Chapter- 2

NUMBERS

STUDY NOTES

- **Three-digit numbers**
- **Counting numbers**
- **Let us learn how to read 3-digit numbers**
- **Numbers on an Abacus**
- **Before,After & Between numbers**
- **Comparision of numbers**
- **Ascending order & Descending order**
- **Place value & Face value**
- **Expanded form & Compact form**

THREE DIGIT NUMBERS

EXPLANATION:

We know that there are nine one digit numbers and they are 1,2,3,4,5,6,7,8 & 9.

When we add 1 to 9 we get 10 which is a 2-digit number.So 2-digit number starts from 10 and ends at 99.

So there are 90 two digit numbers.Similarly when we add 1 to 99 we get 100 which is a three digit number.

100 is the smallest 3-digit number and 999 is the largest 3-digit number.

One digit numbers-1,2,3,4,5,6,7,8 & 9(Largest one digit number)

9+1 = 10(Smallest 2-digit number), 99 is the largest 2-digit number.

99+1 = 100(Smallest 3-digit number)

100+1=101,101+1=102,……..998+1=999(Largest 3-digit number)

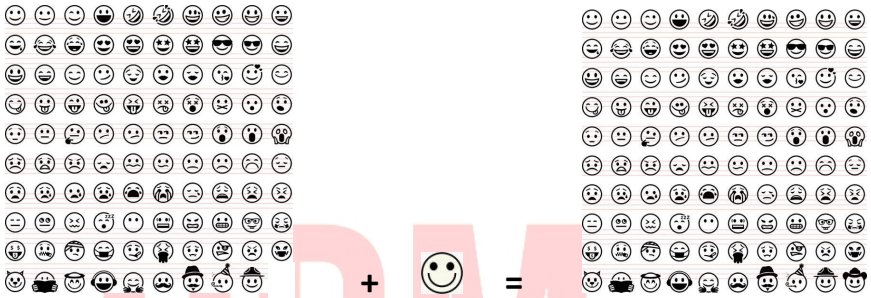
EXAMPLE:

109,187,367,598,777,800,989,……are three digit numbers.

COUNTING NUMBERS:

EXPLANATION:

The number which is one more than 99 is hundred.



99 + 1 = 100

EXAMPLES:

The number one more than 100 is 101.

100 + 1 = 101

The number 3 more than 100 is 103.

100 + 3 = 103

The number 5 more than 100 is 105.

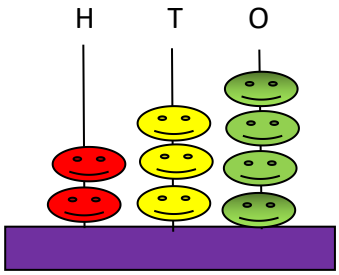
100 + 5 = 105

NUMBERS ON ABACUS:

EXPLANATION:

An abacus will help us to learn about counting 3-digit numbers or numbers beyond 99.An abacus has spikes named as O, T, H from right to left. O stands for ones, T stands for tens and H stands for hundreds. We place beads on the spikes to represent numbers and no spike can be placed more than 9 beads.

EXAMPLE: 1

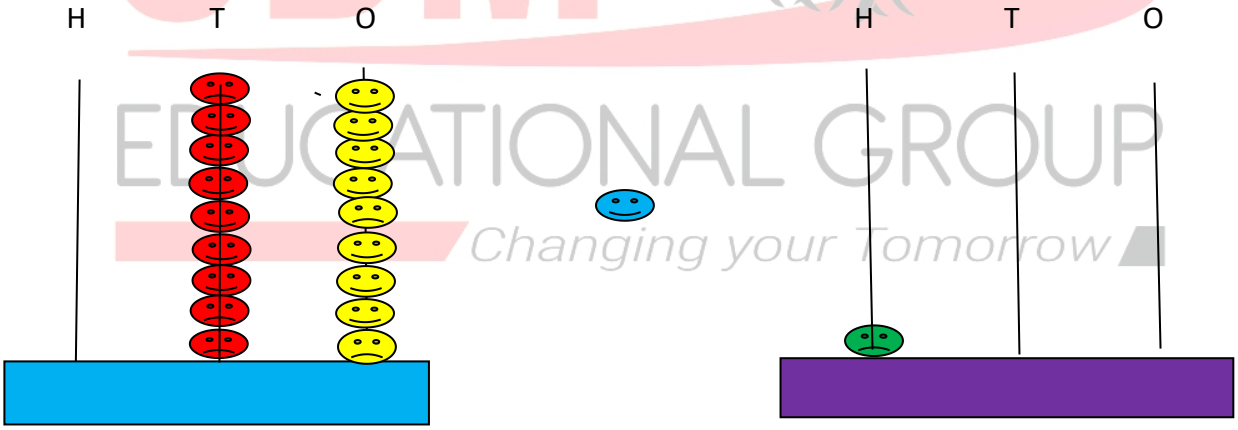


We can represent the 3-digit numbers like 234 on an abacus as 4 beads on ones ' spike . 3 beads on tens' spike and 2 beads on hundred spike.

EXAMPLE: 2

Now consider the number 99.We represent it on an abacus as shown.Now if we add one more to 99,there will be 10 ones in the ones spike.10 ones = 1 ten, We carry over this one to the tens' spike. It will now have ten tens.

But 10 tens = 1 hundred So we put one bead on the hundreds' spike.



So abacus is an instrument made up of sticks and beads. It can be used to represent numbers, it can also b e used to count,add,subtract,multiply…etc.

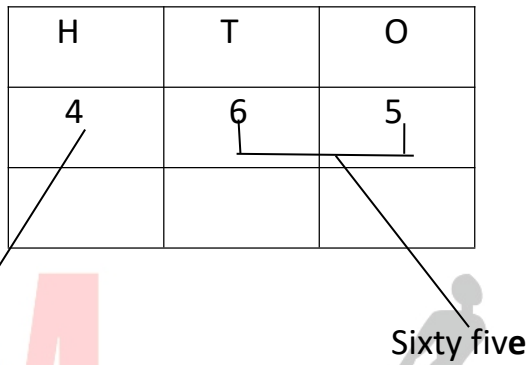
Similarly we can represent some more three digit numbers on abacus like 304,256,378,…… etc.

LET US LEARN HOW TO READ 3-DIGIT NUMBERS

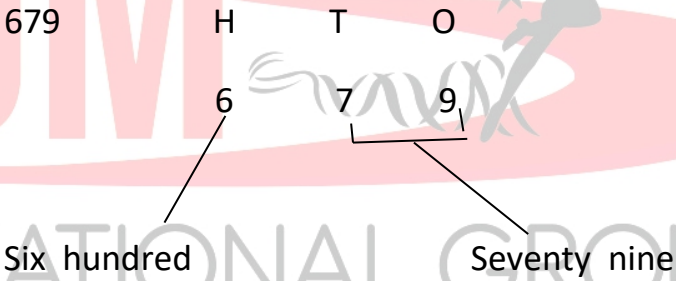
EXPLANATION:

A 3-digit number contains 3-digits from left to right.It has 3 places hundreds,tens and ones.So to read,first we will count and read the number of hundreds .Then we will read the number formed by the last two digits together.

EXAMPLE:1 Read 465



EXAMPLE:2 Read 679



EXAMPLE:3

Write the names of the following numbers.

169- One hundred sixty nine

248- Two hundred forty eight

777- Seven hundred seventy seven

EXAMPLE:4

Write the following in figures.

Three hundred ninety six- 396

Five hundred forty nine- 549

Eight hundred fifty three-853

Nine hundred thirty four- 934

BEFORE, AFTER AND BETWEEN NUMBERS:

EXAMPLE: Look at the following numbers.

309, 310, 311, 312, 313, 314

- 309 comes before 310.
- 311 comes after 310.
- 310 comes between 309 and 311.

EXAMPLE:

EXAMPLE:

- 190 comes after 189.
- 654 comes before 655.
- 700 comes between 699 and 701.

COMPARISION OF NUMBERS:

GREATER THAN > LESS THAN < EQUAL TO =

- For the greater number on the left side than right,we put '>' sign.
- For the smaller number on the left side than right,we put '<' sign.
- For the same numbers on both the sides,we put '=' sign.

EXAMPLE:1

8 > 5, 45 > 36 & 725 > 625

5 < 8, 36 < 45 & 435 < 560

9 = 9, 88 = 88 & 990 = 990

❖ Comparing Numbers With Different Number of Digits:

The number with greater number of digits is always greater.

EXAMPLE:2

Compare 98 and 9. Here 98 has 2 digits & 9 has 1 digit. So 98 > 9.

Compare 784 and 63. Here 784 has 3 digits & 63 has 2 digits. So 784 > 63.

❖ Comparing Numbers With Same Number of Digits:

The number with more hundreds is greater.

EXAMPLE:3

Compare 375 and 793.

To compare the given number,we will compare hundred place digits,

As 3 < 7. So 375 < 793

If the hundreds are equal,then the number with more tens is greater.

EXAMPLE:4

Compare 546 and 587.

The hundred place digit is 5 in both the numbers, so we will compare the tens place digits.

As 4 < 8 So 546 < 587

If both the hundreds and tens are equal,then the number with more ones is greater.

EXAMPLE:5

Compare 679 and 674.

As the hundred and tens place digits are same in both the numbers .So we will compare the ones place digits.Compare 9 and 4, 9 > 4.

So, 679 > 674

EXAMPLE:6

Put the correct sign > (greater than), <(less than) and = (equal to).

432 (>) 65

654 (<) 456

199 (=) 199

ASCENDING ORDER:

Arrangement of numbers from smaller to greater is called the ascending order of numbers.

EXAMPLE:1

Arrange the numbers in ascending order.

454, 792, 63, 138, 695

Ascending order- 63,138,454,695,792

- The first number in an ascending order is the smallest number.
- The last number in an ascending order is the greatest number.

In the above example 63 is the smallest number and 792 is the largest number.

DESCENDING ORDER:

Arrangement of numbers from greater to smaller is called the descending order of numbers.

EXAMPLE:1

Arrange the numbers in descending order.

657, 675, 612, 686, 633

Descending Order- 686, 675, 657, 633, 612

- The first number in a descending order is the greatest number.
- The last number in a descending order is the smallest number.

In the above example 686 is the greatest number and 612 is the smallest number.

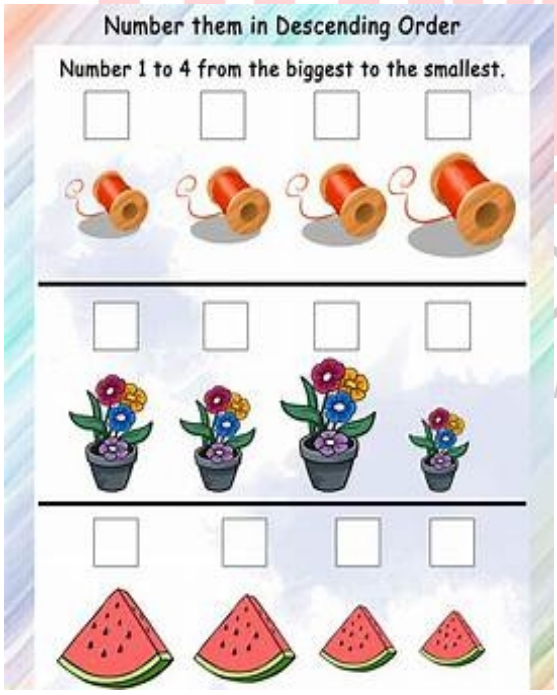
EXAMPLE:2 Arrange the numbers in descending order.

289, 943, 792, 512, 840

Descending Order- 943, 840, 792, 512, 289

EXAMPLE:3

Number 1 to 4 the pictures from biggest to smallest.



EXAMPLE:4

Colour the greatest number in green and smallest number in pink.

128, 765, 821, 247, 178

334, 237, 630, 325, 780

985, 673, 743, 584, 112

PLACE VALUE:

Place value of a digit in a number depends upon its place or position.

EXAMPLE: 1

Write the place value of all the digits in the number 479.

H T O

4 7 9

There are 4 hundreds in the above number.

So, the place value of the digit 4 is, $4 \times 100 = 400$

There are 7 tens in the above number.

So, the place value of the digit 7 is, $7 \times 10 = 70$

There are 9 ones in the above number .

So, the place value of the digit 9 is, $9 \times 1 = 9$

4 7 9

9 ones = 9

7 tens = 70

4 hundreds = 400

Remember:The place value of zero is always zero.

EXAMPLE:2

Write the place value of the coloured digit in each of the following.

2 5 6 5 tens = $5 \times 10 = 50$

4 3 9 9 tens = $9 \times 10 = 90$

7 4 7 7 hundreds = $7 \times 100 = 700$

FACE VALUE:

The face value of a digit in a number is equal to the digit itself. The face value does not depend upon the place or position of a digit in the number.

EXAMPLE:1

Consider the numbers 789 and 576.

The face value of 7 hundreds in 789 is 7.

The face value of 7 tens in 576 is also 7.

Similarly, the face value of 8 tens in 789 is 8, 9 ones in 789 is 9 and so on.

EXAMPLE:2

Write the face value and place value of all the digits in the number 637.

Digit	Face Value	Place Value
6	6	6 × 100 = 600
3	3	3 × 10 = 30
7	7	7 × 1 = 7

EXAMPLE:3

Complete the following with respect to the coloured digits.

NUMBER	FACE VALUE	PLACE VALUE
3 5 7	*5*	*50*
7 3 8	*8*	*8*
9 8 5	*9*	*900*

The place of a digit in a number does not change the face value of the digit.

EXPANDED FORM:

Expanded form or expanded notation is a way of writing numbers to see the math value of individual digits. When numbers are separated into individual place values.

EXAMPLE:1

Consider the number 659.

659 = 6 hundreds + 5 tens + 9 ones

The place values of the digits are -

6 hundreds = 600

5 tens = 50

9 ones = 9

So, the expanded form of 659 is :

659 = 600 + 50 + 9

EXAMPLE:2

Write the expanded forms of the following:

764 = 700 + 60 + 4

159 = 100 + 50 + 9

485 = 400 + 80 + 5

632 = 600 + 30 + 2

Expanded form for a number containing zero.

EXAMPLE:1

Consider the number 508.

508 = 5 hundreds + 0 tens + 8 ones

The place values of the digits are -

5 hundreds = 500

0 tens = 0

8 ones = 2

So the expanded form of 508 is-

508 = 500 + 0 + 8 or 508 = 500 + 8

EXAMPLE:2

Write the expanded form of 300.

300 = 3 hundreds + 0 tens + 0 ones

The place values of the digits are -

3 hundreds = 300

0 tens = 0

0 ones = 0

So the expanded form of 300 is-

300 = 300 + 0 + 0 = 300

COMPACT FORM

Compact form or standard form is a way of writing down very large numbers or very small numbers easily. OR

To write an expanded number in compact form, we arrange the number under hundreds, tens and ones columns and write the extreme left digits of each term.

EXAMPLE:1

Write the standard form of 700 + 60 + 8.

Hundreds Tens Ones

7 hundreds + 6 tens + 8 ones

7 0 0 + 60 + 8

↓ ↓ ↓

7 6 8 = 768

So the compact /standard form of 700 + 60 + 8 = 768

EXAMPLE:2

Write the numbers in the compact form.

300 + 8 = 308

600 + 90 + 5 = 695

200 + 30 + 4 = 234

EXAMPLE:3

Write the following in standard form.

5 hundreds + 7 tens + 8 ones = 578

8 hundreds + 6 tens + 5 ones = 865

7 hundreds + 4 tens + 3 ones = 743

MIND MAP


ASCENDING ORDER AND DESCENDING ORDER
PLACE VALUE AND FACE VALUE
NUMBERS ON ABACUS
BEFORE, AFTER AND BETWEEN NUMBERS
NUMBERS
COMPARING NUMBERS
COUNTING NUMBERS
THREE DIGIT NUMBERS
EXPANDED FORM AND COMPACT FORM
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