Year 5 **Multiplication and Division**

Key Vocabulary
inverse
commutative
mathematical state-ments
scaling
integer
correspondence
exchange
derived facts
factor pairs
formal written layout
distributive law
remainders
multiples
factors
prime numbers
square numbers
cube numbers
short division
product
dividend
divisor
quotient
operations

Factors

12

1 2 3 4 6 12

The factors for 12 are 1, 2, 3, 4, 6 and 12.

20

1 2 4 5 10 20

The factors for 20 are 1, 2, 4, 5, 10 and 20.

Factor Pairs

12

1 and 12
2 and 6
3 and 4

20

1 and 20
2 and 10
4 and 5

Common Factors

A common factor is a factor that is **shared by more than one number.**
For instance 12 and 20 have the common factors **1, 2 and 4.**

Prime Numbers

A prime number has only 2 factors which are itself and 1.

1	**2**	**3**	4	**5**	6	**7**	8	**9**	10
11	12	**13**	14	15	16	**17**	18	**19**	20
21	22	**23**	24	25	26	27	28	**29**	30
31	32	33	34	35	36	**37**	38	39	40
41	42	**43**	44	45	46	**47**	48	49	50
51	52	**53**	54	55	56	57	58	**59**	60
61	62	63	64	65	66	**67**	68	69	70
71	72	**73**	74	75	76	77	78	**79**	80
81	82	**83**	84	85	86	87	88	**89**	90
91	92	93	94	95	96	**97**	98	99	100

Square Numbers

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*

Square numbers are the result of multiplying a number by itself. For instance: 4 x 4 = 16 and 5 x 5 is 25.

$4^2 = 16$ $5^2 = 25$

Cube Numbers

Cube numbers are the result of multiplying a number by itself twice. For instance: 4 x 4 x 4 = 64.

$1^3 = 1 \times 1 \times 1 = 1$

$2^3 = 2 \times 2 \times 2 = 8$

$3^3 = 3 \times 3 \times 3 = 27$

$4^3 = 4 \times 4 \times 4 = 64$

Year 5 **Multiplication and Division**

12 X 12 Multiplication Table													
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

Short Multiplication

Remember to move any regrouped numbers into the next column. Then add them to the following multiplication.

	1	2	2	
	4	2	3	4
x				7
2	9	6	3	8

Long Multiplication

	1	1	2		
			2	3	4
x				5	4
			9	3	6
	1	1	7	0	0
	1	2	6	3	6
		1			

234 x 4 = 936

234 x 50 = 11700

11700 + 936 = 12636

← Remember the zero!

Dividend, Devisor and Quotient

12 ÷ 4 = 3

Dividend — Divisor — Quotient

		1	4
Divisor →	4	5	6

Quotient

Dividend

Short Division

	0	8	2	9
6	4	$^{4}9$	$^{1}7$	$^{5}4$

4 ÷ 6 = 0 r 4

49 ÷ 6 = 8 r 1

17 ÷ 6 = 2 r 5

54 ÷ 6 = 9

Remember to move any remainders into the next column.

	0	5	8	r	3
4	2	$^{2}3$	$^{3}5$		

2 ÷ 4 = 0 r 2

23 ÷ 4 = 5 r 3

35 ÷ 4 = 8 r 3

If the calculation has a remainder you can record it with an r.