LESSON-1

NUMBERS AND OPERATIONS



20 students of class V studying in a primary school of Nalbari set out to Guwahati for an educational tour with their class teacher. They collected Rs. 200/- per student and hired a bus for the tour. They visited different places of Guwahati like Regional Science Centre, Sankardev Kalakshetra, Zoo, Planetarium and the Book fare that was going on at Chandmari then. Let us answer a few questions regarding the experience of their educational tour of Guwahati.



(i) Total amount collected from 20 students at the rate of Rs. 200/- per student is

Rs. $200/- \times 20 = Rs$

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- (ii) The tour party paid Rs. 2200/- as their bus fare. What amount of the total collection will remain as balance with them?
- (iii) Total amount paid to Regional Science Centre as entry fees for 21 persons (including the teacher) is Rs. and the balance amount left with them is Rs.
- (iv) The total expenditure incurred against food for 21 persons at the rate of Rs. 65/- each is Rs. $65/-\times 21 =$ Rs.
- (v) The balance amount left with the tour party is Rs.
- (vi) An amount of Rs. 450/- was given to Rantu by his father to buy books from the Book Fair and accordingly he bought the following books- one copy of Burhi Aair Sadhu at Rs. 66/-, one copy of "Aesopo's Fables" at Rs. 45/-, one copy of Spoken English at Rs. 82/- and five copies of colour books at total amount of Rs. 125/-. What is the total amount of money did Rantu spend in buying the books from the Book Fair and what balance amount was left with him?

Direction to Teachers :

The teachers will observe at how students attempt and solve each of the problems.

Go through the data given below-

- Area of the world's greatest River Island Majuli is 352 square km.
- The Ahoms ruled over Assam nearly 600 years.
- Akbar the great, ruled from 1556 AD to 1605 AD.
- The distance of Delhi from Guwahati is 1930 km.
- According to 2018 census, the number of rhinoceros in Kaziranga is 2413.
- The height of Mount Everest, the highest peak of the Himalayas is 8848 meters. Let us express the numbers in the above sentences in words–





Let us recall positional values : The teacher asked all the students to write the number "five hundred three". On inspecting the note books, the teacher found someone writing 5003. He then wrote 5003 in the board and asked the students if that was correct or not. Then a student named Kautilya stood up and said, "As per positional value of the digits the number is not correct because the positional value of the digit in the hundredth position is 0. The correct number is 503."

Based on Kautilya's answer the teacher like in his earlier classes, again explained with the help of the abacus that in the number five hundred three, the digit 3 was in unit's place, 0 in tenth place and 5 in hundredth place.



Then the teacher asked his students to work out the following exercises by making use of the punched balls in the abacus.

234 = 2 hundred + 3 ten + 4 units.





5003 X

503 V

1061 = 1 thousand + 0 hundred + 6 ten + 1 unit.



The Break up the following numbers into positional values and demonstrate in abacus system as shown above-





Now, the teacher increased another position in the abacus and asked the students the name of the fifth position.



Then a girl student named Nisha replied, "There is one ball in the fifth position. Its value is 1 'Ajut' or 10 thousand, i.e. the number in the abacus is–

10 thousand + 4 thousand + 1 hundred + 3 ten + 2 units

= 10,000 + 4,000 + 100 + 30 + 2 = 14, 132 (Fourteen thousand one hundred thirty two)

Note that 10,000 = 1 'Ajut'

Numbers and Operations

Let us learn-

In writing a 4 or 5 digit number in Indian system of numeration, a coma (,) is put in between the hundredth and the thousandth position, e.g. 14,132; 18,257; 93,452 etc. While reading, we read 14,132 as fourteen thousand one hundred thirty two, 18,257 as eighteen thousand two hundred fifty seven and 93,452 as ninety three thousand four hundred fifty two.

Let us write the numbers in expanded form-

999 = 900 + 90 + 9

Let us practise [°]

Number	Use comma	Write in expanded form
1111		
2450		
10981		
55652		
75902	C	
86712		
98910		

Directions to teachers : *Inculcate the reading habit among the students.*

Now, you think of a 5 digit number yourself and try to write it in expanded form in your note book. Compare your number with those written by others in the class.



Let us express in short form-Ŧ (a) 800 + 80 + 9=(b) 2000 + 200 + 20 + 2=(c) 600 + 0 + 30 + 1_ (d) 10000 + 6000 + 500 + 40 + 3 \equiv (e) 30000 + 0 + 0 + 60 + 7=Let us express in numbers-(a) Nine thousand eight hundred five (b) Fifteen thousand seven hundred nine =(c) Thirty five thousand ninety two Ξ (d) Sixty nine thousand six hundred \equiv (e) Ten thousand two Let us express in words-(a) 15,907 = (b) 29,008 = (c) 61,507 =(d) 70,091 = _____ (e) 92,990 =Let us arrange in ascending order-(a) 723, 732, 690, 960 690. (b) 2823, 2832, 3282, 3228 (c) 69002, 96200, 96002, 69200 (d) 68625, 68256, 68652, 68265

Numbers and Operations

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Let us write down the greatest and the least five digit numbers using the digits given below-

	Digits	The least number	The greatest number
a)	2,5,7,3,1	12357	75321
b)	6,0,7,2,4		
c)	1,6,2,3,4	50	
d)	2,1,8,9,5		

Let us write down the positional values of the underlined digits given below-

a)	14651	Ð	
b)	30725	=	
c)	92725	=	
d)	82711	=	
e)	61241	=	
f)	86702	=	

Comparing the two numbers, let us put appropriate symbol in the blank space



Note : Comparison of numbers is to be done by observing the positional values of the digits in the numbers. Firstly one has to start from the left and look at the digits of the numbers in the same position one by one. Same digits in the same positions must be over looked and immediately next digits to the right must be considered. For example, let us consider two numbers 6251 and 6235. The two numbers have same digit in their thousandth position. Also they have same digit in their hundredth position. However, in their tenth position, the former contains the digit 5 while the latter contains 3. Since 5>3, so the number 6251 is greater than 6235, i.e. 6251>6235.

Let us think over 'Who I am'

- (i) I am a 5 digit number.
- (ii) I am a number immediately preceding to the largest three digit number.
- (iii) The digit in my ten thousand's position is the difference of digits in my tenth and unit's positions.
- (iv) The digit in my thousandth position represents the standard of my class.

Now write down 'Who I am'-



Think and fill in the blank spaces :

- (a) Positional value of 9 is 95072 in _____
- (b) The least 4 digit number is _____ and the greatest 4 digit number is _____.

- (c) The number preceding the least 4 digit number is _____.
- (d) ---+ 0 = 4563
- (e) _____ 1000 = 9000
- (f) Adding 1 to the largest 4 digit number results in the least _____ digit number.

Let us learn : By adding 1 to the greatest 5 digit number, wouldn't we get the least 6 digit number i.e. 1,00,00? This number is called **one lac**.

Let us think and write down the appropriate numbers to be inserted in the blank circles and squares-





Numbers and Operations

Crore's block Unit's block Thousand's block Lac's block 10 Crore Crore 10 lac 1 lac 10 Thousand 1 Thousand 10 1 Hun. ten. Unit 7 digits 9 digits 6 digits 3 digits 2 digits 8 digits 000,000, 10,000 5 digits digits 1000 digits 100 10 000,00,00,1 0,00,00,000 0,00,000

8

9

4

7

3

Look at the table of positional values and let us learn the rules for reading out the large numbers-

Let us look at the number in the bottom row of the above table-

5

6

4

1

The digits on the unit's block are 4,7 and 3; hence its positional value is = 473

The digits on the thousand's block are 8 and 9; hence its positional value is = 89 Thousand

The digits on the lac's block are 6 and 5; hence its positional value is = 65 lac

The digits on the crore's block are 4 and 1; hence its positional value is = 41 crore

Therefore, the number is 41 crore 65 lac 89 thousand 473.

For easy reading of large numbers, we use commas, bearing three digits first and then after every two digits successively from right to left.

For example, we write 375963109 as 37,59,63,109. Look at the following number and try to read :

451736209 $9 \text{ unit} = 9 \times 1 = 9$ $0 \text{ ten} = 0 \times 10 = 00$ $2 \text{ hundred} = 2 \times 100 = 200$ $6 \text{ thousand} = 6 \times 1000 = 6000$ $3 \text{ ten thousand} = 3 \times 10,000 = 30,000$ $7 \text{ lac} = 7 \times 1,00,000 = 7,00,000$ $1 \text{ ten lac} = 1 \times 10,00,000 = 10,00,000$ $4 \text{ ten crore} = 4 \times 10,00,000 = 40,00,000$

Note : The positional value of any digit in a number increases 10 times from right to left.

Operations with numbers :

Let us add –

We have already learnt to deal with addition and subtraction of numbers consisting of 3 digits. We can use the same method to add or subtract with numbers consisting of 4 or 5 digits.

Examples :

$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
Problems for Practice :		
$1. 126 \\ + 325 \\ \hline$	$2. 806 \\ + 98$	$3. 1761 \\ + 179$
$4. 2007 \\ + 2376 \\ \hline$	$5. 1234 \\ + 891$	$6. 9 1 2 3 \\ + 4 8 2 \\ \hline \hline$
7. 7614 + 325	$8. 18625 \\ + 7928$	$9. 13782 \\ +72128$

Let us subtract :		
Examples:		
a) 3 2 1	b) 4 6 7	c) 7860
- 78	- 3 2 9	-2861
243	138	4999
Practice		
1. 728	2. 4316	3. 6782
-389	- 7 2 9	-3567
4. 8173	5. 23921	6. 26272
-2954	- 3829	-15729

Think and find the values-

(a) 3217 + 9673 = 12890; 12890 - 9673 = ?

(b) 7612 + 2892 = 10504; 10504 - 7612 = ?

(c) 8292 - 6479 = 1813; 6479 + 1813 = ?

(d) 9678 - 3859 = 5819 then 3859 + 5819 = ?

Try to solve the following problems-

- (a) Sum of two numbers is 41283. If one of them is 28239, what will be the other one?
- (b) What is the difference between 67192 and 73841?
- (c) Find the sum of the number 32721, 40621 and 72901.
- (d) What is to be added to 28709 to get the sum 78239?

Directions to teachers : Teachers would provide such problems on their own to be worked out by the students.



4.	6543	5. 8469	6. 6893
	× 3	× 5	×15
7.	8507	8. 9001	9. 2281
	× 14	× 28	$\times 15$
10.	9824	11. 1012	12. 5621
	× 12	× 34	× 84

Go through the following problems and solve them-

- 1. At the time of Magh Bihu, Binod's father earned Rs. 20,000/- by selling Rohu fish, Rs. 25,500/- by selling Common Carps and Rs. 2,500/- by selling Catfishes from his own fishery. What amount of money did he earn totally?
- 2. Monthly income of Rama's mother is Rs. 15,000/-. She saves monthly Rs. 5000/- from it and keeps in post office as fixed deposit. What amount of money does she deposit yearly in the post office and what is her monthly balance from her income?
- 3. 22,345 spectators entered a stadium with a capacity of 25,000 seats to watch a football match. How many seats remained vacant in the stadium on that day?
- 4. Ramen took 40 kg. of potols to Guwahati for selling. He sold 30 kg. of them at Rs. 40/- per kg. How much money did he earn?
- 5. In a block level sports event, a total number of 400 students from 8 schools participated. If equal number of students from each school participated in the event, what was the number of participating students from each school?