Templars Primary School Knowledge Organiser — Year 5 Multiplication and Division

Key Vocabulary

- multiply
- groups of
- lots of
- times
- divide
- share
- remainder
- factor
- multiple
- product

Multiples

Multiples are basically extended times tables.
For example, the **multiples of 4** are all the numbers that are in the 4 times table.
4, 8, 12, 16, 20
A number can be a multiple of a range of different numbers.
For example, 20 is a multiple of 1, 2, 4, 5, 10 and 20.
All numbers are multiples of 1.

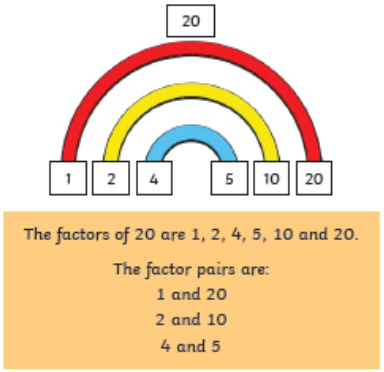
Out of these numbers, the multiples of 5 are: 25, 175 and 3000 because the numbers end in a 5 or a 0.

25 32 54 175 554 3000

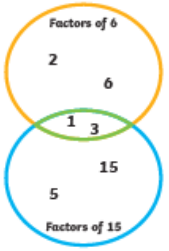
7135 is a multiple of 5
8921 is not a multiple of 5

Factors

A **factor** is one of two or more numbers that divides a given number without a remainder.
Any given number can have a large number of factors.



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

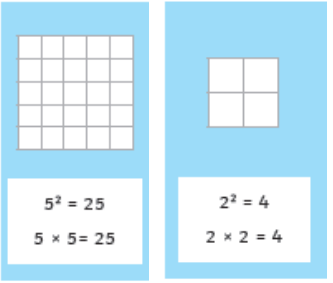


Square numbers

Square numbers have an odd number of factors and are the result of multiplying a whole number by itself.

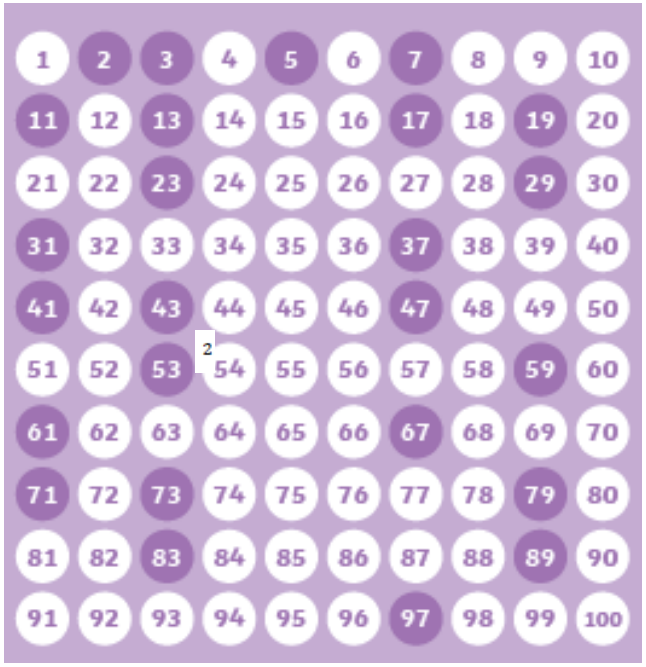
The notation for squared is ^{2}

$4^2 = 4 \times 4 = 16$



Prime Numbers

Prime numbers are numbers that only have 2 factors, 1 and itself.

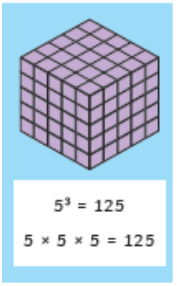


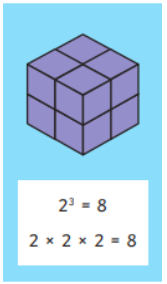
Cube numbers

A **cube number** is the result of multiplying a whole number by itself 3 times e.g. 4 x 4 x 4 = 64

The notation for cube is ^{3}

5^3 is 5 x 5 x 5 = 125

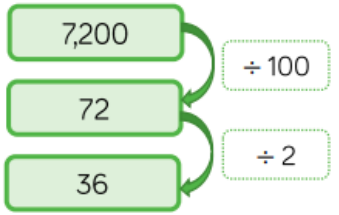




Related calculations

8 × 9 = 72 80 × 9 = 720	9 × 8 = 72 90 × 8 = 720
72 ÷ 9 = 8 720 ÷ 9 = 80	72 ÷ 8 = 9 720 ÷ 8 = 90

7,200 ÷ 200



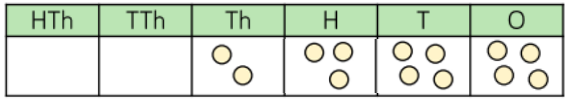
If we know 36 x 5 = 180
We also know:
36 x 50 = 1,800
5 x 360 = 1,800
500 x 36 = 18,000
360 x 500 = 180,000

Multiply by 10, 100 and 1000

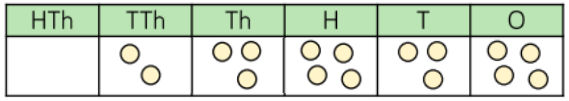
Multiplying by 10, 100 and 1000

234 x 1 = 234

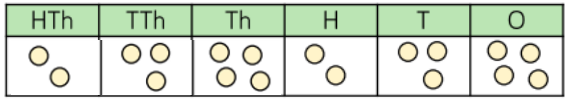
234 x 10 = 2,340



234 x 100 = 23,400

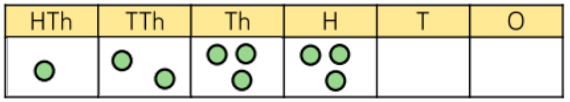


234 x 1000 = 234,000

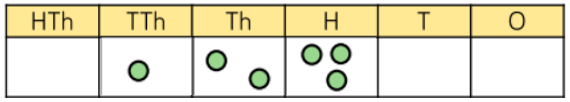


Dividing by 10, 100 and 1000

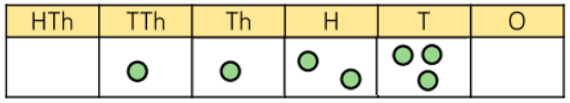
123,000 ÷ 1 = 123,000



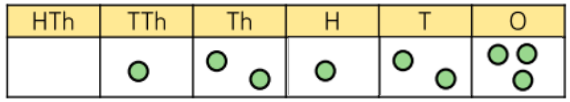
123,000 ÷ 10 = 12,300



123,000 ÷ 100 = 1,230



123,000 ÷ 1000 = 123



Multiplication

Short multiplication

2543 × 7 = 17 801

	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 × 67 = 170 381

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

Division

Short division

152 ÷ 4 = 36

		3	8
4	1	15	32

15 ÷ 4 = 3 remainder 3

Remember to regroup any remainders and move them into the next column.

With a remainder

2278 ÷ 5 = 455 r 3

		4	5	5	r	3
5	2	2	27	28		

28 ÷ 5 = 5 remainder 3

If your calculation has a remainder, remember to record it in the answer using the letter r.

Long division

136 ÷ 4 = 34

		3	4	
4	1	3	6	
−	1	2	0	→ 30 × 4
		1	6	
	−	1	6	→ 4 × 4
			0	