

Learning Objectives

- ❖ To add and subtract whole numbers with more than 4-digits
- ❖ To be able to use formal written methods for addition
- ❖ To add and subtract numbers mentally
- ❖ To be able to use rounding to check answers
- ❖ To solve multi-step addition and subtraction problems in context
- ❖ To be able to find factor pairs of a number
- ❖ To be able to find common factors of two numbers
- ❖ To understand the vocabulary of prime numbers, factors and composite numbers
- ❖ To know prime numbers up to 19
- ❖ To know how to establish if a number is prime (up to 100)
- ❖ To use the formal written method for long multiplication
- ❖ To be able to mentally multiply and divide numbers
- ❖ To divide 4-digits by a 1-digit number using short division
- ❖ To know how to interpret remainders
- ❖ To know to multiply and divide by 10, 100 and 1000

Numbers

Square numbers result from a number being multiplied by itself (e.g. $5 \times 5 = 25$):

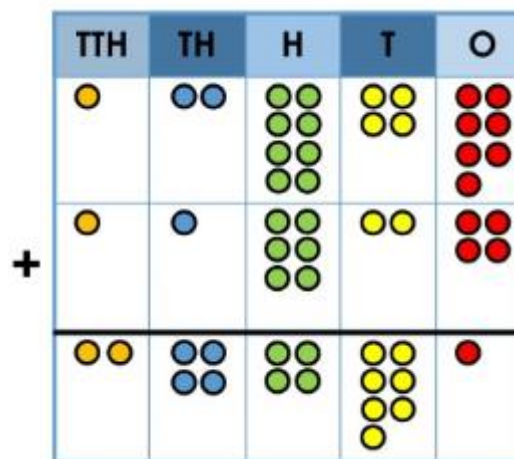
1, 4, 9, 16, 25, 36, 49, 64, 81, 100

Cube numbers result from a number being multiplied by itself twice ($2 \times 2 \times 2 = 8$):
1, 8, 27, 64, 125

A prime number has only 1 and itself as factors: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43

A composite number has factors other than 1 and itself.

Addition and Subtraction



	2	1	4	7	2
-		2	2	4	4

	1	2	8	4	7
+	1	1	6	2	4
	2	4	4	7	1
		1		1	

TTH	TH	H	T	O
●●	●	●●	●●●●	●●
	●●	●●	●●●●	●●●●

Inverse Operations

Inverse means opposite. The opposite of addition is subtraction and therefore the opposite of subtraction is addition. Using an inverse operation is a useful way of checking your answer.

Multiplication and Division

Key Vocabulary

add
plus
total
make
sum
more
altogether
increase
combined

subtract
leave
difference
less
minus
reduce
decrease
take away

multiply
product
lots of
times
as much as
groups of

divide
average
evenly
shared
split

place value

inverse

$$2543 \times 7 = 17\,801$$

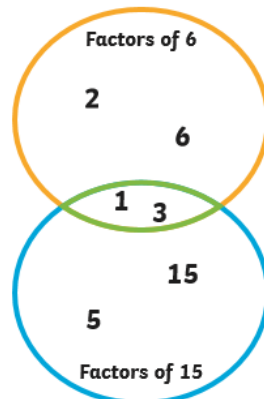
	2	5	4	3
×				7
1	7	8	0	1
1	3	3	2	

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

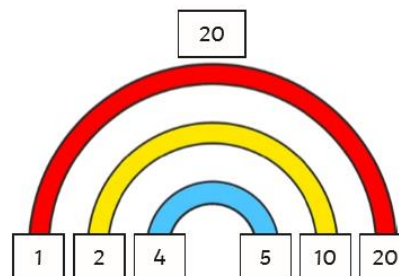
		4	5	5	r	3
5	2	2	² 7	² 8		

$$28 \div 5 = 5 \text{ remainder } 3$$

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



Factors



$$2543 \times 67 = 170\,381$$

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

What I Should Already Know:

- How to add and subtract whole numbers up to 4-digits
- The formal written methods for addition and subtraction
- How to estimate to check calculations
- How to use the inverse to check calculations
- How to solve two-step addition and subtraction problems in context
- Multiplication facts up to 12x12
- How to multiply and divide by 1 and 0
- How to multiply together three numbers
- How to recognise and use factor pairs
- How to multiply 2-digit and 3-digit numbers by a 1-digit number
- The formal written method for short multiplication
- How to solve problems involving multiplying and adding
- How to solve integer scaling problems