

# BISHOP SCOTT BOY'S SCHOOL PATNA

SESSION: 2020-21



## INDIAN NUMERAL SYSTEM

FOR CLASS 4

## Indian Numeral System

Let us consider a number, say 225. Notice that the digit 2 is used twice in this number. Both of them have a different value. We differentiate them by stating their **place value**, which is defined as the numerical value of a digit on the basis of its position in a number. So the place value of the leftmost 2 is Hundreds while the one in the center is Tens.

Coming back to the Indian numeral system, the place values of digits go in the sequence of Ones, Tens, Hundreds, Thousands, Ten Thousands, Lakhs, Ten Lakhs, Crores and so on.

In the number 10,23,45,678 the place values of each digit are:

- 8 – Ones
- 7 – Tens
- 6 – Hundreds
- 5 – Thousands
- 4 – Ten Thousands
- 3 – Lakhs
- 2 – Ten Lakhs
- 0 – Crores
- 1 – Ten Crores

The relationship between them is:

- 1 hundred = 10 tens
- 1 thousand = 10 hundreds = 100 tens
- 1 lakh = 100 thousands = 1000 hundreds
- 1 crore = 100 lakhs = 10,000 thousands

Crores		Lakhs		Thousands		Ones		
Ten Crores	Crores	Ten Lakhs	Lakhs	Ten Thousands	Thousands	Hundreds	Tens	Ones
(TC)	(C)	(TL)	(L)	(TTh)	(Th)	(H)	(T)	(O)
(10,00,00,000)	(1,00,00,000)	(10,00,000)	(1,00,000)	(10,000)	(1000)	(100)	(10)	(1)

Indian Numeral System

## International Numeral System

The place values of digits go in the sequence of Ones, Tens, Hundreds, Thousands, Ten Thousands, Hundred Thousands, Millions, Ten Millions and so on, in the international numeral system. In the number 12,345,678 the place values of each digit are:

- 8 – Ones
- 7 – Tens
- 6 – Hundreds
- 5 – Thousands
- 4 – Ten Thousands
- 3 – Hundred Thousands
- 2 – Millions
- 1 – Ten Millions

The relations between them are:

- 1 hundred = 10 tens
- 1 thousand = 10 hundreds = 100 tens
- 1 million = 1000 thousands
- 1 billion = 1000 millions

Millions			Thousands			Ones		
Hundred Millions (HM) (100,000,000)	Ten Millions (TM) (10,000,000)	Millions (M) (1,000,000)	Hundred Thousands (HTh) (100,000)	Ten Thousands (TTh) (10,000)	Thousands (Th) (1,000)	Hundreds (H) (100)	Tens (T) (10)	Ones (O) (1)

### International Numeral System

#### Comparison between Indian and International Numeral System

Comparing the two numeral systems we observe that:

- 100 thousands = 1 lakh
- 1 million = 10 lakhs
- 10 millions = 1 crore
- 100 millions = 10 crores

Indian Numeration	Crore	Ten Lakh	Lakh	Ten Thousand	Thousand	Hundred	Ten	One
Numbers	10000000	1000000	100000	10000	1000	100	10	0
International Numeration	Ten Million	Million	Hundred Thousand	Ten Thousand	Thousand	Hundred	Ten	Ones

### Indian and International Place Value Chart

#### Indian and International Place Value Chart

##### Indian Place Value Chart

Place value tells us the value of each digit in a numeral based on its position. A place value chart helps us to recognize large numbers. We read place value chart from left to right. In Indian system we start grouping the number from right in group of 3 and further in group of 2. The place value chart have been separated into groups called periods i.e. ones, thousands, lakhs and crores.

Crores		Lakhs		Thousands		Ones		
Ten Crores (TC) (10,00,00,000)	Crores (C) (1,00,00,000)	Ten Lakhs (TL) (10,00,000)	Lakhs (L) (1,00,000)	Ten Thousands (TTh) (10,000)	Thousands (Th) (1000)	Hundreds (H) (100)	Tens (T) (10)	Ones (O) (1)

Let's read this number according to Indian Place Value Chart.

3,56,245 – Three lakh fifty six thousand two hundred forty five

1,23,50,005- One crore twenty three lakh fifty thousand five

##### International Place Value Chart

The place value that is used in many countries of the world is called International Place Value Chart. To understand the place value of each digit, we put the number in place value chart so that we can identify each digit. In International system we start grouping the number from right in group of 3, called period and we put comma or space after each period to make the number easily readable.

Millions			Thousands			Ones		
Hundred Millions (HM) (100,000,000)	Ten Millions (TM) (10,000,000)	Millions (M) (1,000,000)	Hundred Thousands (HTh) (100,000)	Ten Thousands (TTh) (10,000)	Thousands (Th) (1,000)	Hundreds (H) (100)	Tens (T) (10)	Ones (O) (1)

Let's read this number according to International Place Value Chart.

37,987,450 – Thirty seven million nine hundred eighty seven thousand four hundred fifty

100,000,150- One hundred million one hundred fifty

Let's compare the two number systems

Crores		Lakhs		Thousands		Ones		
Ten Crores (TC) (10,00,00,000)	Crores (C) (1,00,00,000)	Ten Lakhs (TL) (10,00,000)	Lakhs (L) (1,00,000)	Ten Thousands (TTh) (10,000)	Thousands (Th) (1000)	Hundreds (H) (100)	Tens (T) (10)	Ones (O) (1)

  

Millions			Thousands			Ones		
Hundred Millions (HM) (100,000,000)	Ten Millions (TM) (10,000,000)	Millions (M) (1,000,000)	Hundred Thousands (HTh) (100,000)	Ten Thousands (TTh) (10,000)	Thousands (Th) (1,000)	Hundreds (H) (100)	Tens (T) (10)	Ones (O) (1)

From above comparison we observe that

100 thousands = 1 lakh

1 million = 10 lakhs

10 millions = 1 crore

100 millions = 10 crores

### Place Value and Face Value

Place value of the digit is the product of the face value of the digit and the value of its place whereas face value of a digit is the digit itself.

Let's find the face value and place value of 6 in 6, 45,100

Face Value is digit itself so face value of 6 in 6, 45,100 is '6'

Place Value of the digit is product of the face value of the digit and the value of its place so, place value of 6 in 6,45,100 is  $6 \times 1,00,000 = 6,00,000$  (6 Lakh)

### Expanded Notation

In expanded form, we expand each digit of a number to its place value.

Let's see expanded notation of the number 29,123

This can be expanded in three different ways:

1. 2 ten thousands + 9 thousands + 1 hundred + 2 tens + 3 ones
2.  $(2 \times 10,000) + (9 \times 1,000) + (1 \times 100) + (2 \times 10) + (3 \times 1)$
3.  $20000 + 9000 + 100 + 20 + 3$

Standard form of  $60000+4000+40+6$  is 64,046

# EXERCISE

## Indian and International Number System

Q1. Write the number name according to the Indian place value chart.

- a. 2,79,68,234 - \_\_\_\_\_
- b. 44,23,400 - \_\_\_\_\_
- c. 99,99,999 - \_\_\_\_\_
- d. 1,00,06,002 - \_\_\_\_\_
- e. 55,55,720 - \_\_\_\_\_
- f. 1,71,00,197 - \_\_\_\_\_

Q2. Write the number name according to the International place value chart.

- a. 500,500 - \_\_\_\_\_
- b. 112,400 - \_\_\_\_\_
- c. 7,077,777 - \_\_\_\_\_
- d. 500,000 - \_\_\_\_\_
- e. 3,999,634 - \_\_\_\_\_
- f. 4,780,004 - \_\_\_\_\_

Q3. Write in numerals.

- a. Two lakh fifty three thousand two hundred thirty
- b. Fifty two lakh twenty thousand two
- c. Thirty five million two hundred thirty four thousand two hundred
- d. Seventy million five hundred thousand one hundred two
- e. Three lakh fifteen thousand nine

Place Value and Face Value

Q4. Write the face value and place value of the underline digit in each of the following.

<u>Numeral</u>	<u>Face Value</u>	<u>Place Value</u>
<u>6</u> 7,542	_____	- _____
<u>2</u> ,43,612	_____	- _____
<u>4</u> ,800,400	_____	- _____
26, <u>77</u> , <u>129</u>	_____	- _____

Q5. Write the place value of both 6s in number 26, 57,116.

Q6. Find the sum of the place values of 4 in each of the following.

48,124 \_\_\_\_\_

41,404 \_\_\_\_\_

45,499 \_\_\_\_\_

Q7. Find the difference of the place values of 5 in each of the following.

5,335 \_\_\_\_\_

15,005 \_\_\_\_\_

65,050 \_\_\_\_\_

Q8. Fill in the blanks

a. 100 thousand = \_\_\_\_\_ lakh

b. \_\_\_\_\_ hundreds = 1 thousand

c. 100 Ones = 1 \_\_\_\_\_

Practice the questions given in the worksheet on numeration and numbers. The questions are based on one-digit numbers, two-digit numbers, three-digit numbers, lowest number, highest number, compare the numbers using less than and greater than symbols, ascending order, decreasing order, greater number and smaller number.

**9.** (i) How many one-digit numbers are there?

(ii) How many two-digit numbers are there?

(iii) How many three-digit numbers are there?

**10.** (i) Which is the lowest one-digit number?

(ii) Which is the lowest two-digit number?

(iii) Which is the lowest three-digit number?

11. (i) Which is the highest one-digit number?

(ii) Which is the highest two-digit number?

(iii) Which is the highest three-digit number?

**12.** Which number will you get if one is added to:

(i) 9

(ii) 99

(iii) 999

**13.** How many digits are there in 1000?

**14.** Write the smallest and greatest three- digit number.

**15. Put the sign < or > between the given pairs of numbers where '<' means 'smaller than' and '>' mean 'greater than'**

(i) 315 ..... 531

(ii) 679 ..... 769

- (iii) 967 ..... 769
- (iv) 759 ..... 769
- (v) 979 ..... 989
- (vi) 131 ..... 129
- (vii) 649 ..... 639
- (viii) 539 ..... 585
- (ix) 404 ..... 504

**16. Write the following in ascending order:**

- (i) 308, 312, 306, 318
- (ii) 513, 515, 510, 525
- (iii) 659, 969, 879, 769
- (iv) 569, 579, 559, 589
- (v) 432, 718, 640, 535