

Numbers: Place Value and Total Value

1. Place Value

- This is the position of a digit in a number
- It is given in words
- The place value is identified from the right side

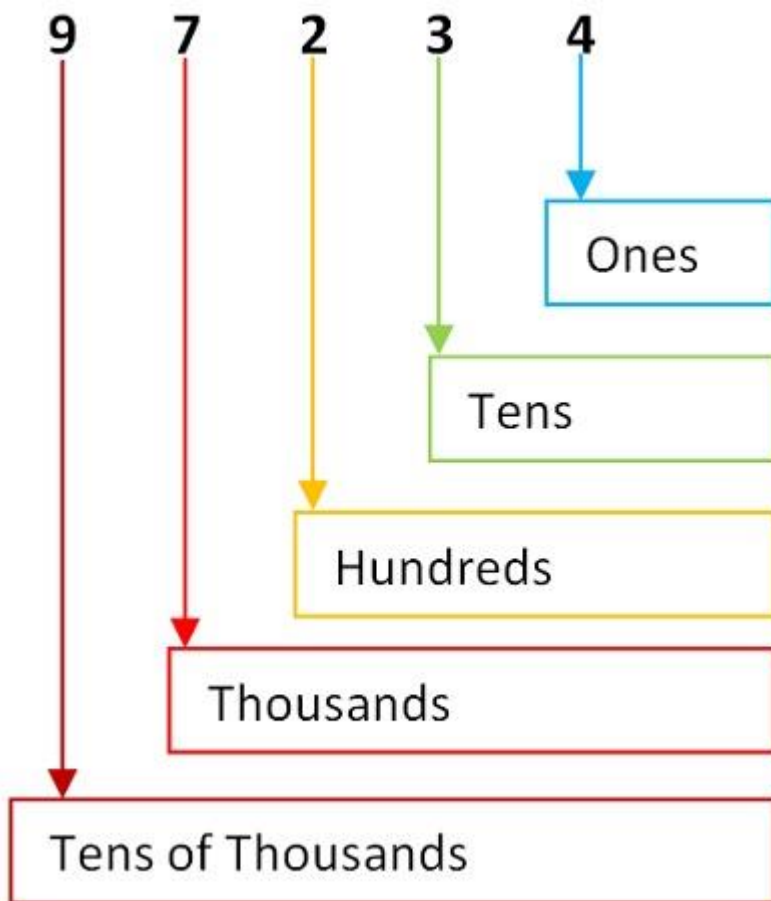
Place Value Chart

Number	Tens of Thousands	Thousands	Hundreds	Tens	Ones
478			4	7	8
1596		1	5	9	6
79452	7	9	4	5	2

Practice Question 1

If you have a number like **97234**, the place value of **2** would be?

Answer



Counting from the right, the place value of 2 is **hundreds**.

In the same number, the place value of 9 is **tens of thousands**.

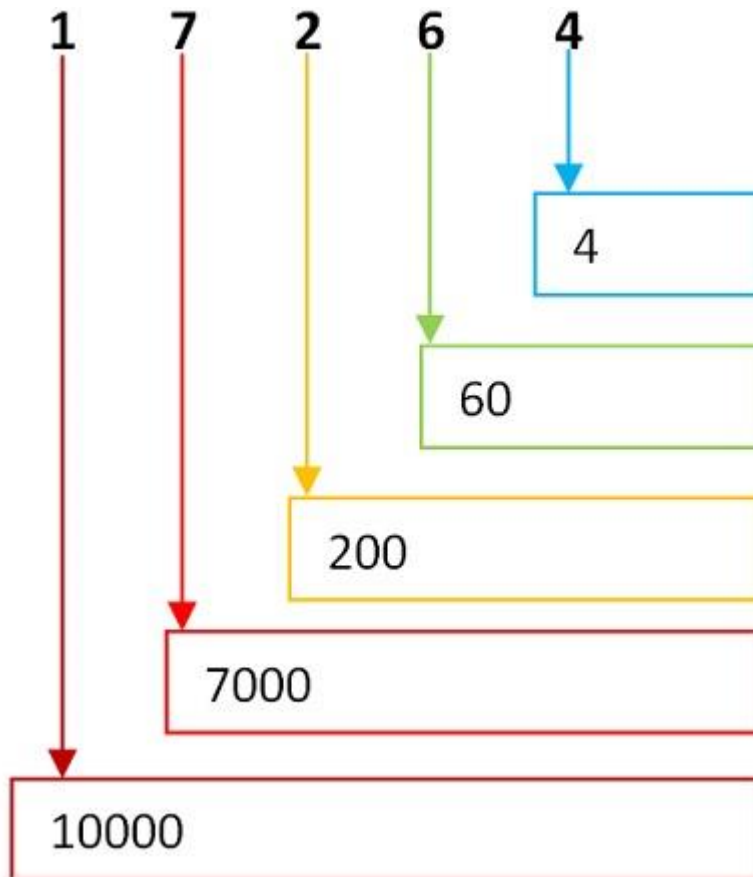
2. Total Value

- It shows the quantity and value of digit in a number
- It is given in words or symbols
- One has to first identify the place value before the total value
- Digits to the right hand of the digit are replaced with zeroes to give the total value.

Practice Question 2

The total value of **7** in the number **17264** is obtained as follows.

Answer



The place value of the number 7 is **thousands**.

All the numbers to the right of 7 are replaced with zeroes, and the ones before 7 are ignored.

Therefore, the **total value** of 7 is **7000**

Practice Questions

In the number 52831, the **total value** of 5 is **50000**

In the number 11809, the **total value** of 8 is **800**

In the number 1236, the **total value** of 1 is **1000**

Practice Questions

What is the place value and total value of 5 in the following numbers

- 62159
- 54782
- 95124
- 12015

Numbers: Arranging Numbers

1. Arranging from smallest to largest

It is arranging numbers from the one with the least value to one with the highest value.

Practice Question 1

Arrange the following numbers from smallest to largest; 598, 601, 399, 248, 733.

Answer

Hundreds	Tens	Ones	
5	9	8	<i>3rd</i>
6	0	1	<i>4th</i>
3	9	9	<i>2nd</i>
2	4	8	<i>1st</i>
7	3	3	<i>5th</i>

The digits in the hundreds (place value) are 5, 6, 3, 2, and 7.

When arranged from smallest to largest, the numbers are 2, 3, 5, 6, 7.

Then, the correct order is 248, 399, 598, 601, 733.

Practice Question 2

Arrange the following numbers from smallest to largest; 528, 557, 501, 590, 538.

Answer

Hundreds	Tens	Ones	
5	2	8	<i>2nd</i>
5	5	7	<i>4th</i>
5	0	1	<i>1st</i>
5	9	0	<i>5th</i>
5	3	8	<i>3rd</i>

The digits in the hundreds (place value) are the same, so we consider the tens column.

When arranged from smallest to largest, the numbers are 0, 2, 3, 5, 9.

Then, the correct order is 501, 528, 538, 557, 590.

2. Arranging from largest to smallest

It is arranging numbers from the one with the highest value to one with the least value.

Practice Question 3

Arrange the following numbers from the largest to the smallest;

847, 748, 487, 874, 784.

Answer

Hundreds	Tens	Ones	
8	4	7	2 nd
7	4	8	4 th
4	8	7	5 th
8	7	4	1 st
7	8	4	3 rd

First, we consider the hundreds column, the numbers are grouped as **8, 8, 7, 7, 4**.

Since number 8 and 7 occur more than once, we consider the tens column.

We can arrange them as: **87, 84, 78, 74, 48**

Therefore, the answer is 874, 847, 784, 748, 487

Algebra

Using Letters to Form Algebraic Expressions

We use letters in the alphabet to form algebraic expressions.

These letters are from **a to z**.

Everything can be represented in terms of letters.

For instance, we can use:

t to represent tables

b to represent boys

g to represent girls

a to represent books

Forming Algebraic Expressions

Practice 1

Using the letters given above, form an algebraic expression to show:

3 boys + 5 girls

Answer

Boys are represented by the letters b and girls by the letters g.

Hence

$$3 \text{ boys} = b + b + b = 3b$$

$$5 \text{ girls} = g + g + g + g + g = 5g$$

$$\mathbf{3b + 5g}$$

Question 1

Use different letters to write an algebraic expression to show:

a) 4 books + 6 pens

b) 10 chairs + 2 tables

c) 1 desk + 4 books

Show your answers to your teacher/parent/guardian.

Data Handling

Representing Data using Frequency Tables

Activity 1

Count the number of spoons, plates, and cups in your home.

John, a Grade 4 pupil counted the following:



Cups

12



Plates

10



Spoons

14

John counted:

12 cups

10 plates

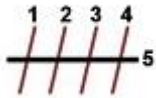
14 spoons

This information can be represented as follows:

Cups	/// //
Plates	/// //
Spoons	/// // ///

Hint:

Count the number of 'lines'. Each '/' is counted as 1 as shown below



Practice 1

Grade 4 students did an exam and scored as shown in the table below:

Student	Total Marks
Mary	### ## # //
Stephen	### ## ///
Michael	### ## ## ///
Susan	### ## ## ////
John	### ## ##
Angela	### ## ## /

Using the information above, how many marks did each student score?

Answer

- Mary: 17
- Stephen: 13
- Michael: 18
- Susan: 19
- John: 15
- Angela: 16

Interpreting Frequency Tables

Practice 2

The table below shows the number of men and women who went to the hospital in the month of May.

Day	Men	Women
Monday	20	17
Tuesday	26	19
Wednesday	21	29
Thursday	17	23
Friday	28	20
Saturday	22	12
Sunday	14	19

- On which day were the number of men who went to the hospital the highest?
- On which day were the number of women who went to the hospital the lowest?
- How many men visited the hospital on Monday, Tuesday, and Wednesday?
- How many women visited the hospital from Monday to Sunday?
- How many people went to the hospital on Friday, Saturday, and

Sunday?

Answers

a) *On which day were the number of men who went to the hospital the highest?*

Friday. 28 Men went to the hospital that day.

b) *On which day were the number of women who went to the hospital the lowest?*

Saturday. 12 women went to the hospital on Saturday.

c) *How many men visited the hospital on Monday, Tuesday, and Wednesday?*

Monday: 20

Tuesday: 26

Wednesday: 21

Hence; $20 + 26 + 21 = 67$ men

d) *How many women visited the hospital from Monday to Sunday?*

Monday: 17

Tuesday: 19

Wednesday: 29

Thursday: 23

Friday: 20

Saturday: 12

Sunday: 19

Hence; $17 + 19 + 29 + 23 + 20 + 12 + 19 = 139$ **women**

e) *How many people went to the hospital on Friday, Saturday, and Sunday?*

Men

Friday: 28

Saturday: 22

Sunday: 14

Total = $28 + 22 + 14 = 64$

Women

Friday: 20

Saturday: 12

Sunday: 19

Total = $20 + 12 + 19 = 51$

Total People: $64 + 51 = 115$ **Men and Women**

Mass

Student's Activity 1

When you go the shop, you buy some items in terms of their mass.

Some items are usually written how heavy they are.

For instance, Elizabeth found this packet of maize flour in her kitchen. What is mass of the maize flour when full?

Answer

You can also be asked: "How heavy was the packet of maize flour when full"

As indicated on the packet, when full of maize flour, it has a mass of 2 kilograms.

Mass can be given in terms of grams (g) or kilograms (kg).

Always remember that 1000 grams (g) = 1 kilogram (kg)

Addition of Mass Involving Kilograms

Practice 1

Mary bought 5kg of maize flour and 2kg of sugar. How many kilograms of maize flour and sugar did she buy?

Answer

Maize flour: 5kg

Sugar: 2kg

$$5 + 2 = 7\text{kg}$$

Practice 2

Our teacher went to the market and bought the following items:

- Maize flour: 2kg
- Wheat flour: 2kg
- Sugar: 1kg
- Rice: 2kg
- Beans: 2kg

How many kilograms of items did she buy altogether?

Answer

$$2 + 2 + 1 + 2 + 2 = 9\text{kg}$$

Subtraction of Mass Involving Kilograms

Practice 1

Work out the following:

$$30 \text{ kg} - 13 \text{ kg}$$

Answer

$$\begin{array}{r} 30 \text{ kg} \\ - 13 \text{ kg} \\ \hline 17 \text{ kg} \end{array}$$

Answer: 17kg

Practice 2

Jecinta bought 35kg of maize flour and gave 16kg to her sister.

How many kilograms of maize flour was she left with?

Answer

$$\begin{array}{r} 35 \text{ kg} \\ - 16 \text{ kg} \\ \hline 19 \text{ kg} \end{array}$$

Answer: 19kg