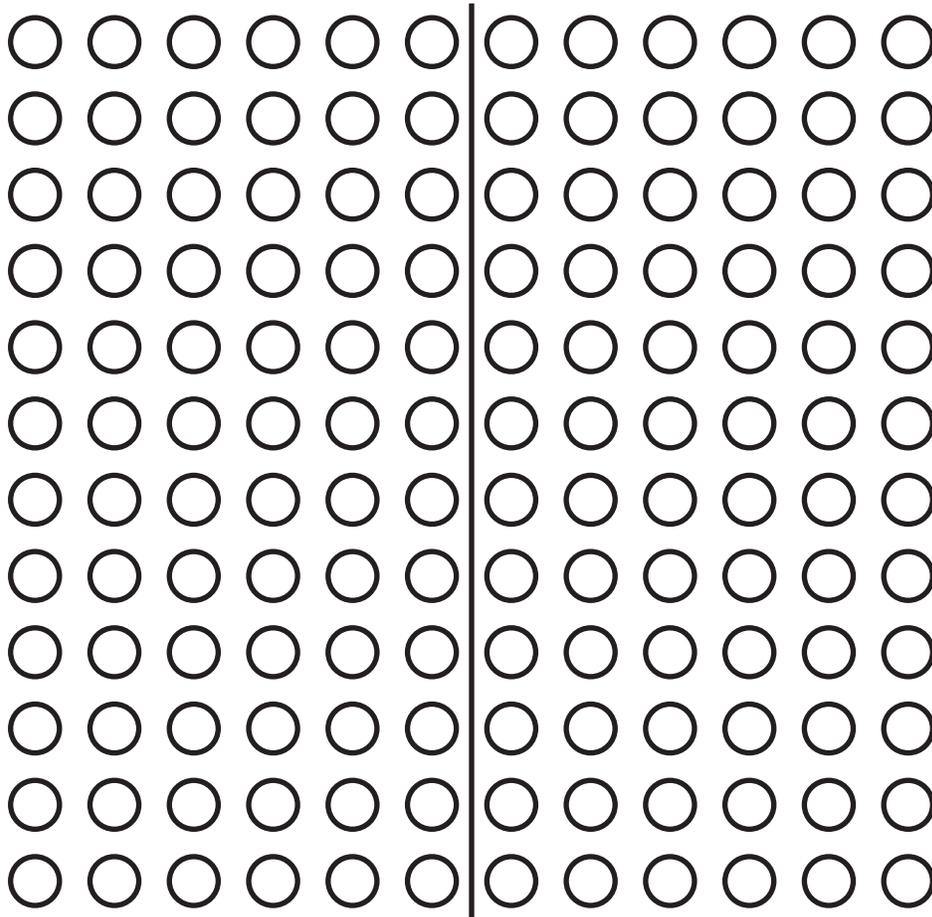
**Display Master: 6s Multiplication Table**

						3 +						
x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5		7	8	9	10	11	
2	2	4	6	8	10		14	16	18	20	22	
3	3	6	9	12	15		21	24	27	30	33	
4	4	8	12	16	20		28	32	36	40	44	
5	5	10	15	20	25		35	40	45	50	55	
3 + 3	6											
	7	7	14	21	28	35		49	56	63	70	77
	8	8	16	24	32	40		56	64	72	80	88
	9	9	18	27	36	45		63	72	81	90	99
	10	10	20	30	40	50		70	80	90	100	110
	11	11	22	33	44	55		77	88	99	110	121
	12											

**Display Master: 12 x 12 Array A**

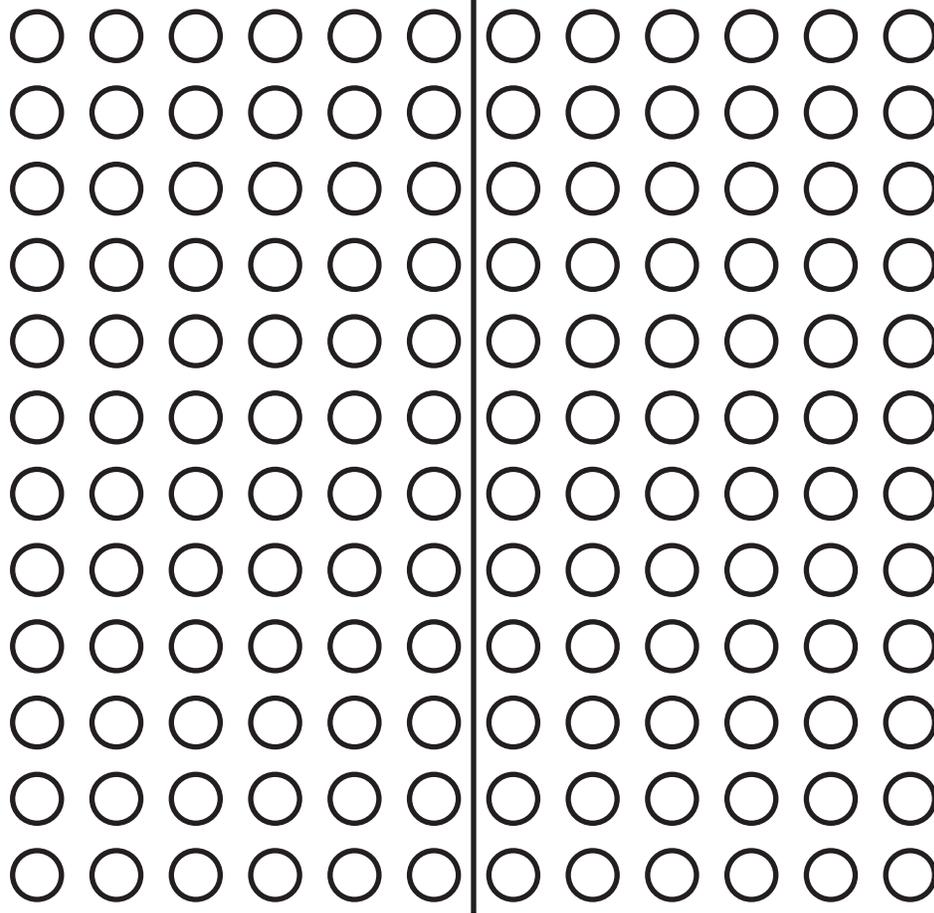


**Display Master: 12 x 12 Array B**





**Display Master: 12 x 12 Array D**



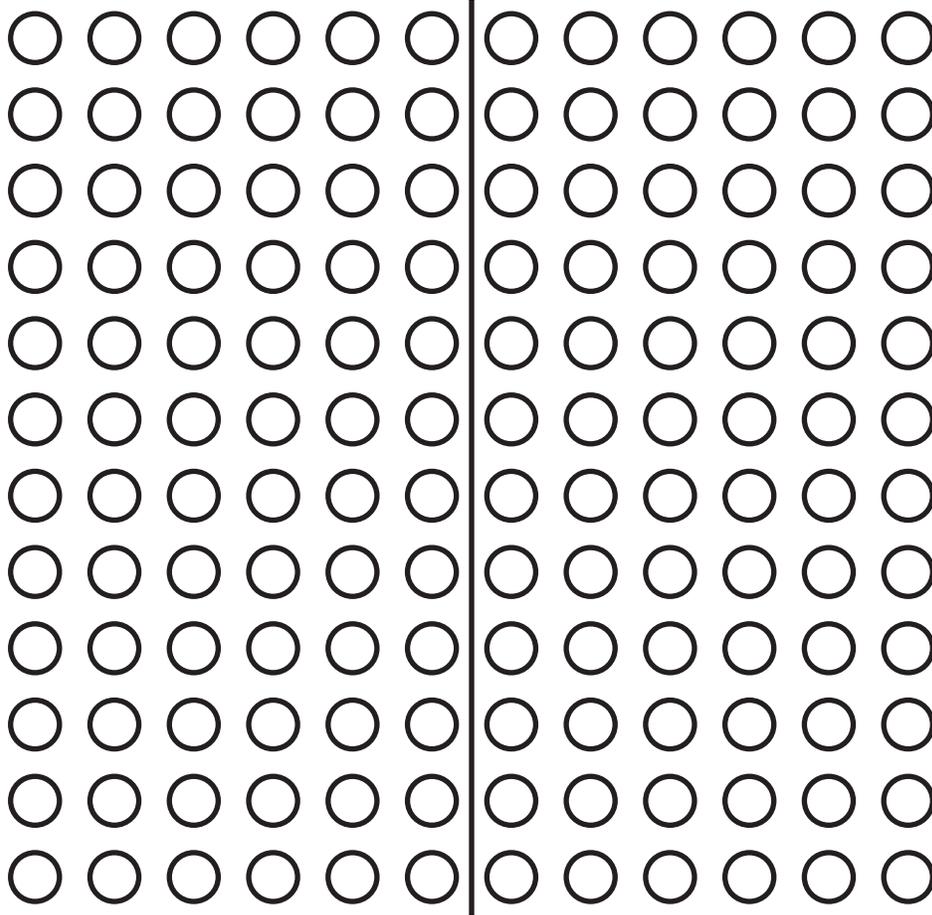
(6 x 12)



(6 x 12) + (6 x 12)

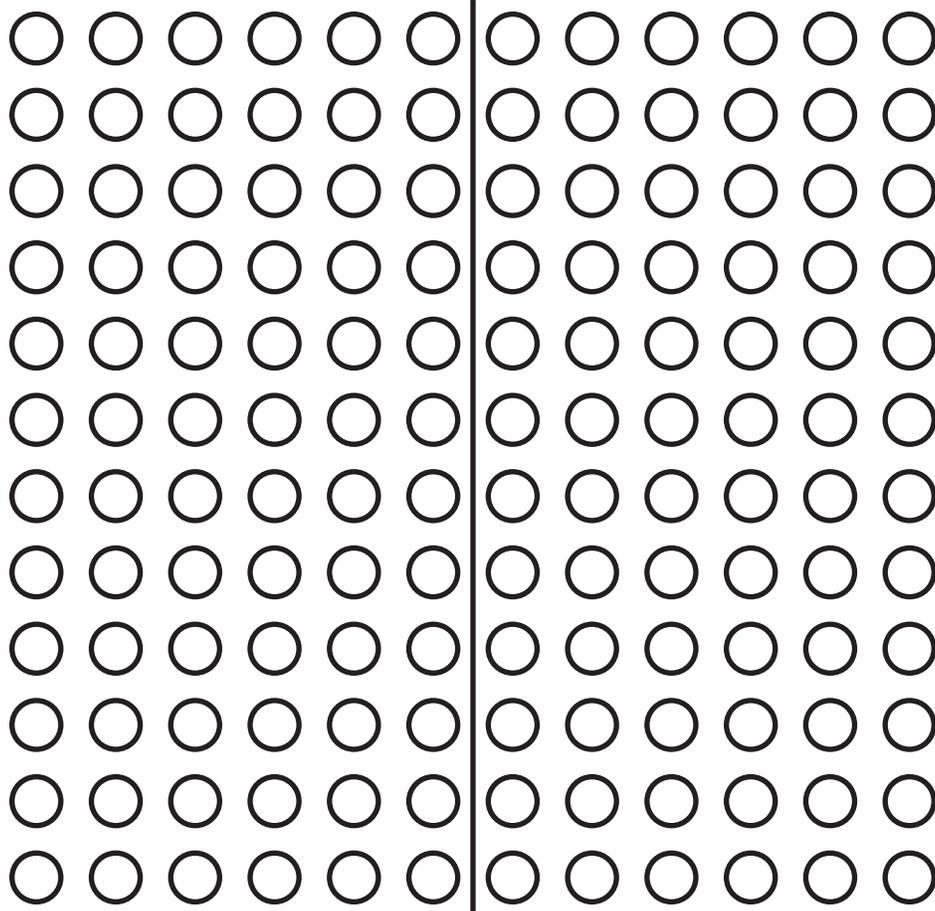
(6 x 12)

**Display Master: 12 x 12 Array E**



$$\begin{array}{r} \Rightarrow \\ (6 \times 12) + (6 \times 12) \\ \Downarrow \quad \Downarrow \\ 72 + 72 = 144 \end{array}$$

**Display Master: 12 x 12 Array F**



**Display Master: 12s Multiplication Table**

							$3 + 3$						$6 + 6$
x	1	2	3	4	5	6	7	8	9	10	11	12	
1	1	2	3	4	5	6	7	8	9	10	11	12	
2	2	4	6	8	10	12	14	16	18	20	22	24	
3	3	6	9	12	15	18	21	24	27	30	33	36	
4	4	8	12	16	20	24	28	32	36	40	44	48	
5	5	10	15	20	25	30	35	40	45	50	55	60	
$3 + 3$	6	6	12	18	24	30	36	42	48	54	60	66	72
	7	7	14	21	28	35	42	49	56	63	70	77	84
	8	8	16	24	32	40	48	56	64	72	80	88	96
	9	9	18	27	36	45	54	63	72	81	90	99	108
	10	10	20	30	40	50	60	70	80	90	100	110	120
	11	11	22	33	44	55	66	77	88	99	110	121	132
$6 + 6$	12	12	24	36	48	60	72	84	96	108	120	132	144

**Display Master: Facts Strategies**

				1 + 2	2 + 2		3 + 3	2 + 5	4 + 4	4 + 5			6 + 6
	x	1	2	3	4	5	6	7	8	9	10	11	12
	1	1	2	3	4	5	6	7	8	9	10	11	12
	2	2	4	6	8	10	12	14	16	18	20	22	24
1 + 2	3	3	6	9	12	15	18	21	24	27	30	33	36
2 + 2	4	4	8	12	16	20	24	28	32	36	40	44	48
	5	5	10	15	20	25	30	35	40	45	50	55	60
3 + 3	6	6	12	18	24	30	36	42	48	54	60	66	72
2 + 5	7	7	14	21	28	35	42	49	56	63	70	77	84
4 + 4	8	8	16	24	32	40	48	56	64	72	80	88	96
4 + 5	9	9	18	27	36	45	54	63	72	81	90	99	108
	10	10	20	30	40	50	60	70	80	90	100	110	120
	11	11	22	33	44	55	66	77	88	99	110	121	132
6 + 6	12	12	24	36	48	60	72	84	96	108	120	132	144