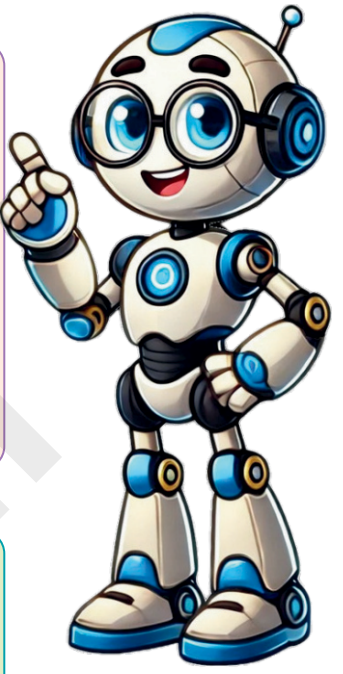
2 Numbers Upto Ten Thousand

We'll cover the following key points:

- →4-digit Numbers
- →Formation of Numbers
- →Understanding 4-digit Numbers on the Abacus
- →Finding the Face Value and Place Value of Numbers
- →Expanded Form of a Numeral
- →Ordering of Numbers
- →Arranging Numbers in Ascending and Descending Order
- →Roman Numerals



Hi, I'm EeeBee

Do you Remember fundamental concept in previous class:

In class 2nd we learnt

- →Representing Number on Abacus
- →Expanded Form
- →Place Value
- →Ordering of Number

In class 1st we learnt

- →Ascending Descending Order

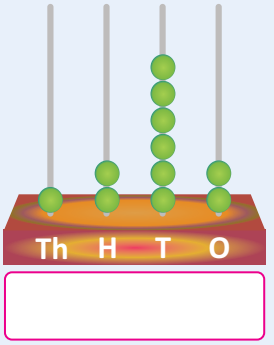
Still curious? Talk to me by scanning the QR code.

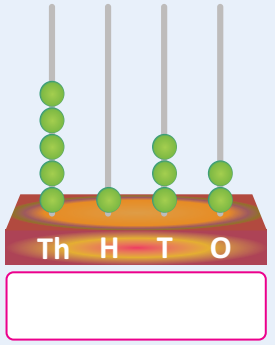
Learning Outcomes

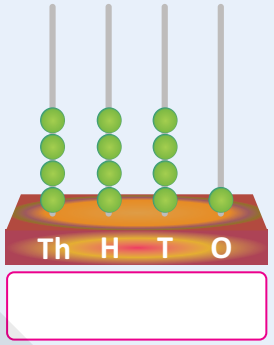
By the end of this chapter, students will be able to:

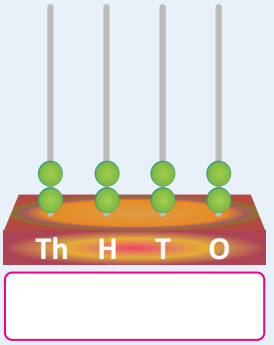
- Understand and identify numbers up to 10,000.
- Read and write numbers in numerals and words up to 10,000.
- Arrange numbers up to 10,000 in ascending and descending order.
- Compare two or more numbers using symbols (<, >, =).
- Understand the place value and face value of digits in numbers up to 10,000.
- Expand numbers up to 10,000 using place values (e.g., 4,563 = 4,000 + 500 + 60 + 3).
- Form the greatest and smallest numbers using given digits up to 10,000.
- Solve problems involving successor and predecessor of numbers up to 10,000.
- Apply the concept of rounding off numbers to the nearest tens, hundreds, and thousands.

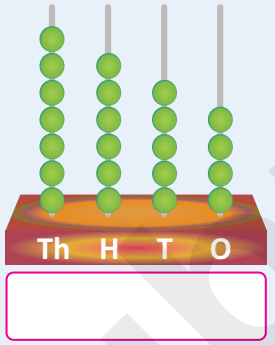
1. Count beads and write number on the abacus:

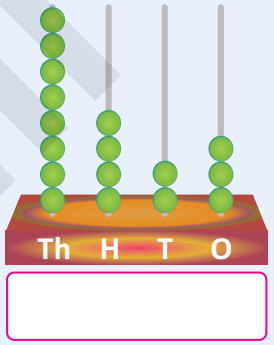












2. Complete the following table:

Critical Thinking

Number	Thousands	Hundreds	Tens	Ones	Number Name
7462		4			
8534			3		
9785				5	
				0	Three thousand four hundred sixty
	6				Six thousand two hundred forty
			0		Nine thousand nine hundred nine

4-digit Numbers

We have already learnt to read and write the numbers upto 1000. Let us recall how we get 10 from 9, 100 from 99 and 1000 from 999.

9 + 1 = 10 or Ten

99 + 1 = 100 or Hundred

999 + 1 = 1000 or Thousand

	1	1 1
9	9 9	9 9 9
+ 1	+ 1	+ 1
1 0	1 0 0	1 0 0 0

Thus, we get 1000 by adding 1 to 999.

1000 is four-digit number. We read it as "One thousand".

From above, do you observe any pattern?

T	O
1	0

Yes, we observe a pattern. To write a number **1** more than **9**, we open a second place called tens place, and write 1 in the tens place and 0 in the ones place.

H	T	O
1	0	0

To write a number **1** more than **99**, we open a third place called hundreds place and write 1 in this place and 0 in the first and second places as shown alongside.

Th	H	T	O
1	0	0	0

To write a number **1** more than **999**, we open a fourth place called thousands place and write 1 in this place and 0 in the first, second and third places as shown alongside.

We can say that **999** is the largest 3-digit number and **1000** is the smallest 4-digit number.

Formation of Numbers

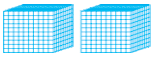
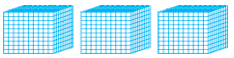
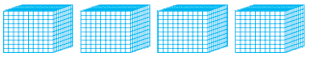
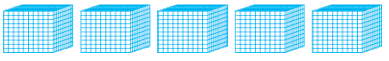
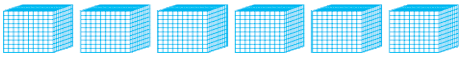
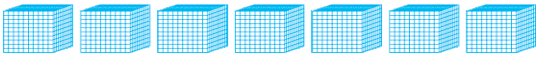
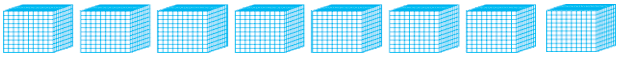
We know that 101 is formed by adding 1 to 100 and 102 is formed by adding 1 to 101 and so on. In the same way, we can form numbers beyond 999.

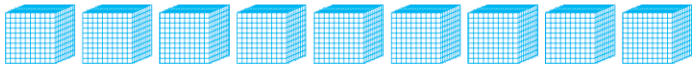
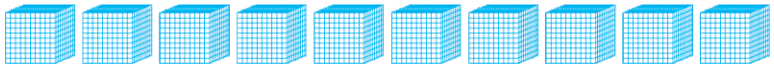
Read and write numbers after 999 as follows:

How we write?	How we read?
999 + 1 = 1000	one thousand
1000 + 1 = 1001	one thousand one
1001 + 1 = 1002	one thousand two
1002 + 1 = 1003	one thousand three
..... = ...	.....
1009 + 1 = 1010	one thousand ten

1010 + 1 = 1011	one thousand eleven
1011 + 1 = 1012	one thousand twelve
..... = ...	.....
1099 + 1 = 1100	one thousand one hundred
1100 + 1 = 1101	one thousand one hundred one
1101 + 1 = 1102	one thousand one hundred two
..... = ...	.....
1198 + 1 = 1199	one thousand one hundred ninety-nine
1199 + 1 = 2000	two thousand
2000 + 1 = 2001	two thousand one
..... = ...	.....
..... = ...	.....
2999 + 1 = 3000	three thousand
3000 + 1 = 3001	three thousand one
3000 + 1 = 3002	three thousand two
..... = ...	.....
..... = ...	.....
9998 + 1 = 9999	nine thousand nine hundred ninety-nine

Read the following in thousands:  One box represents 1000.

One thousand	1000	
Two thousand	2000	
Three thousand	3000	
Four thousand	4000	
Five thousand	5000	
Six thousand	6000	
Seven thousand	7000	
Eight thousand	8000	

Nine thousand	9000	
Ten thousand	10000	

Exercise 2.1

Knowledge Application

1. Write the numerals of each of the following:

(a) Eight thousand five hundred twenty =

(b) Five thousand four hundred four =

(c) Six thousand nine hundred eight =

(d) Four thousand eight hundred ninety-two =

(e) One thousand nine hundred seventy-five =

2. Write the number names of the following:

(a) 4350 =

(b) 2508 =

(c) 6723 =

(d) 8994 =

(e) 2007 =

(f) 3025 =

(g) 7210 =

3. Match the following:

Column A	Column B
(a) 3090	(i) Four thousand three hundred twenty-eight
(b) 4328	(ii) Three thousand three hundred thirty-three
(c) 3009	(iii) Four thousand three hundred eighty-two
(d) 3333	(iv) Three thousand nine
(e) 4382	(v) Three thousand ninety

Understanding 4-digit Numbers on the Abacus

Take a Task

Watch Remedial

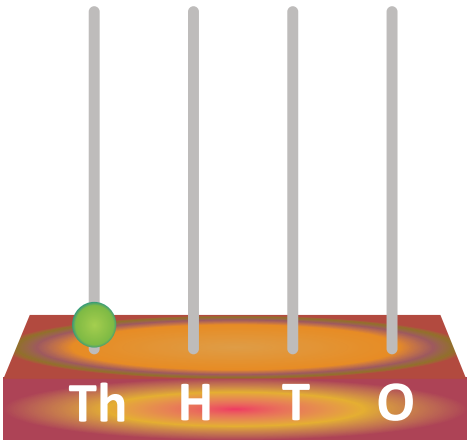
An abacus is a tool used for reading and counting numbers.

The largest 3-digit number is 999. The first and the smallest 4-digit number is formed by adding 1 to 999 that is :

999 + 1 = 1000

1000 is read as one thousand. On the abacus, it is represented as shown next page.

Example 1: Represent 4538 on the abacus.

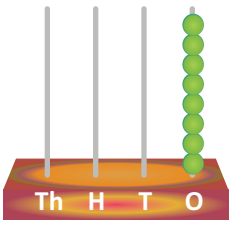


This is an abacus with four rods– the thousands rod (Th), the hundreds rod (H), the tens rod (T) and the Ones rod (O).

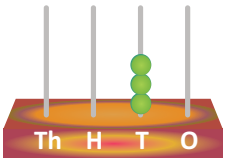
REMEMBER

- The smallest 4-digit number is 1000.
- The largest 4-digit number is 9999.

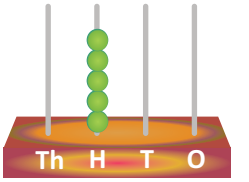
Step 1 : In the numeral 4538, 8 is in the ones place.
So, we put 8 beads in the ones column in the abacus.



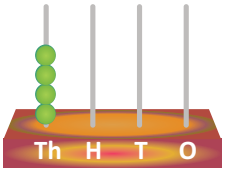
Step 2 : The digit in the tens place is 3. So, we put 3 beads in the tens column in the abacus.

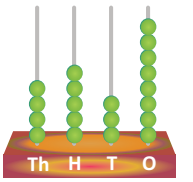


Step 3 : The digit in the hundreds place is 5. So, we put 5 beads in the hundreds column in the abacus.



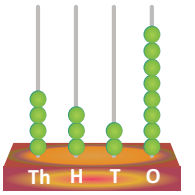
Step 4 : The digit in the thousands place is 4. So, we put 4 beads in the thousands column in the abacus.



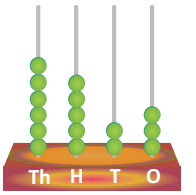


Thus, the numeral 4538 is represented in the abacus as given alongside:

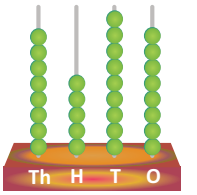
Similarly, the numerals 4328, 6523 and 8598 are represented on the abacus as given here :



4328



6523

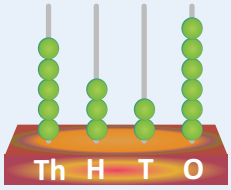


8598

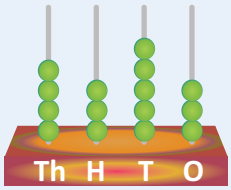
Exercise 2.2

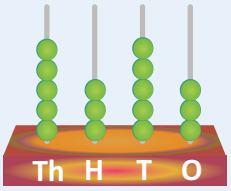
Knowledge Application

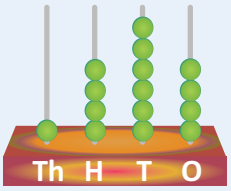
1. Read the abacus and write the numeral and number name. One has been done for you:

(a) 

5326
Five thousand three hundred twenty-six

(b) 

(c) 

(d) 

2. Fill in the boxes with the missing digits:

(a)	4238	=		thousands		hundreds		tens		ones
(b)	3405	=		thousands		hundreds		tens		ones
(c)	6675	=		thousands		hundreds		tens		ones
(d)	5009	=		thousands		hundreds		tens		ones
(e)	8334	=		thousands		hundreds		tens		ones
(f)	3600	=		thousands		hundreds		tens		ones

3. Write the numeral of each of the following. One has been done for you:

(a) 5 thousands 2 hundreds 8 tens 3 ones

(b) 6 thousands 3 hundreds 2 tens 8 ones

(c) 2 thousands 3 hundreds 9 tens 6 ones

(d) 5 thousands 3 hundreds

(e) 2 thousands 5 hundreds

Th	H	T	O
5	2	8	3

Mental Math

Critical Thinking

1. Write the numerals in the ascending order:

(a) from 3110 to 3115 = _____, _____, _____, _____, _____, _____,

(b) from 7235 to 7240 = _____, _____, _____, _____, _____, _____,

2. Write the smallest:

(a) 2-digit number _____

(b) 3-digit number _____

The value of a digit depends on the place where it occurs. This is known as the place value of the digit. Face value of any digit in a number is the digit itself.

Th	H	T	O	Face Value	Place Value
5	8	3	6		
				6	6 ones = 6
				3	3 tens = 30
				8	8 hundreds = 800
				5	5 thousands = 5000

Finding the Face Value and Place Value of Numbers

Take a Task

Watch Remedial

Observe the place value of the table given below:

Thousands (Th)	**Hundreds** (H)	**Tens** (T)	**Ones** (O)
1000	100	10	1

Now, consider the numbers, say 3857 and 9281.

Arrange the numbers in the place value table as follows:

	Thousands (Th)	**Hundreds** (H)	**Tens**(T)	**Ones** (O)
	1000	100	10	1
3857 →	3	8	5	7
9281 →	9	2	8	1

In 3 8 5 7, we have the following:

3 8 5 7

is in the ones column.

∴ place value of 7 = 7 × 1 = 7

is in the tens column.

∴ place value of 5 = 5 × 10 = 50

is in the hundreds column.

∴ place value of 8 = 8 × 100 = 800

is in the thousands column.

∴ place value of 3 = 3 × 1000 = 3000

3857

Similarly in 9281, we have the following:

9 2 8 1

Place value of 1	=	1 one	=	1
Place value of 8	=	8 tens	=	80
Place value of 2	=	2 hundreds	=	200
Place value of 9	=	9 thousands	=	9000
				9281

REMEMBER

The place value of 0 is always zero (0).

Expanded Form of a Numeral

We can write any number in terms of ones, tens, hundreds and thousands. This is known as the expanded form. If a numeral is expressed as the sum of place values of its all digits, it is called its expanded form.

Example 1: 6728 = 6 thousands + 7 hundreds + 2 tens + 8 ones

or 6728 = 6000 + 700 + 20 + 8.

Example 2: Write the place value of 8 in the numeral 6842.

Solution : In the numeral 6842, 8 is at hundreds place.

∴ Place value of 8 = 8 × 100 = 800.

Example 3: Write the place values of 7 in the numeral 5707 and find the difference between them.

Solution : The given numeral is 5707.

From right, the first 7 is at ones place.

∴ its place value = 7 ones = 7 × 1 = 7.

From left, the second 7 is at hundreds place.

∴ its place value = 7 hundreds = 7 × 100 = 700.

Now, the difference between the two place values of 7
= 700 – 7 = 693.

Example 4: Express the following in expand form:

(a) 4050 (b) 6539

Solution : (a) 4050 = 4 thousands + 5 tens

or 4050 = 4000 + 50

(b) 6539 = 6 thousands + 5 hundreds + 3 tens + 9 ones

or 6539 = 6000 + 500 + 30 + 9

Example 5: Write the following in short form:

(a) 9000 + 400 + 8

(b) 3 thousands + 2 hundreds + 5 tens + 5 ones

Solution : (a) 9000 + 400 + 8 = 9408

(b) 3 thousands + 2 hundreds + 5 tens + 5 ones = 3255

Exercise 2.3

Knowledge Application

1. Multiple Choice Questions (MCQs)

Choose the right option:

(a) The place value of 7 in 3672 is

(i) 70 (ii) 7 (iii) 700 (iv) 90

(b) The place value of 8 in 8341 is

(i) 8000 (ii) 800 (iii) 80 (iv) 300

(c) The place value of 5 in 2520 is

(i) 50 (ii) 500 (iii) 5000 (iv) 300

(d) The place value of 9 in 3900 is

(i) 9 (ii) 90 (iii) 900 (iv) 9000

2. Write in the expanded form. One has been done for you:

(a) 7319 = 7 thousands + 3 hundreds + 1 ten + 9 ones

= 7000 + 300 + 10 + 9

(b) 6528 = ☐ thousands + ☐ hundreds + ☐ tens + ☐ ones

= _____ + _____ + _____ + _____

(c) 3278 = ☐ thousands + ☐ hundreds + ☐ tens + ☐ ones

= _____ + _____ + _____ + _____

3. Write the place value of 2 in 3286. _____

4. Write the place value of 0 in 3045. _____

5. Write the place value of 3 in 2530. _____

6. Write the place value of 4 in 4350. _____

Mental Math

Critical Thinking

Put a box around the correct numeral:

(a)	4 thousands 6 tens 6 ones	→	4660	4606	6604	4066
(b)	7 thousands 8 ones	→	7800	7008	8007	7080
(c)	6 thousands 6 tens	→	6600	606	660	6060
(d)	5 thousands 8 ones	→	5800	580	5008	580
(e)	9 thousands 6 ones	→	6900	9060	960	9006

Ordering of Numbers

To compare 4-digit numbers.

Rule 1 : When the number of digits is different.

Between the two numbers, the number containing more digits is the greater number.

For Example

752 > 39

1254 > 699

Rule 2 : When the number of digits is the same.

If two numbers contain the same number of digits, we compare them by their leftmost digits. If the leftmost digits are also the same, we compare them by their next digits from the left, and so on.

For Example

6752 > 5992

3875 > 2928

Rule :

Step 1 : Compare the digits in the thousands place.

Th	H	T	O
4	5	3	9

Th	H	T	O
1	9	9	3

4 is greater than 1

So, 4539 > 1993

Step 2 : If the digit in the thousands place is the same, comapre the digits in hundreds place.

Th	H	T	O
9	1	9	5

Th	H	T	O
9	5	3	9

1 is less than 5

same

So, 9195 < 9539

Step 3 : If the digits in the thousands and hundreds place are the same, comparing the digits in tens place.

Th	H	T	O
3	2	7	2

Th	H	T	O
3	2	4	8

7 is greater than 4

same

So, 3272 > 3248

Similarly, if all the other digits are the same, compare the digits in the ones place.

Th	H	T	O
3	9	2	5

Th	H	T	O
3	9	2	9

5 is less than 9

same

So, 3925 < 3929

Successor

The number that comes just after a particular number is called its **successor**.

For Example :

Number	Successor
9	10
99	100
3999	4000

Predecessor

The number that comes just before a particular number is called its **predecessor**.

For Example :

Number	Predecessor
10	9
100	99
1000	999

Note: Zero has no predecessor.

Thus, we have the following :

Predecessor	Number	Successor
9	10	11
99	100	101
999	1000	1001
4574	4575	4576
9238	9239	9240

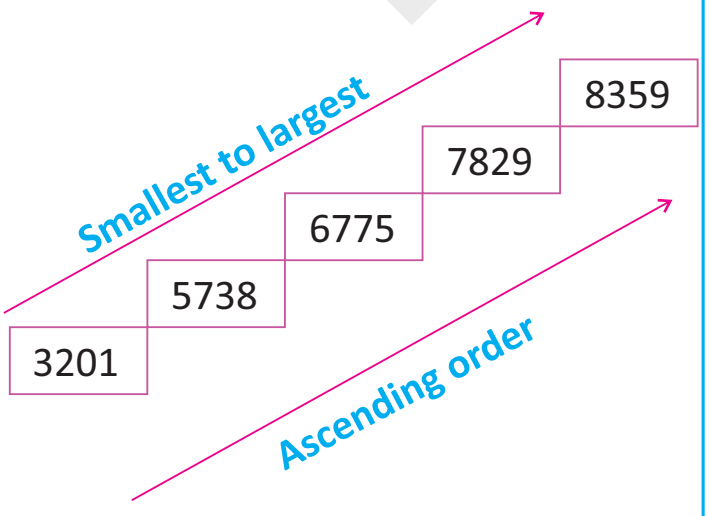
Arranging Numbers in Ascending and Descending Order

We can arrange numbers in two ways.

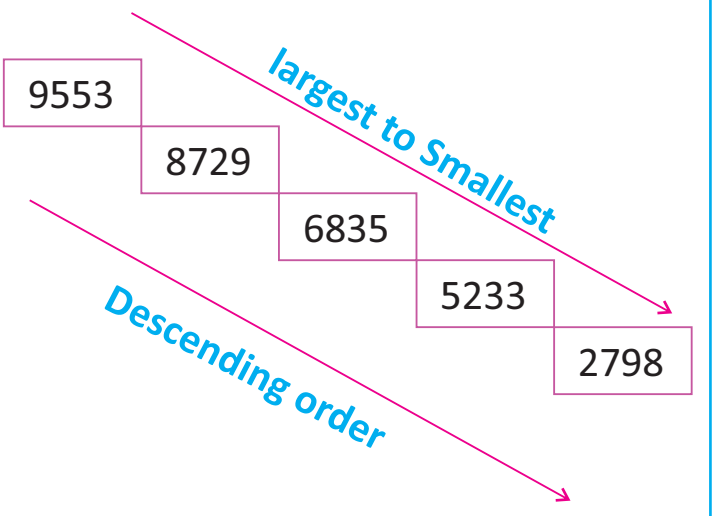
Arranging numbers from smallest to largest is called ascending order. It is also known as **increasing** order.

Arranging numbers from largest to smallest is called descending order. It is also known as **decreasing** order.

Example : 7829, 8359, 3201, 5738, 6775



Example : 6835, 2798, 9553, 8729, 5233



Exercise 2.4

Knowledge Application

1. Put > , < or = in the box to make the statement true:

(a)	4883	☐	4529	(b)	4529	☐	2598
(c)	9236	☐	4287	(d)	4675	☐	9927
(e)	9288	☐	7288	(f)	6752	☐	9387
(g)	9786	☐	9786	(h)	6311	☐	7511
(i)	2823 + 844	☐	945 + 328	(j)	954 + 46	☐	999

2. Write the successor of each of the following numbers:

(a) 9369 (b) 1000 (c) 8729 (d) 3700

3. Write the predecessor of each of the following numbers:

(a) 9275 (b) 7884 (c) 5676 (d) 8293

4. Rewrite the following numbers in descending order:

(a) 3468, 3864, 3486, 3846, 6384, 6348

(b) 8974, 8947, 9874, 9478, 8544,9996

(c) 5673, 6573, 6537, 7365, 7563, 6628

(d) 7219, 4256, 9721, 7291, 4578, 9271

5. Rewrite the following numbers in ascending order:

(a) 3648, 8463, 4899, 9293, 3928, 8293

(b) 5676, 6765, 7556, 7665, 8328, 2883

(c) 9321, 1293, 1329, 9235, 5332, 6752

6. Find the successor of the largest 2-digit number. Is it the smallest 3-digit number?

7. Find the successor of the largest 3-digit number. Is it the smallest 4-digit number?

8. Match the following columns:

	Column A		Column B
(a)	Predecessor of largest 2-digit number	(i)	9233
(b)	Predecessor of largest 3-digit number	(ii)	3999
(c)	Successor of 9232	(iii)	9133
(d)	Predecessor of 4000	(iv)	98
(e)	Successor of 9132	(v)	998

Roman Numerals

We use the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 to represent all the numbers. A number system which includes 0 to 9 digits is called decimal number system. But in ancient time, the Romans used different numerals. Those are called Roman numerals. These numerals are still used occasionally on the faces of clocks to mark hours, to number a class, different sections of a book, etc.

Roman numbers are also commonly used in day to day life. Romans use some special symbols for writing numbers. They use only seven basic symbols. These are I, V, X, L, C, D and M.

I	stands for	1	C	stands for	100
V	stands for	5	D	stands for	500
X	stands for	10	M	stands for	1000
L	stands for	50			

Now, follow some rules given below for the formation of roman number :

Rule 1: Repetition of I and X means addition.

For Example :

I	=	1	X	=	10
II	=	1 + 1 = 2	XX	=	10 + 10 = 20
III	=	1 + 1 + 1 = 3	XXX	=	10 + 10 + 10 = 30

REMEMBER

- V is never repeated.
- I and X may be repeated three times at the most.

Rule 2 : If a symbol is written to the right of a greater number, we add the values of both symbols.

For Example :

VI = 5 + 1 = 6
VII = 5 + 1 + 1 = 7
VIII = 5 + 1 + 1 + 1 = 8
XI = 10 + 1 = 11
XII = 10 + 1 + 1 = 12
XIII = 10 + 1 + 1 + 1 = 13
XV = 10 + 5 = 15

Rule 3: If a symbol is written to the left of a greater number, we subtract its value from the value symbol on the right.

For Example :

IV = 5 – 1 = 4
IX = 10 – 1 = 9

Note: Symbol V is never subtracted.

Using the above rules, we can write numbers 1 to 39 as follows:

Hindu-Arabic Numeral	Roman Numeral	Hindu-Arabic Numeral	Roman Numeral	Hindu-Arabic Numeral	Roman Numeral	Hindu-Arabic Numeral	Roman Numeral
1	I	11	XI	21	XXI	31	XXXI
2	II	12	XII	22	XXII	32	XXXII
3	III	13	XIII	23	XXIII	33	XXXIII
4	IV	14	XIV	24	XXIV	34	XXXIV
5	V	15	XV	25	XXV	35	XXXV
6	VI	16	XVI	26	XXVI	36	XXXVI
7	VII	17	XVII	27	XXVII	37	XXXVII
8	VIII	18	XVIII	28	XXVIII	38	XXXVIII
9	IX	19	XIX	29	XXIX	39	XXXIX
10	X	20	XX	30	XXX		

Exercise 2.5

Knowledge Application

1. Multiple Choice Questions (MCQs)

Choose the right option:

(i) What is the Hindu-Arabic numeral for XXIX?

(a) 31 ☐ (b) 29 ☐ (c) 19 ☐

(ii) The roman numeral for 24 is

(a) XXIV ☐ (b) XXIII ☐ (c) XXVI ☐

(iii) The Hindu-Arabic numeral for IX is

(a) 1 ☐ (b) 10 ☐ (c) 9 ☐

2. Write the Hindu-Arabic numeral for the following:

(a) XXIX (b) VIII (c) XIV (d) XV (e) XVII

(f) XIX (g) XXI (h) XVIII (i) XXVI

3. Put a tick (✓) on the correct answer:

(a) 36 = XXVII ☐ (b) 28 = XXVIII ☐ (c) 35 = XVX ☐

(d) 19 = XIX ☐ (e) 14 = XV ☐ (f) 17 = XVII ☐

(g) 9 = IX ☐ (h) 29 = XXVIII ☐

4. Write the Roman numerals for the following:

(a) 21 (b) 18 (c) 22 (d) 25 (e) 36

(f) 23 (g) 19 (h) 14 (i) 30

5. Match the column:

(a)	VI + X	(i)	XXX
(b)	XII + XV	(ii)	XXVI
(c)	V + XXI	(iii)	XXXVIII
(d)	XX + X	(iv)	XXVII
(e)	IX + XXIX	(v)	XVI

Mental Math

Critical Thinking

Match the numerals in two columns which indicate the same number :

Column A	Column B
3	XXV
8	XXII
20	XVI
29	XVIII
38	XXIX
22	III
18	VIII
25	XXXVIII
16	XX

Gap Analyzer™
Take a Test

1. Tick (✓) the correct answer:

(a) The predecessor of 9999 is _____.

(i) 10000 ☐ (ii) 9000 ☐ (iii) 9998 ☐

(b) The successor of 7468 is _____.

(i) 7400 ☐ (ii) 7469 ☐ (iii) 7467 ☐

(c) The place value of 6 in 9065 is _____.

(i) 60 ☐ (ii) 600 ☐ (iii) 6000 ☐

(d) 900 + 50 + 4 is the expanded form of _____.

(i) 594 ☐ (ii) 954 ☐ (iii) 459 ☐

2. Fill in the blanks:

(a) 3698 = ☐ Th + ☐ H + ☐ T + ☐ O

(b) 4 Th + 6 T + 3 O = _____.

(c) 4861 – 3559 = _____.

(d) 6581 + 3269 = _____.

3. Match the following:

(a)	XC	(i)	59
(b)	LIX	(ii)	97
(c)	XLIX	(iii)	90
(d)	XCVII	(iv)	49

Custom Learning Path
Scan to Create Your Own Learning Path

Puzzle

Conceptual Learning

Search Numbers

5	7	6	1	9	7
3	1	5	3	6	8
2	8	8	4	3	0
8	3	4	9	2	5
9	1	6	2	3	5

1. 7805
2. 9632
3. 5846
4. 3289
5. 1536

Mental Math

Critical Thinking

1. What is the predecessor of the smallest 4-digit number?

   (a) 998 (b) 999 (c) 1001 (d) none of these
2. What is the successor of the greatest 3-digit number?
3. How many hundreds make 4 thousand?
4. If the 4 digits are V, I, VIII, and IV, form the greatest and the smallest 4-digit numbers using the Hindu-Arabic numerals.
5. Write the greatest 4-digit number with three zeros.
6. Find a 4-digit number with 4 different digits, which when subtracted from the number obtained by reversing the digits gives the least difference possible.

HOTS

Critical Thinking

1. Population of a big village is 1 more than the greatest 4-digit number. If the number of females is 4065, find the number of males in the village.
2. Find the difference between the largest 4-digit number and largest 3-digit number. Find the predecessor and successor of the resultant.

Maths Lab Activity

Collaboration

Learning objective : To practice the formation of 4-digit numbers and arranging them in ascending order.

Material required: Chart paper and pencil.

Procedure:

1. This is a group activity.
2. Divide yourselves into groups of 4 and choose a leader to conduct the activity.

3. Each group is given a chart paper and pencils.
4. They are asked to write any 4-digit number at random on the paper.
5. Next they are asked to arrange the digits of the number in ascending order to form the smallest possible number.
6. The group that arranges the quickest is the winner.
7. Each group is then asked to pair with another group whose number is closest to their number.
8. The pair of groups whose numbers is closest, i.e., with the least difference between them win the contest.