

# Multiplication and Division

# Knowledge Organiser

## Key Vocabulary

## Factors

## Prime Numbers

multiply

groups of

lots of

times

divide

share

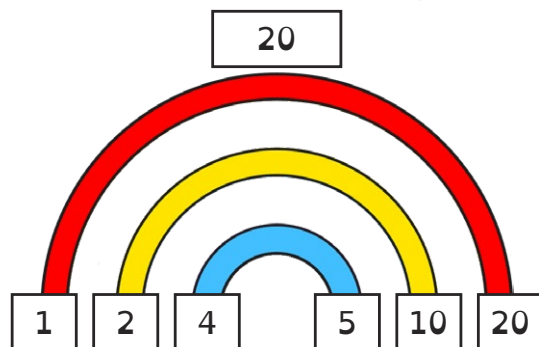
remainder

factor

multiple

product

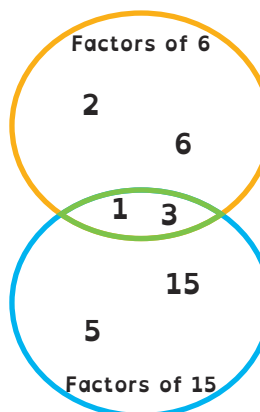
A factor is a number that divides into another number exactly, without leaving a remainder.



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

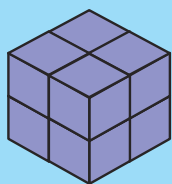
A common factor is a factor of 2 or more numbers.



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

## Squared<sup>2</sup> and Cubed<sup>3</sup> Numbers

## Related Calculations

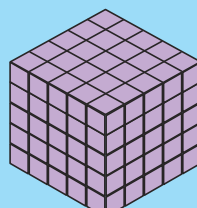
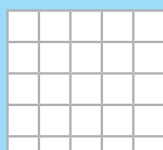


$$2^2 = 4$$

$$2 \times 2 = 4$$

$$2^3 = 8$$

$$2 \times 2 \times 2 = 8$$



$$5^2 = 25$$

$$5 \times 5 = 25$$

$$5^3 = 125$$

$$5 \times 5 \times 5 = 125$$

$$8 \times 9 = 72$$

$$80 \times 9 = 720$$

$$72 \div 9 = 8$$

$$720 \div 9 = 80$$

$$724 \times 10 = 7240$$

$$724 \times 100 = 72400$$

$$724 \times$$

$$1000 = 724000$$

$$9 \times 8 = 72$$

$$90 \times 8 = 720$$

$$72 \div 8 = 9$$

$$720 \div 8 = 90$$

$$486000 \div$$

$$10 = 48600$$

$$486000 \div$$

$$100 = 4860$$

$$486000 \div$$

$$1000 = 486$$

$$3600 \div 400 = 9$$

$$3600 \div 100 = 36$$

$$36 \div 4 = 9$$

## Short Multiplication

$$2543 \times 7 = 17801$$

	2	5	4	3
×				7
1	7	8	0	1
1	3	3	2	

Remember to move any regrouped digits into the next column. After the next multiplication, add the regrouped number to the answer.

## Long Multiplication

$$2543 \times 67 = 170381$$

		2	5	4	3
	×			6	7
	1	7	8	0	1
1	5	2	5	8	0
1	7	0	3	8	1
1	1				

Before multiplying by the number in the tens column, remember to use zero as a placeholder because the 6 in 67 is 6 tens (60).

## Short Division

		3	8
4	1	5	2

$15 \div 4 = 3$  remainder 3  
Remember to regroup any remainders and move them into the next column.

		4	5	5	r	3
5	2	2	7	8		

$28 \div 5 = 5$  remainder 3  
If your calculation has a remainder, remember to record it in the answer using the letter **r**.

## Division

$$136 \div 4 = 34$$

		3	4
4	1	3	6
—	1	2	0
		1	6
	—	1	6
			0

→  $30 \times 4$

→  $4 \times 4$