MULTIPLY OR DIVIDE? WHAT DO I DO?

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Goals

- Identify multiplication & division situations
- Analyze the stages of learning within the situations
- Reflect on the complexity of the different situations and how they support the Common Core State Standards in K-5 Mathematics

Warm-up

Solve the situations in as many ways possible:

I have 12 cents to buy gum drops with. If each gum drop costs 4 cents, how many gum drops can I buy?

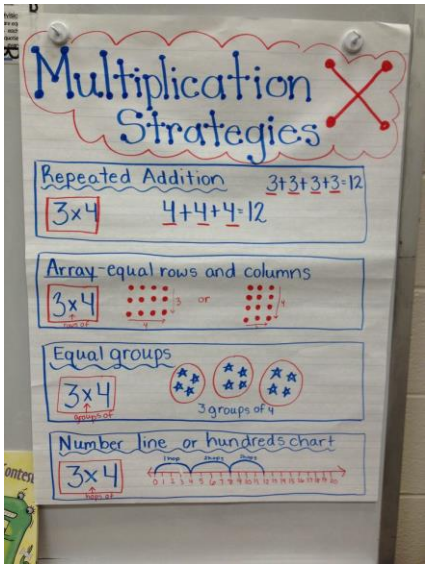
Mrs. Farmer has 12 cupcakes. She wants to put the cupcakes into 4 boxes so that there are the same number in each box. How many cupcakes can go in each box?

Children's Solution Strategies

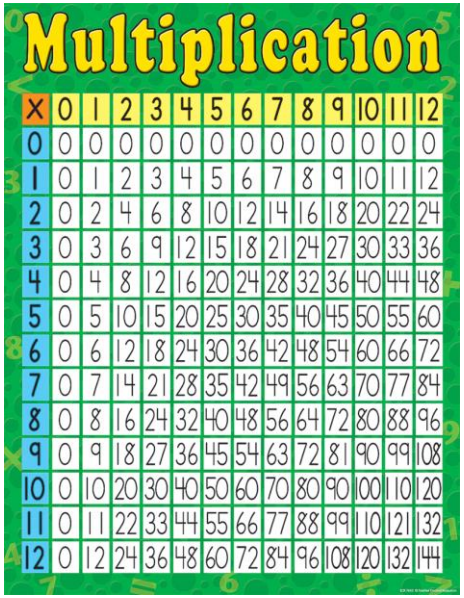
Direct Modeling

5	+	3
5 x 5 = 25	3x5=15	5
5 x 2 = 10	3x2=6	+ 2

Derived Fact



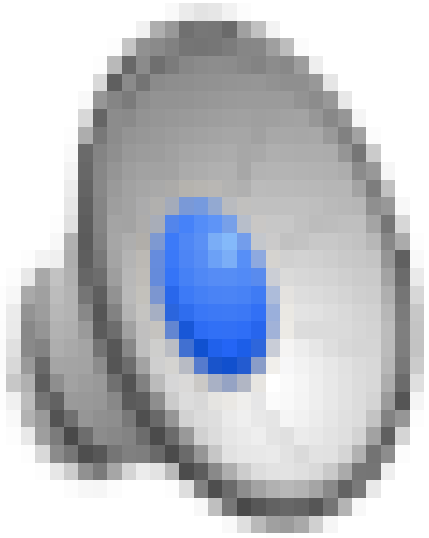
Counting Strategies



X	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

Number Facts

Manuel



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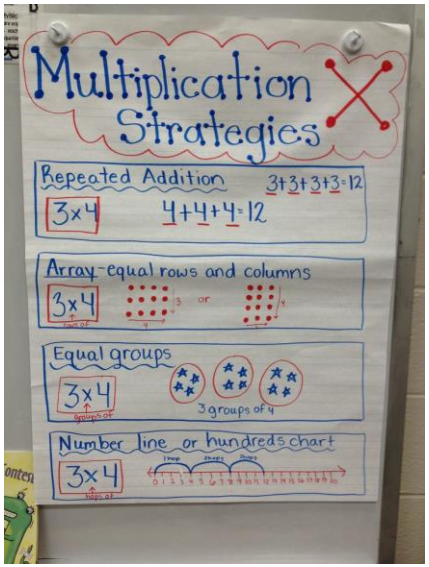

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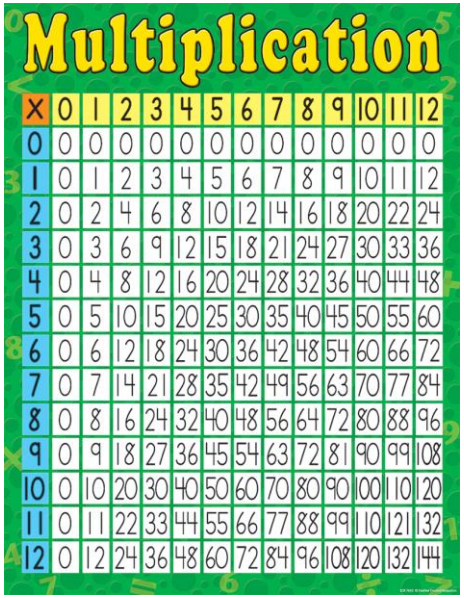

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0	0	0	0	0	0	0	0	0	0	0	0	0	0
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2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
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Number Facts

Multiplication & Division Situations

Equal Groups

Arrays Area

Compare

$3 \times \square = 18$

$3 \times 6 = \square$

$18 \div 3 = \square$

$18 \div 6 = \square$

$\square \times 6 = 18$

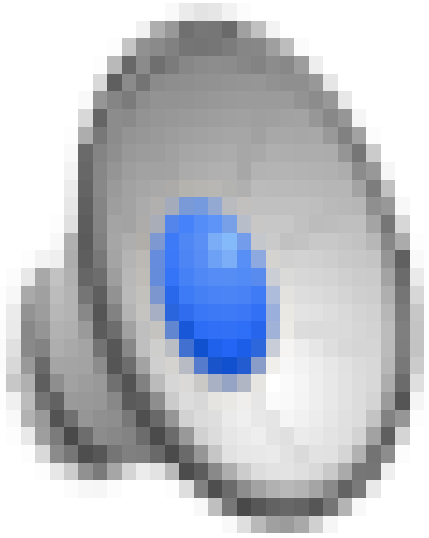
Multiplication & Division Situations

	Unknown Product 3 x 6 = ?	Group Size Unknown ("How many in each group?" Division) 3 x ? = 18, and 18 ÷ 3 = ?	Number of Groups Unknown ("How many groups?" Division) ? X 6 = 18, and 18 ÷ 6 = ?
Equal Groups			
Arrays Area			
Compare			

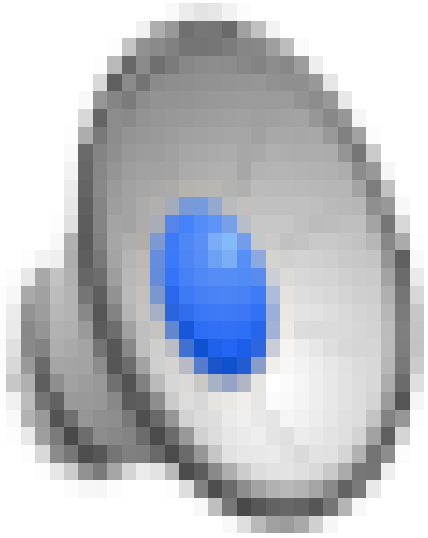
Multiplication & Division Situations

	Unknown Product 3 x 6 = ?	Group Size Unknown ("How many in each group?" Division) 3 x ? = 18, and 18 ÷ 3 = ?	Number of Groups Unknown ("How many groups?" Division) ? X 6 = 18, and 18 ÷ 6 = ?
Equal Groups	Bethany is teaching 3 groups of student with 6 students in each group. How many students are there in all?	If Beckie shared18 pencils equally into 3 bags, then how many pencils will be in each bag?	If Bethany had 18 markers that need to be packed 6 to a box, then how many boxes are needed?
Arrays Area	Beckie planted 3 rows of flowers with 6 flowers in each row. How many flowers are there?	If 18 flowers are arranged into 3 equal rows, how many flowers will be in each row?	If 18 flowers are arranged into equal rows of 6 flowers, how many rows will there be?
Compare	Beckie has $6. Bethany has 3 times as much as Beckie. How much does Bethany have?	Beckie has $18 and that is 3 times as much as Bethany. How much does Bethany have?	Beckie has $18 and Bethany has $6. How many times as much does Beckie have than Bethany?

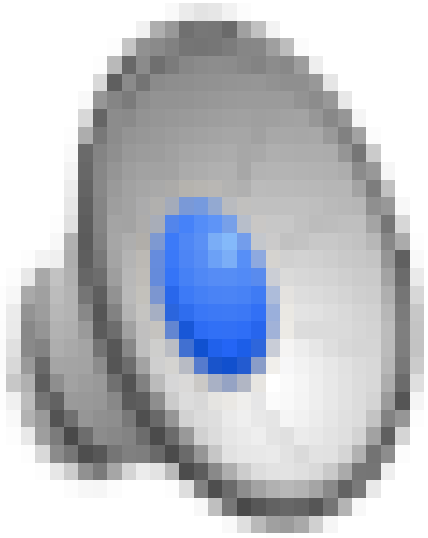
Manuel



Kendall



Reggie



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Thank you!

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