

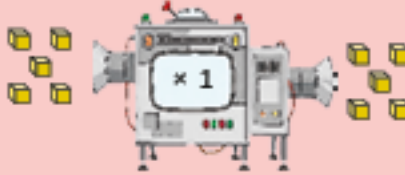
Key Vocabulary

Multiplication and Division Facts

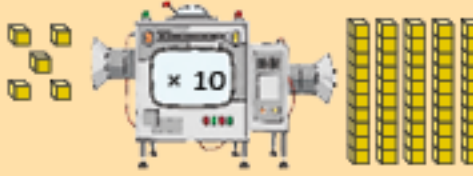
Use Place Value to Multiply and Divide Mentally

multiply
groups of
lots of
times
divide
share
remainder

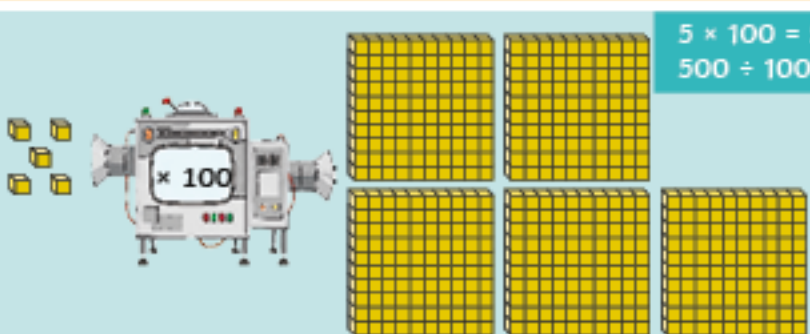
x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72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



$5 \times 1 = 5$   
 $5 \div 1 = 5$



$5 \times 10 = 50$   
 $50 \div 10 = 5$




$5 \times 100 = 500$   
 $500 \div 100 = 5$

Factor pairs and Commutativity

Multiply Using Formal Written Methods

factor
multiple
product


20




The factors of 20 are 1, 2, 4, 5, 10 and 20.  
The factor pairs are:

1 and 20	2 and 10	4 and 5
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$5 \times 4 = 20$



$4 \times 5 = 20$

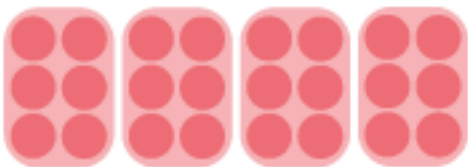


<table style="width: 100%; border-collapse: collapse;"> <tr><td style="border-right: 1px solid black; padding: 5px;">Th</td><td style="padding: 5px;">H</td><td style="padding: 5px;">T</td><td style="padding: 5px;">O</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;"></td><td style="padding: 5px;">5</td><td style="padding: 5px;">4</td><td style="padding: 5px;">3</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;">x</td><td style="padding: 5px;"></td><td style="padding: 5px;"></td><td style="padding: 5px;">4</td></tr> <tr style="border-top: 1px solid black;"><td style="border-right: 1px solid black; padding: 5px;"></td><td style="padding: 5px;"></td><td style="padding: 5px;">1</td><td style="padding: 5px;">2</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;"></td><td style="padding: 5px;">1</td><td style="padding: 5px;">6</td><td style="padding: 5px;">0</td></tr> <tr style="border-top: 1px solid black;"><td style="border-right: 1px solid black; padding: 5px;">2</td><td style="padding: 5px;">0</td><td style="padding: 5px;">0</td><td style="padding: 5px;">0</td></tr> <tr style="border-top: 1px solid black;"><td style="border-right: 1px solid black; padding: 5px;">2</td><td style="padding: 5px;">1</td><td style="padding: 5px;">7</td><td style="padding: 5px;">2</td></tr> </table>	Th	H	T	O		5	4	3	x			4			1	2		1	6	0	2	0	0	0	2	1	7	2	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">Th</td> <td style="padding: 5px;">H</td> <td style="padding: 5px;">T</td> <td style="padding: 5px;">O</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">5</td> <td style="padding: 5px;">4</td> <td style="padding: 5px;">3</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">x</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">4</td> </tr> <tr style="border-top: 1px solid black;"> <td style="border-right: 1px solid black; padding: 5px;">2</td> <td style="padding: 5px;">1</td> <td style="padding: 5px;">7</td> <td style="padding: 5px;">2</td> </tr> <tr style="border-top: 1px solid black;"> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">1</td> <td style="padding: 5px;">1</td> <td style="padding: 5px;"></td> </tr> </table>	Th	H	T	O		5	4	3	x			4	2	1	7	2		1	1	
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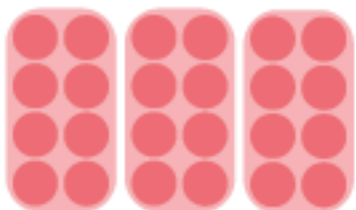
Remember to move any regrouped numbers into the next column. After the next multiplication, add the regrouped number to the answer.

Mental Calculations for Solving Problems

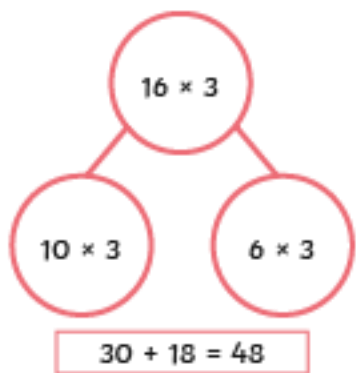
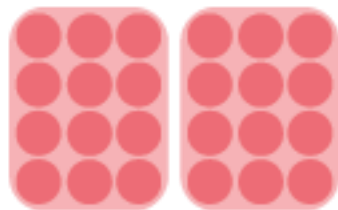
$(2 \times 3) \times 4 = 24$



$(2 \times 4) \times 3 = 24$



$(3 \times 4) \times 2 = 24$

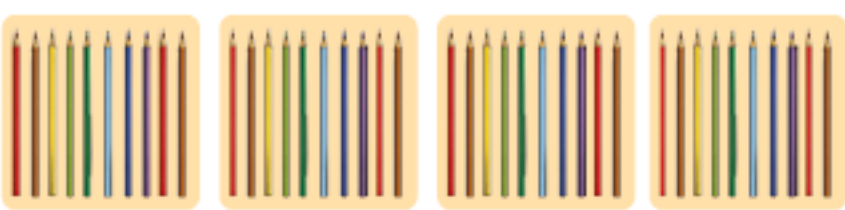


Integer Scaling Problems

10 pencils



$10 \times 4 = 40$  pencils



75g



$75g \times 2 = 150g$



Short Division with Exact Answers

There are 69 tennis balls packed in tubes of 3.

There are 23 tubes altogether.

$69 \div 3 = 23$

$$\begin{array}{r} 23 \\ 3 \overline{) 69} \end{array}$$

69		
23	23	23

