Year 5 – Multiplication and Division

Knowledge Organiser

Key Vocabulary

multiples

factors

factor pairs

prime numbers

prime factors

composite numbers

long multiplication

mentally

divide

short division

remainder

decimal

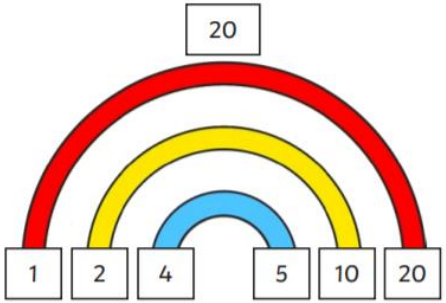
square number

cube number

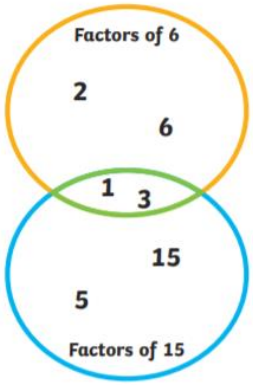
fraction

Factors

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



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

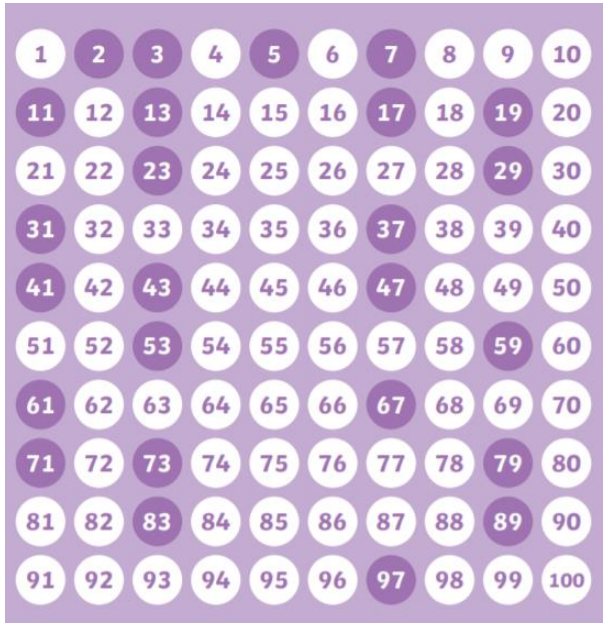


The factors of 20 are 1, 2, 4, 5, 10 and 20.

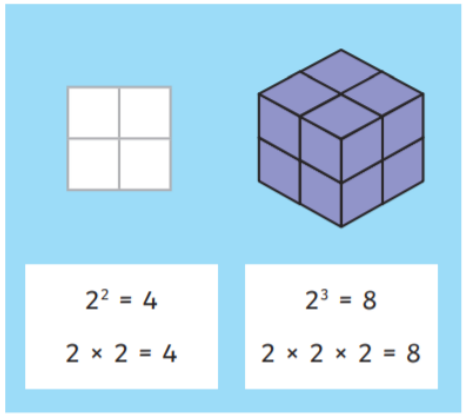
The factor pairs are:
1 and 20
2 and 10
4 and 5

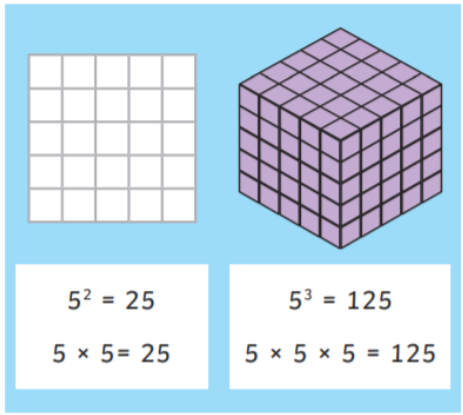
Prime Numbers

A prime number is only divisible by itself or 1.



Squared ^{2} and Cubed ^{3} Numbers





Related Calculations

$8 \times 9 = 72$
$80 \times 9 = 720$

$9 \times 8 = 72$
$90 \times 8 = 720$

$72 \div 9 = 8$
$720 \div 9 = 80$

$72 \div 8 = 9$
$720 \div 8 = 90$

Short Multiplication

$2543 \times 7 = 17\,801$

	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

$2543 \times 67 = 170\,381$

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

Division

$136 \div 4 = 34$

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

Short Division

		3	8
4	1	$^{1}5$	(3)2

15 ÷ 4 = 3 remainder 3

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

		4	5	5	r	3
5	2	2	$^{2}7$	$^{2}8$		

28 ÷ 5 = 5 remainder 3

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