# Place Value

- Understand the value of each digit in a number up to 10000000
- Know how to order numbers

## Place Value of Numbers

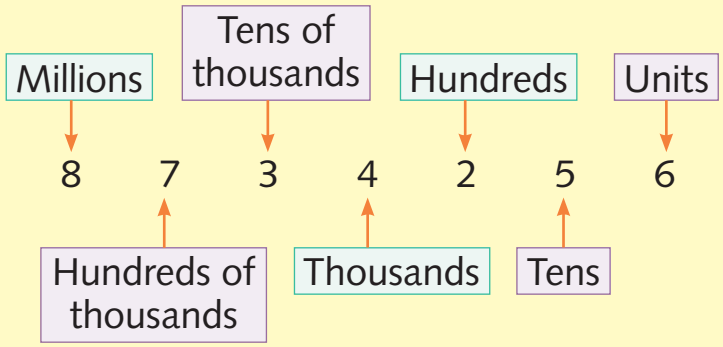
You can tell the value of a number by looking at the position of its **digits**.

### Example

Let's look at a seven-digit number:

8734256

It can help to label the number:

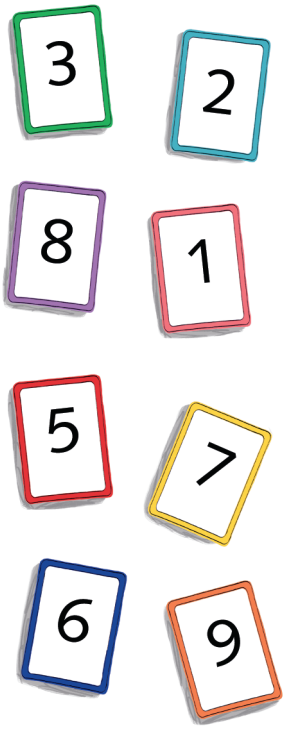



In this number:

- There are 8 millions = 8000000
- There are 7 hundreds of thousands = 700000 (700 thousand)
- There are 3 tens of thousands = 30000 (30 thousand)
- There are 4 thousands = 4000
- There are 2 hundreds = 200
- There are 5 tens = 50
- There are 6 units = 6

### Key Point

Knowing the place value of each digit helps you write numbers correctly.




In the number six thousand seven hundred and four, you will see that there are no tens.

6 7 **0** 4

You need to put a zero in the tens column as a **place holder** to make sure all the other digits stay in their correct positions.

# Ordering Numbers

You need to look at numbers to compare them and find out which number is greater.

### Example

Which is greater? 3715 or 3742

Both numbers have 3 thousands and 7 hundreds so we need to look at the next column – the TENS column – to compare them.

3715 ← has 1 TEN

3742 ← has 4 TENS

This means 3742 is greater than 3715.

You can write 'greater than' and 'less than' using symbols:

> means 'is **greater than**'

< means 'is **less than**'

So 3742 > 3715

### Tip

Imagine your symbol is a crocodile's mouth. The crocodile ALWAYS eats the LARGEST number:

3742 > 3715

or

3715 < 3742

### Quick Test

1. Write these numbers in figures:
   **a)** Thirty-two thousand nine hundred and forty-six
   **b)** Three hundred and fifty-four thousand six hundred and ninety-three
2. What value does the number 5 have in each of these numbers? Tens, hundreds or ten thousands may be preferred as answers.
   **a)** 456 **b)** 52 341 **c)** 6513
3. Put these numbers in order from largest to smallest:
   4315 4324 4253 4135 4335
4. Put > or < between these pairs of numbers to make these statements correct:
   **a)** 2315 4643 **b)** 5419 5416
   **c)** 32 556 32 546 **d)** 101 322 10 132

### Key Words

- Digit
- Place holder
- Greater than (>)
- Less than (<)

# All Kinds of Numbers

- Know the times tables and related division facts
- Learn about factors, multiples and products

## Times Tables and Division Facts

You need to know all of the times tables up to 12 x 12:

| x | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| 3 | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 | 33 | 36 |
| 4 | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 |
| 5 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 6 | 6 | 12 | 18 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 66 | 72 |
| 7 | 7 | 14 | 21 | 28 | 35 | 42 | 49 | 56 | 63 | 70 | 77 | 84 |
| 8 | 8 | 16 | 24 | 32 | 40 | 48 | 56 | 64 | 72 | 80 | 88 | 96 |
| 9 | 9 | 18 | 27 | 36 | 45 | 54 | 63 | 72 | 81 | 90 | 99 | 108 |
| 10 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 11 | 11 | 22 | 33 | 44 | 55 | 66 | 77 | 88 | 99 | 110 | 121 | 132 |
| 12 | 12 | 24 | 36 | 48 | 60 | 72 | 84 | 96 | 108 | 120 | 132 | 144 |

**Tip**

If you learn these times tables, you will find it easier and quicker to do calculations.

You can use your times table knowledge to find division facts.

**Example**

9 x 8 = 72 and 8 x 9 = 72, so:

72 ÷ 8 = 9 and 72 ÷ 9 = 8

## Factors, Products and Multiples

**Factors** are numbers that can be multiplied together to give another number.

**Example**

3 and 10 are factors of 30 (3 x 10 = 30)

6 and 4 are factors of 24 (6 x 4 = 24)

**Products** are the answers given by multiplying factors.

### Example

6 is the product of 2 x 3 ← 2 and 3 are factors

50 is the product of 5 x 10 ← 5 and 10 are factors

**Multiples** are the answers you get when you multiply a given number by any other number.

### Example

Multiples of 5 are: 5, 10, 15, 20, 25…

### Key Point

Multiples are the answers to our times tables.

## Common Factors and Common Multiples

**Common factors** are factors that are common to more than one product.

### Example

Factors of 12 are: **1**, **2**, 3, **4**, 6, and 12

Factors of 8 are: **1**, **2**, **4** and 8

So the common factors of 12 and 8 are: 1, 2 and 4.

**Common multiples** are multiples that are common to two or more numbers.

### Example

The multiples of 3 are: 3, **6**, 9, **12**, 15, **18**…

The multiples of 2 are: 2, 4, **6**, 8, 10, **12**, 14, 16, **18**…

So common multiples of 2 and 3 include: 6, 12 and 18.


### Quick Test

1. Write the two division facts that are related to 8 x 11 = 88
2. List all the factors of 30.
3. What is the product of 2, 3 and 4?
4. List the common factors of 16 and 20.

### Key Words

- Factor
- Product
- Multiple
- Common factor
- Common multiple

# Practice Questions

PS Problem-solving questions

## Challenge 1

1 Convert:

a) 25 cm to mm _____ b) 1260 m to km _____ 2 marks

2 Calculate the area and perimeter of this rectangle:


A = _____ $cm^2$

P = _____ cm 2 marks

3 Convert 19:45 to 12-hour time. _____ 1 mark

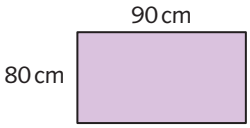
PS 4 Add 345p + £2 and give your answer in £. _____ 1 mark

## Challenge 2

1 Convert:

a) 645 ml to l _____ b) 4.126 kg to g _____ 2 marks

2 Calculate the area and perimeter of this rectangle:




A = _____ $cm^2$

P = _____ cm 2 marks

PS 3 One side of a regular pentagon measures 8 cm.

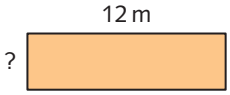
What is the perimeter of the shape? P = _____ cm 1 mark

PS 4 Chloe came back from a fortnight's holiday on 12 July.

On what date did she go on holiday? _____ 1 mark

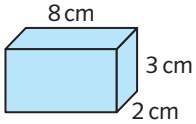
## Challenge 3

PS 1 The perimeter of the rectangle is 29 m. What is the width of the rectangle?




Width = _____ m 1 mark

2 What is the volume of this cuboid?

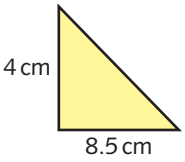



V = _____ $cm^3$ 1 mark

3 Convert 23 467 m to km.

Round your answer to one decimal place. _____ 1 mark

4 What is the area of this triangle? A = _____ $cm^2$




1 mark

# Review Questions

PS Problem-solving questions

1 What is $\frac{2}{7}$ of 42? _____ 1 mark

2 Express $\frac{24}{40}$ in its simplest form. ☐ 1 mark

3 Which fraction below is equivalent to $\frac{2}{3}$? Tick the correct answer. 1 mark

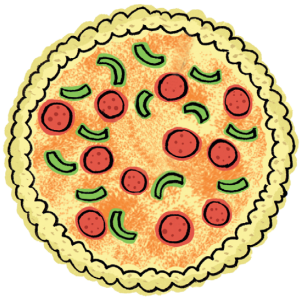
$\frac{5}{20}$ ☐ $\frac{5}{16}$ ☐ $\frac{16}{24}$ ☐ $\frac{8}{40}$ ☐

4 $\frac{5}{11} + \frac{3}{11} =$ ☐ 1 mark

5 What is half of $\frac{1}{8}$? ☐ 1 mark

6 $\frac{1}{6} \times \frac{1}{5} =$ ☐ 1 mark

PS 7 Sophia and Jacob were eating pizzas. Sophia ate $\frac{7}{10}$ of her pizza and Jacob ate $\frac{4}{5}$ of his pizza.



Who ate the most? _____ 1 mark

8 Order these decimals from largest to smallest:

3.24 2.35 3.2 2.34 3.25

_____ 4 marks

9 Round 23.71 to the nearest:

a) $\frac{1}{10}$ _____ b) whole number _____ 2 marks

10 Change $\frac{12}{5}$ into a mixed number. _____ 1 mark

11 Change $3\frac{1}{4}$ into an improper fraction. ☐ 1 mark

12 James got 75% in his maths test.

What is 75% as a fraction and a decimal? _____ 1 mark

13 Find 80% of 40. _____ 1 mark

# Mixed Questions

PS Problem-solving questions

**59** Round 34.67 to the nearest whole number. _____ 1 mark

**60** Which of the following are prime numbers?

7 16 23 25 39 41 _____ 1 mark

PS **61** Benji wants to hire a bike for four hours. Which price plan is cheaper?

**Price Plan A** – Morning or afternoon £6.50, including helmet hire

**Price Plan B** – £1.25 per hour. Helmet hire £2.00

_____ 1 mark

**62** 48.35 – 8.48 = _____ 1 mark

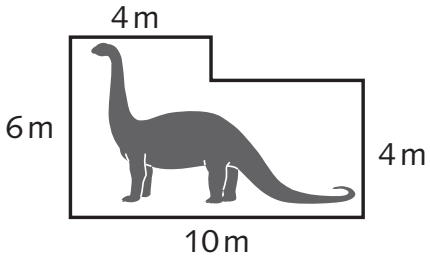
**63** Change these mixed numbers to improper fractions:

$1\frac{4}{5}$ ☐ $2\frac{3}{8}$ ☐ $1\frac{7}{10}$ ☐ $3\frac{4}{7}$ ☐ 4 marks

**64** $\frac{3}{4} \times \frac{1}{3} =$ ☐ 1 mark

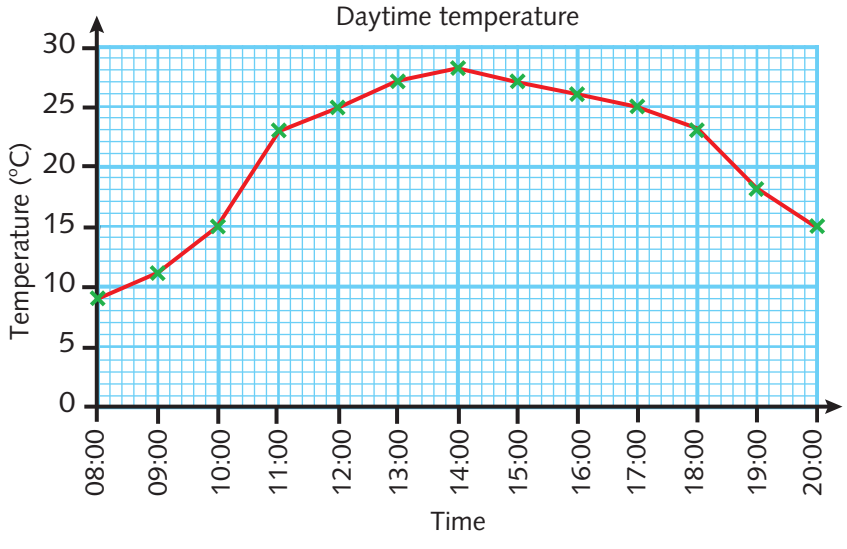
PS **65** What is the perimeter of the dinosaur paddock?

_____ m




1 mark

**66** For how many hours was the temperature above 25°C?




_____ 1 mark

# Mixed Questions

PS Problem-solving questions

**67** Order these amounts from the smallest to the largest:

£2.30 32p £3.20 £32 £2.33

_____ 1 mark

**68** Round 676328 to the nearest 10000. _____ 1 mark

PS **69** Yasmin buys a ruler and two highlighters.
She gets £1.64 change from £5. The ruler cost 98p.

How much did **one** highlighter cost? _____ 1 mark

PS **70** Skateboard equipment costs the following:

| | |
|---|---|
| **Helmet** | £11.50 |
| **Gum shield** | £3.75 |
| **Wrist guard (per pair)** | £1.65 |
| **Shin pad (per pair)** | £3.85 |

How much does Saran pay if he buys everything on the list? _____ 1 mark

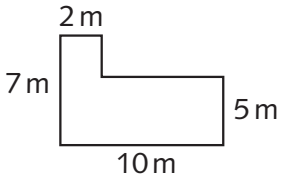
PS **71** A builder needs 3600 slates for a roof. Load: 500 Slates

How many loads must he buy?

_____ 1 mark

**72** $\frac{3}{15} + \frac{2}{5} = \square$ 1 mark

PS **73** Calculate the perimeter of Farmer Trott's field:




_____ m 1 mark

**74** List all the common factors of 24 and 30.

_____ 1 mark