



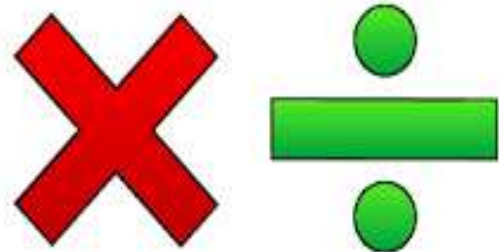
MULTIPLICATION and DIVISION

Year 3

KNOWLEDGE ORGANISER



Overview



Multiplication and Division we learn:

- Consolidate 2, 4 and 8 Times Tables
- Comparing Statements
- Related Calculations
- Multiply 2 Digits by 1 Digit
- Divide 2 Digits by 1 Digit
- Scaling
- How Many Ways?

MULTIPLICATION DIVISION

Multiplication and Division is useful learning because it is used in many areas of everyday life – e.g. shopping, cooking, or playing games. It also forms the basis for lots of other maths ideas.

Written Multiplication and Division Methods

Multiplication – No Regrouping

T	O
3	4
x	2
6	8

- Start by multiplying ones from the 2-digit number with the 1-digit number (4×2)
- Then, multiply the tens from the 2-digit number with the 1-digit number (3×2).

Division – No Regrouping

	Tens	Ones
	2	1
4	8	4

- Divide the tens by the number outside the bus stop ($8 \div 4 = 2$).
- Divide the ones by the number outside the bus stop ($4 \div 4 = 1$).

Multiplication – With Regrouping

1	T	O
	2	5
	x	3
	7	5

- Here, the resulting number from the first calculation is 10 or more (e.g. $5 \times 3 = 15$). So, place the ones (5) in the ones column and the tens (1) above the tens column. Add the carried number to the next calculation ($2 \times 3 = 6$, $6 + 1 = 7$).

Division – With Regrouping

	Tens	Ones
	1	5
3	4	15

- $4 \div 3 = 1$ with 1 remainder. This remainder is placed in the next column before the next number. The next sum therefore becomes $15 \div 3 = 5$.

3, 4 and 8 Times Tables

x	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

3 Times Table

$3 \times 1 = 3$	$3 \times 5 = 15$	$3 \times 9 = 27$
$3 \times 2 = 6$	$3 \times 6 = 18$	$3 \times 10 = 30$
$3 \times 3 = 9$	$3 \times 7 = 21$	$3 \times 11 = 33$
$3 \times 4 = 12$	$3 \times 8 = 24$	$3 \times 12 = 36$

+3
$3 + 3 = 6$
$6 + 3 = 9$
$9 + 3 = 12$
$12 + 3 = 15$
$15 + 3 = 18$
$18 + 3 = 21$
$21 + 3 = 24$
$24 + 3 = 27$
$27 + 3 = 30$
$30 + 3 = 33$
$33 + 3 = 36$
$36 + 3 = 39$
$39 + 3 = 42$
$42 + 3 = 45$
$45 + 3 = 48$
$48 + 3 = 51$
$51 + 3 = 54$
$54 + 3 = 57$
$57 + 3 = 60$
$60 + 3 = 63$
$63 + 3 = 66$
$66 + 3 = 69$
$69 + 3 = 72$
$72 + 3 = 75$
$75 + 3 = 78$
$78 + 3 = 81$
$81 + 3 = 84$
$84 + 3 = 87$
$87 + 3 = 90$
$90 + 3 = 93$
$93 + 3 = 96$
$96 + 3 = 99$

x	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

4 Times Table

$4 \times 1 = 4$	$4 \times 5 = 20$	$4 \times 9 = 36$
$4 \times 2 = 8$	$4 \times 6 = 24$	$4 \times 10 = 40$
$4 \times 3 = 12$	$4 \times 7 = 28$	$4 \times 11 = 44$
$4 \times 4 = 16$	$4 \times 8 = 32$	$4 \times 12 = 48$

+4
$4 + 4 = 8$
$8 + 4 = 12$
$12 + 4 = 16$
$16 + 4 = 20$
$20 + 4 = 24$
$24 + 4 = 28$
$28 + 4 = 32$
$32 + 4 = 36$
$36 + 4 = 40$
$40 + 4 = 44$
$44 + 4 = 48$
$48 + 4 = 52$
$52 + 4 = 56$
$56 + 4 = 60$
$60 + 4 = 64$
$64 + 4 = 68$
$68 + 4 = 72$
$72 + 4 = 76$
$76 + 4 = 80$
$80 + 4 = 84$
$84 + 4 = 88$
$88 + 4 = 92$
$92 + 4 = 96$
$96 + 4 = 100$

x	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

8 Times Table

$8 \times 1 = 8$	$8 \times 5 = 40$	$8 \times 9 = 72$
$8 \times 2 = 16$	$8 \times 6 = 48$	$8 \times 10 = 80$
$8 \times 3 = 24$	$8 \times 7 = 56$	$8 \times 11 = 88$
$8 \times 4 = 32$	$8 \times 8 = 64$	$8 \times 12 = 96$

+8
$8 + 8 = 16$
$16 + 8 = 24$
$24 + 8 = 32$
$32 + 8 = 40$
$40 + 8 = 48$
$48 + 8 = 56$
$56 + 8 = 64$
$64 + 8 = 72$
$72 + 8 = 80$
$80 + 8 = 88$
$88 + 8 = 96$
$96 + 8 = 104$

Related Calculations

We can use our understanding of times tables and number relationships to work out other multiplication sums.

$4 \times 3 = 12$

$3 \times 4 = 12$

$4 \times 30 = 120$

$40 \times 3 = 120$

Key Vocabulary

Times Tables

Multiply

Divide

Fact Families

Regrouping

Arrays

3 times tables

4 times tables

8 times tables