Chapter- 2

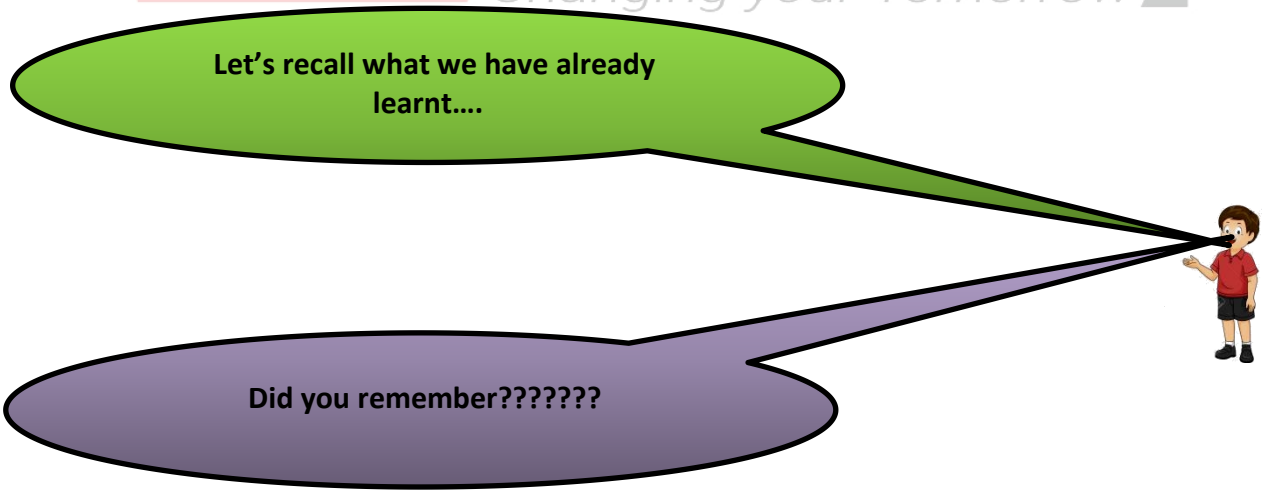
NUMBERS

STUDY NOTES

* Revision, Four Digit Numbers
* Reading 4-digit numbers
* Successor and Predecessor
* Numbers using Abacus
* Place Value, Face Value
* Expanded Notation, Expanded Form and Compact Form
* Comparison of Numbers
* Arranging Numbers
* Forming Numbers with the given Digits
* Even and Odd Numbers
* Numbers beyond 9999, Write in figures, Write in words

1. Revision, Four Digit Numbers

EXPLANATION



WE HAVE LEARNT:

1. The numbers 0,1,2,3,4,5,6,7,8,9 are one-digit numbers or simply called digits.
2. 9 is the greatest 1-digit number.
3. 0 is the smallest 1-digit number.
4. 99 is the greatest and 10 is the smallest 2-digit number.
5. 999 is the greatest and 100 is the smallest 3-digit number.

REMEMBER:

* When we add 1 to any greatest number it gives the smallest number of the next set of numbers.

➢ For example:

Greatest 1-digit number + 1 = The smallest 2-digit number
9 + 1 = 10
Greatest 2-digit number + 1 = The smallest 3-digit number
99 + 1 = 100
Greatest 3-digit number + 1 = The smallest 4-digit number
999 + 1 = 1000

AND SO ON …….

SIMILARLY:

* When we subtract 1 from any smallest number it gives the greatest number of the previous set of numbers

➢ For example:

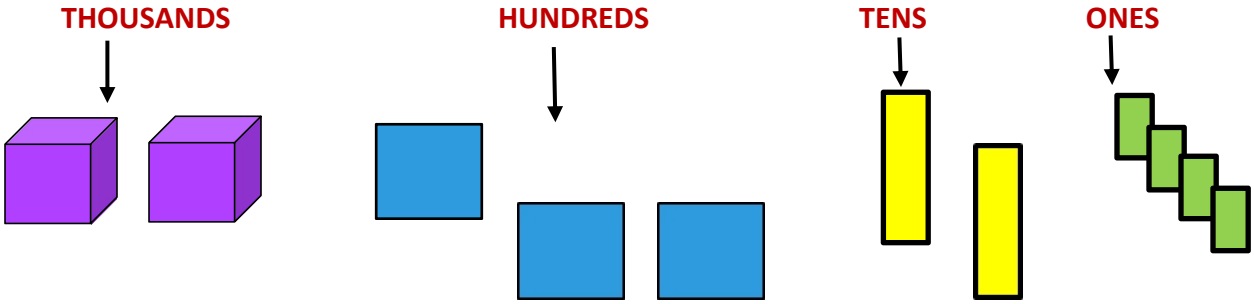
Smallest 2-digit number − 1 = The greatest 1-digit number
10 − 1 = 9
Smallest 3-digit number − 1 = The greatest 2-digit number
100 − 1 = 99
Smallest 4-digit number − 1 = The greatest 3-digit number
1000 − 1 = 999

In 4-digit numbers we have another place to the right of HUNDRED place called THOUSAND.

We can form numbers from 1000 to 9999 by using thousand with cubes, hundred with sheets, tens with stripes, ones with slips.

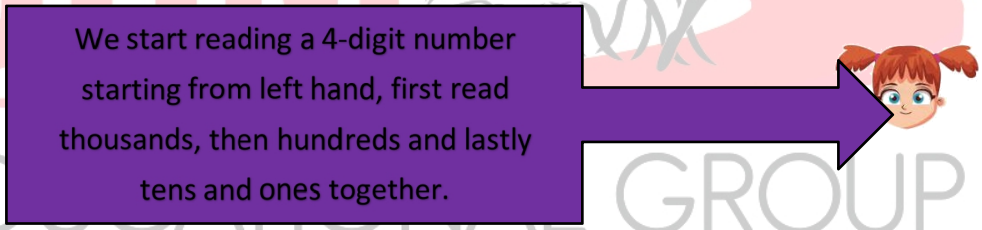
To write 4-digit numbers we need four places. Starting from the left these are thousands place (TH) , hundreds place (H) , tens (T) and Ones place (O)

➢ **For example:**



Thousands	Hundreds	Tens	Ones
2	3	2	1

2. Reading 4-digit numbers



➢ **For example:**

Th	H	T	O
5	3	4	9

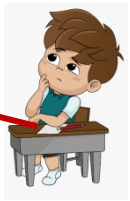
THREE HUNDRED

FIVE THOUSANDS

FORTY NINE

3. Successor and predecessor

The number that comes just after a given number is called its successor or to get successor of a number add 1 to the given number.



- **For example:**

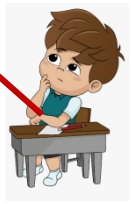
JUST AFTER is also called SUCCESSOR

5999 __6000__ (The blank is on the RIGHT side of the number)

The number that comes just before a given number is called its predecessor or to get predecessor of a number subtract 1 from the given number.

- **For example:**

JUST BEFORE is also called PREDECESSOR



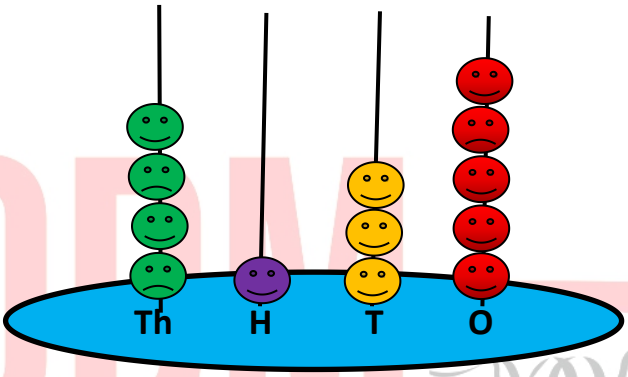
__1560__ 1561 (The blank is on the LEFT side of the number)

4. Numbers using Abacus

* An abacus is a manual aid to calculate the consisting beads or disks or strings within a usually wooden frame. The abacus itself does not calculate, it's simply a device for helping a human being to calculate by remembering what has been counted.

➢ **For example:**

In 4135, there is 5 in the ones place. So, we put 5 beads in the ones column.
4135 has 3 in the tens place, so we put 3 beads in the tens column.
The digit in the hundred place is 1. So, the hundreds column has 1 bead.
There are 4 thousand in 4635. So, we put 4 beads in the thousands column.



5. Place Value, Face Value

A 3-digit number begins at the ones period i.e. hundreds place
A 4-digit number begins at the thousands period i.e. thousands place.
To represent a 4-digit number in a place value chart 2 periods are required.
Ones period consists three places--hundreds, tens, ones and one of the thousands periods which consists ten thousands and thousands.
Here we consider only thousands place to represent a 4-digit number.
The 4-digit number 6213 can be represented in the place value chart as follows:

➢ **For example:**

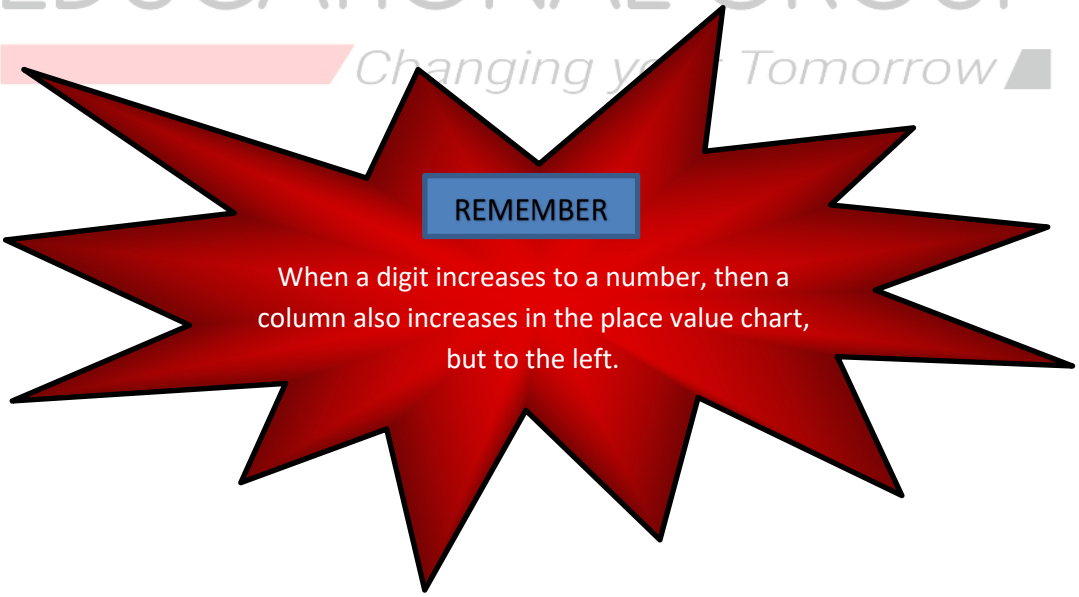
If we consider a four-digit number

Thousands	Hundreds	Tens	Ones
6	2	1	3

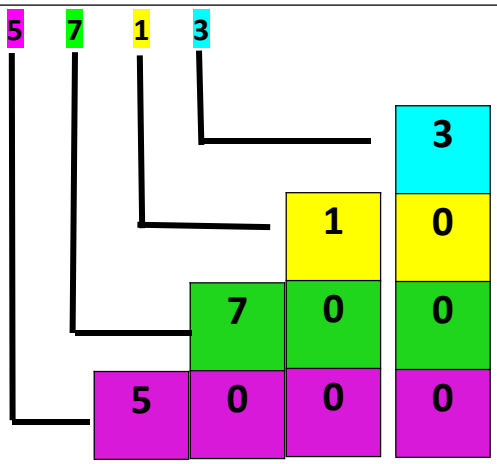
The number in the place value chart shows that there is:
six thousand, two hundred, one ten and 3 ones.
BUT……. It is read as six thousand two hundred thirteen.

Now let us see when the number is more than 9999. It will be a five-digit number.

Ten Thousands	Thousands	Hundreds	Tens	Ones
5	6	2	1	3



Another way to represent place value is as follows:



FACE VALUE : Face Value of a digit is the digit itself.

➢ **For example:**

In 9128, the face value of:
9 is 9 1 is 1 2 is 2 8 is 8

6. Expanded Notation, Expanded Form and Compact Form

When we expand a number to show the value of each digit, we are writing the number in the expanded form. Reducing the number based on the place value is known as short form or compact form.

➢ **For example:**

1. Write the expanded form for 7528.

Solution:

1st way: 7 thousands + 5 hundreds + 2 tens + 8 ones

2nd way: 7 × 1000 + 5 × 100 + 2 × 10 + 8 x 1

3rd way: 7000 + 500 + 20 + 8

2. Write the expanded form for 13964.

Solution:

1st way: 1 ten thousand + 3 thousands + 9 hundreds + 6 tens + 4 ones

2nd way: 1 × 10000 + 3 × 1000 + 9 x 100 + 6 × 10 + 4 x 1

3rd way: 10000 + 3000 + 900 + 60 + 4

3. Write the compact (short) form for the given expanded forms.

Solution:

Expanded Form	Compact Form
(i) 2 thousands + 6 hundreds + 5 tens + 3 ones	2 6 5 3
(ii) 7 x 1000 + 4 x 10 + 9	7 0 4 9
(iii) 9000 + 70	9 0 7 0

7. Comparison of Numbers

EXPLANATION

'>' symbol implies greater than

'=' symbol when both sides are same

'<' symbol implies smaller than

➢ **For example:**

5254 > 3245

3404 = 3404

3022 < 3635

Let us compare two 4-digit numbers:

5 3 6 1 and 5 3 9 5

Thousands	Hundreds	Tens	Ones
5	3	6	1
5	3	9	5
SAME	SAME	6 < 9	

So, we can say 5 3 6 1 < 5 3 9 1

REMEMBER

Start comparing from the first digit from the left that is the thousands place in a 4-digit number. If the number in the thousands place, then compare the hundreds place.

8. Arranging Numbers

EXPLANATION

ASCENDING ORDER

means smallest to greatest.

DESCENDING ORDER

means greatest to smallest.

➢ **For example:**

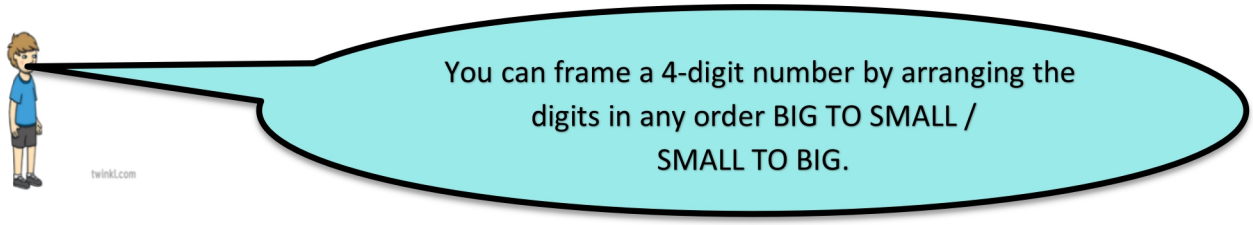
* 5146 , 4635 , 6245, 1537 , 9541

→ 1537, 4635 , 5146 , 6245 , 9541 (In ascending order)

* 3598 , 7920 , 8126 , 4312 , 6420

→ 8126 , 7920 , 6420 , 4312 , 3598 (In descending order)

9. Forming Numbers with the given Digits


You can frame a 4-digit number by arranging the digits in any order BIG TO SMALL / SMALL TO BIG.


REMEMBER
When you arrange digits BIG to SMALL you get the greatest number.


REMEMBER
When you arrange digits SMALL to BIG you get the smallest number.
BUT……
Never start writing a number with '0'

➢ **For example:**

Form GREATEST / SMALLEST 3-digit numbers using the given digits:

	GREATEST	SMALLEST
2 , 7 , 5 , 8	8 7 5 2	2 5 7 8
9 , 3 , 6 , 0	9 6 3 0	3 0 6 9

10. Even and Odd Numbers

EXPLANATION

If a number has 0, 2, 4, 6 or 8 in the ones place it is an EVEN NUMBER.

If a number has 1, 3, 5, 7 or 9 in the ones place it is an ODD NUMBER.

➢ **For example:**

EVEN NUMBERS - 1000 , 1002 , 1004 , 1006 .....

ODD NUMBERS - 1001 , 1003 , 1005 , 1007 .....

SOME MORE FACTS ABOUT EVEN AND ODD NUMBERS

1. The smallest odd number is 1.
2. The smallest 4-digit odd number is 1001.
3. The greatest 4-digit odd number is 9999.
4. The smallest even number is 2.
5. The smallest 4-digit even number is 1000.
6. The greatest 4-digit even number is 9998.
7. '0' when it is in ones place of any number it makes that number EVEN. But alone '0' is not a number as it does not have any value when written alone.

11. Numbers beyond 9999, Write in figures, Write in words

EXPLANATION

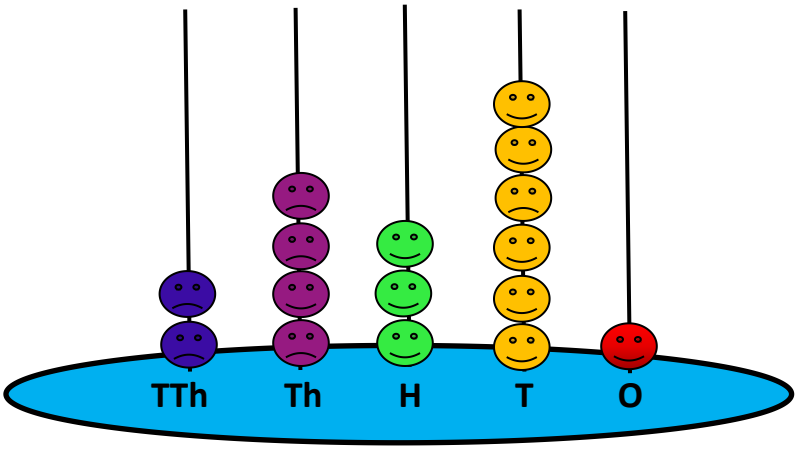
10 THOUSANDS = 1 TEN THOUSANDS

When we add 1 to 9999 we get ten thousand.

9999 + 1 = 100000

A number beyond 9999 is a 5-digit number. If we represent a number beyond 9999 in abacus there is another spike to the left of THOUSANDS place called TEN THOUSAND.

Let us represent the 5-digit number 2 4 3 6 1 in an abacus



➢ **For example:**

WRITE IN FIGURES :

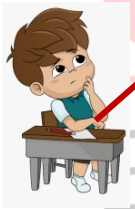
Seventy four thousand two hundred fifty – 7 4 2 5 0

Twenty nine thousand three hundred forty five – 2 9 3 4 5

WRITE IN WORDS :

18475 – Eighteen thousand four hundred seventy five

69000 – Sixty nine thousand



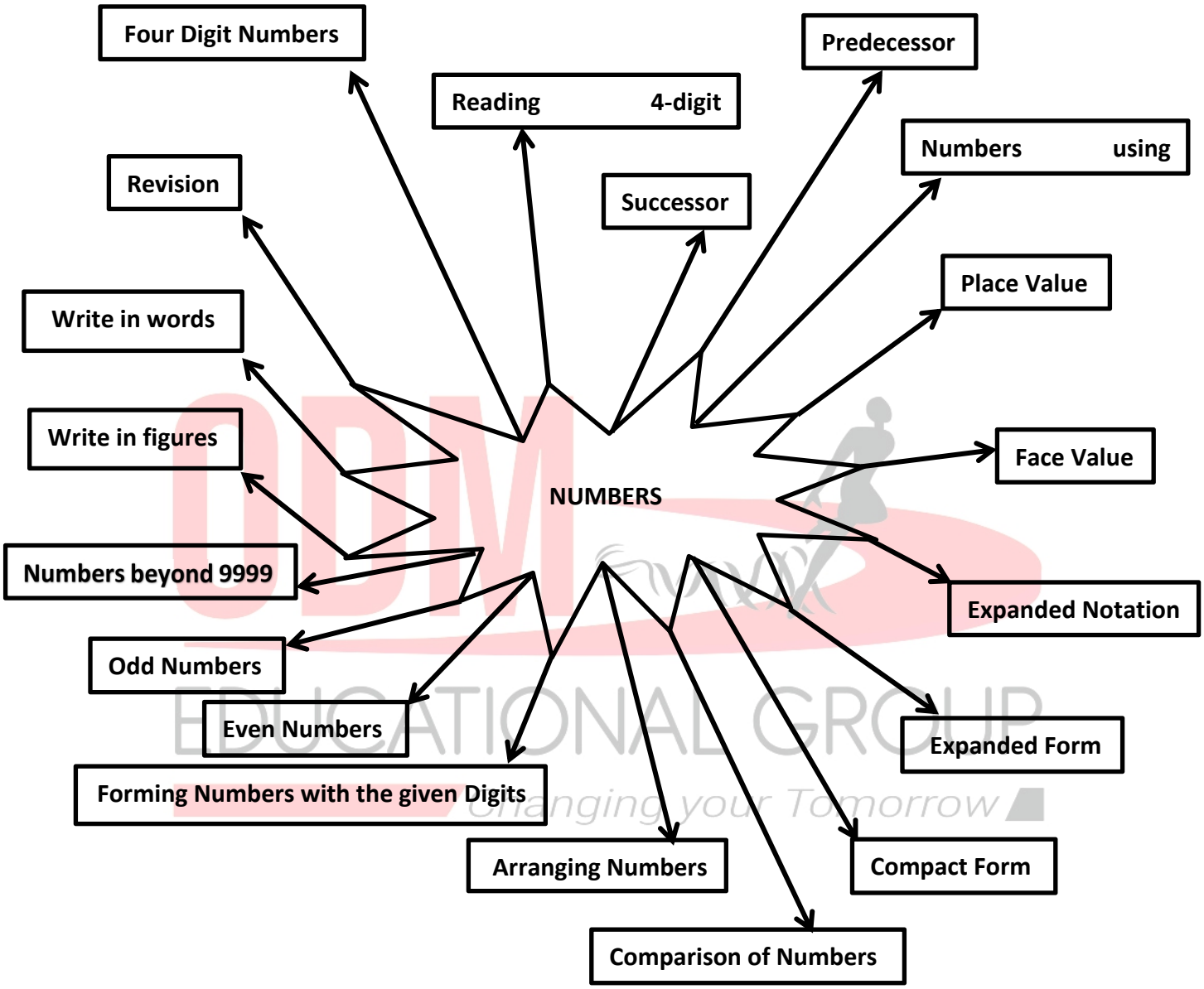
REMEMBER

We read both ten thousand and thousand places together like tens and ones.

COMMON ERROR

Never make mistake to write place values in plural form while writing the numbers in words.

MIND MAP



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