

1. Large Numbers



Key Concepts

1. Reading and writing 5-digit numbers
2. Place value and face value
3. Expanded forms of numbers
4. Comparing and ordering large numbers
5. Forming the greatest and the smallest 5-digit numbers
6. Predecessor and successor



Why should I read this chapter?

We need to know numbers so that we can use them in our daily lives.



Recap

1. Complete the following.

ones = ten

tens = hundred

hundreds = thousand

2. Identify the numbers.

- a. the smallest 4-digit number
- b. the greatest 3-digit odd number
- c. the greatest 4-digit even number
- d. the smallest 2-digit even number



Prep-up

Ram and Meera are planting saplings with their mother.





Do you know who Ken Chaplin is?



Yes! Ken Chaplin is from Canada. He planted 15,170 seedlings in a day.



In 2001, Ken Chaplin planted 15,170 red pine seedlings in a day.



It is such a large number!

How do we read this number?



Can you help us read and write the number?



Reading and writing 5-digit numbers



With the help of teachers, the students of Grade 4 collected money for a flood-donation camp. The amount of money they collected is equal to the **smallest 5-digit number**.

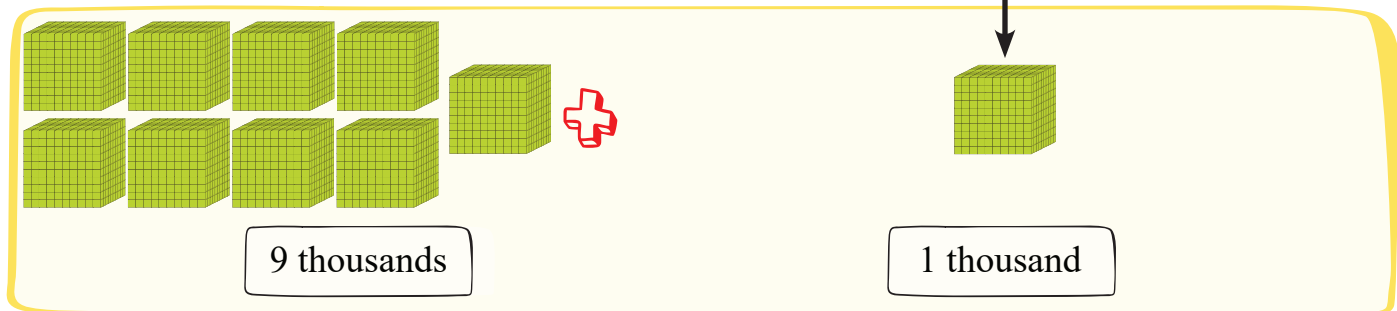
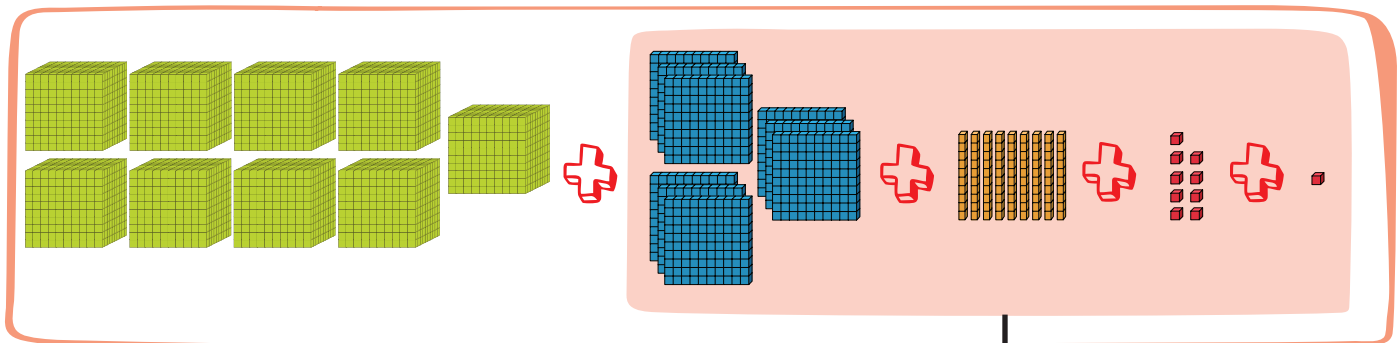
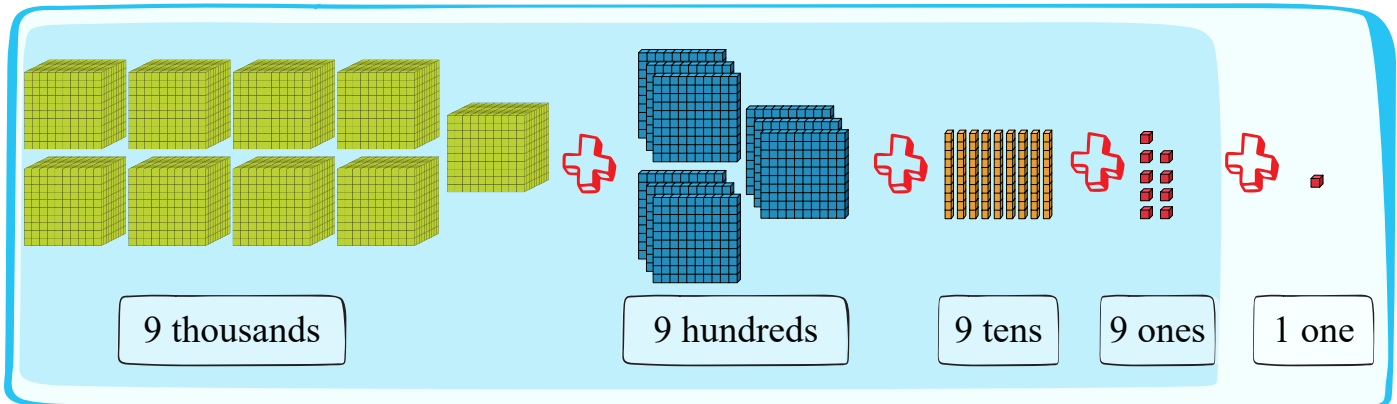
They all started counting the money, but stopped at 9,999 as they did not know how to count further.

Can you help us find the smallest 5-digit number?



We know that 9,999 is the _____ (smallest/greatest) 4-digit number.

Let us add 1 to it.



$$9 \text{ thousands} + 1 \text{ thousand} = 10 \text{ thousands}$$

We write it as 10,000 and read it as **ten thousand**.

Counting in ten thousands

10,000 = ten thousand

20,000 = twenty thousand

30,000 = thirty thousand

40,000 = forty thousand

50,000 = _____

60,000 = _____

70,000 = _____

80,000 = _____

90,000 = _____

A 5-digit number has five places: ten thousands, thousands, hundreds, tens and ones.

Let us consider a 5-digit number 25,314.

Ten thousands	Thousands	Hundreds	Tens	Ones
2	5	3	1	4

There are 2 ten thousands, 5 thousands, 3 hundreds, 1 ten and 4 ones in 25,314.

The number name is **twenty-five thousand three hundred fourteen**.

Example 1: In the number 36,087, there are 3 ten thousands, 6 thousands, 0 hundreds, 8 tens and 7 ones.

Ten thousands	Thousands	Hundreds	Tens	Ones
3	6	0	8	7

The number name is **thirty-six thousand eighty-seven**.

Example 2: In the number 11,545, there are 1 ten thousand, 1 thousand, 5 hundreds, 4 tens and 5 ones.

Ten thousands	Thousands	Hundreds	Tens	Ones
1	1	5	4	5

The number name is **eleven thousand five hundred forty-five**.

Example 3: In the number 42,918, there are ten thousands, thousands, hundreds, ten and ones.

Ten thousands	Thousands	Hundreds	Tens	Ones
		9		8

The number name is **forty-two thousand nine hundred eighteen**.

In the number 90,524, there are ten thousands, thousands, hundreds, tens and ones.

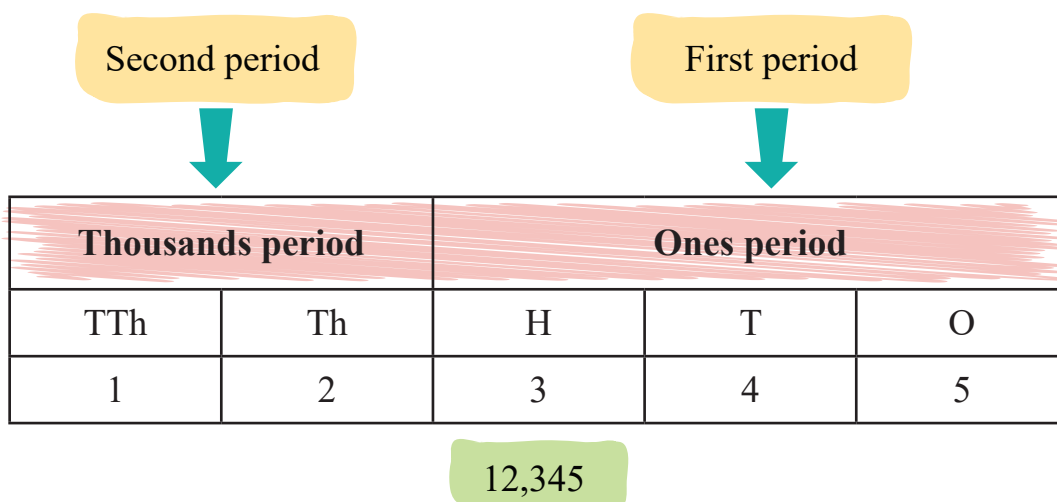


Ten thousands	Thousands	Hundreds	Tens	Ones

The number name is .

Periods

According to the Indian system of numeration, we divide a large number into groups where each group represents a **period**. A comma (,) is used to separate the periods.



Let us consider the number 98542.

Thousands period		Ones period		
TTh	Th	H	T	O
9	8	5	4	2

98,542

Complete the table.

Number	Writing number using periods	Number name
20468	20,468	twenty thousand four hundred sixty-eight
43120	43,120	forty-three thousand one hundred twenty
		thirty-nine thousand twenty-one
56089		



Progress Meter 1

1. Write the numbers in figures.

- a. eighty-five thousand nine hundred fifty-nine
- b. twenty-six thousand sixty-four
- c. thirty thousand five
- d. forty-five thousand seven hundred two
- e. twelve thousand three hundred eighty-four

2. Write the number names.

- a. 23,541
- b. 10,547
- c. 37,541
- d. 66,025
- e. 98,858
- f. 58,563

3. Count the beads. Write the numbers and the number names.

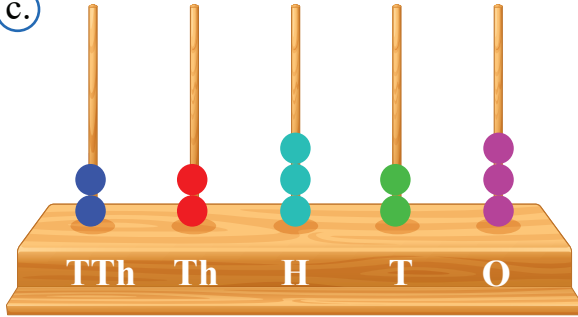
a.

TTh Th H T O

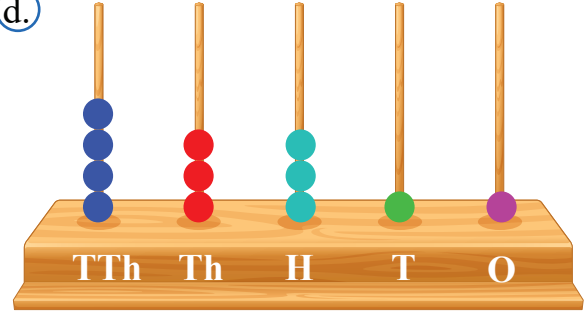
b.

TTh Th H T O

c.



d.



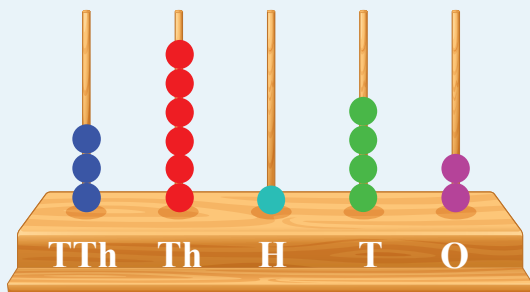
4. Rewrite the numbers using periods as per the Indian system of numeration.

a. 28340 b. 19182 c. 98766 d. 36520 e. 32403 f. 10005

Place value and face value

Place value

The **place value** of a digit is the value of the digit in a number based on its position.



36,142

Let us consider the number 36,142.

The place value of **3** is **3 ten thousands** or **30,000**.

The place value of **6** is **6 thousands** or **6,000**.

The place value of **1** is **1 hundred** or **100**.

The place value of **4** is **4 tens** or **40**.

The place value of **2** is **2 ones** or **2**.

Face value

The face value of a digit in a number is the digit itself.

The face value of 7 in 16,789 is 7.

The face value of 1 in 19,234 is 1.

Example 4: Write the place value and the face value of each digit of the number 80,512.

Solution: In the number 80,512, there are ten thousands, thousands, hundreds, ten and ones.

The place value of 8 is 80,000 and the face value is 8.

The place value of 0 is 0 and the face value is 0.

The place value of 5 is 500 and the face value is .

The place value of 1 is 10 and the face value is .

The place value of 2 is and the face value is .

The place value of 0 is always 0. It does not change from place to place.



Example 5: Write the place value and the face value of each digit of the number 45,387.

Solution: In the number 45,387, there are ten thousands, thousands, hundreds, tens and ones.

	TTh	Th	H	T	O
	4	5	3	8	7
Place values	40,000	5,000	300	80	7
Face values	4	5	3	8	7

Try this yourself



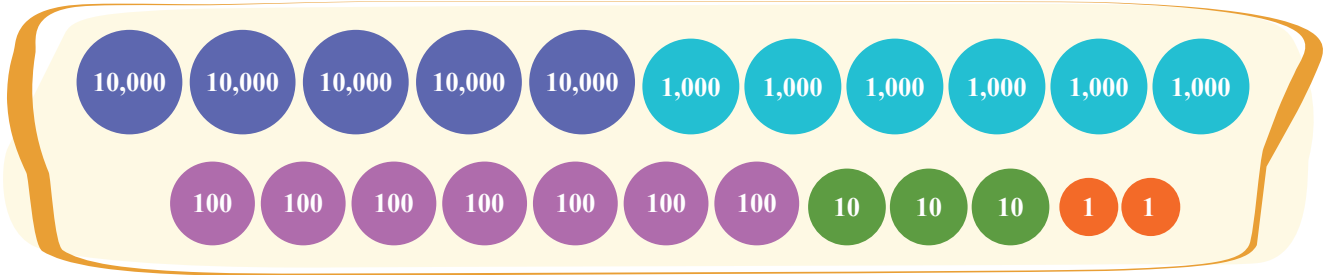
In the number 36,240, there are ten thousands, thousands, hundreds, tens and ones.

	TTh	Th	H	T	O
	3	6	2	4	0
Place values					
Face values					



Progress Meter 2

1. Each of the discs shown below represents a value. Count the discs and solve the given questions.



- a. Write the number in figures.
- b. Write the number in words.
- c. Write the place value of each of the digits in the number.

2. Write the face values of the underlined digits.

- a. 26,541
- b. 70,184
- c. 12,194
- d. 65,641
- e. 33,542
- f. 89,544

3. Write the place values of the underlined digits.

- a. 34,089
- b. 21,789
- c. 56,120
- d. 57,184
- e. 10,101
- f. 69,472
- g. 73,254
- h. 84,693
- i. 15,736
- j. 40,982



Expanded forms of numbers

The expanded form of a number is the sum of the place value of each digit of the number. Let us write the expanded form of the number 18,542.

	TTh	Th	H	T	O
	1	8	5	4	2
Place values	10,000	8,000	500	40	2

Therefore, the expanded form of 18,542 will be as follows.

$$18,542 = 1 \text{ ten thousand} + 8 \text{ thousands} + 5 \text{ hundreds} + 4 \text{ tens} + 2 \text{ ones}$$

$$= 10,000 + 8,000 + 500 + 40 + 2$$

Example 6: Write the expanded form of 10,101.

Solution: $10,101 = 1 \text{ ten thousand} + 0 \text{ thousands} + 1 \text{ hundred} + 0 \text{ tens} + 1 \text{ one}$
 $= 10,000 + 0 + 100 + 0 + 1$

Example 7: Write the expanded form of 75,080.

Solution: $75,080 = 7 \text{ ten thousands} + 5 \text{ thousands} + 0 \text{ hundreds} + 8 \text{ tens} + 0 \text{ ones}$
 $= 70,000 + 5,000 + 0 + 80 + 0$



Progress Meter 3

1. Write the expanded forms of the given numbers.

a. $72,342 =$

b. $35,078 =$

c. $51,103 =$

d. $66,700 =$

e. $85,436 =$

2. Write the numbers from the expanded forms given.

a. $80,000 + 1,000 + 400 + 40 + 4 =$

b. $20,000 + 5,000 + 300 + 10 + 0 =$

c. $60,000 + 6,000 + 600 + 60 + 6 =$

d. $10,000 + 4,000 + 500 + 0 + 7 =$

e. $70,000 + 5,000 + 300 + 20 + 5 =$



Comparing and ordering large numbers

Comparison of numbers



Kalsubai is a mountain in Maharashtra. It is the highest point of Maharashtra.

Kalsubai is **1,646 m** high.



Nanda Devi is the second highest peak in India. It is the 23rd highest peak in the world.

Nanda Devi is **7,816 m** high.

The height of Kalsubai is _____ m.

The height of Nanda Devi is _____ m.

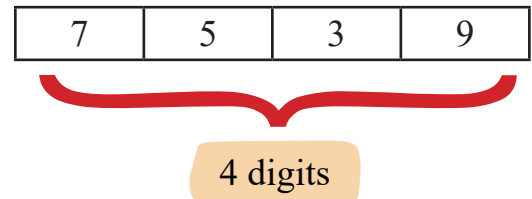
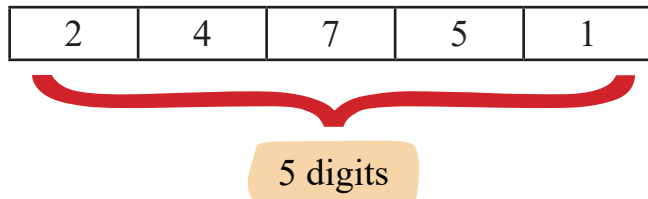
Let us compare the heights of the two mountains.

1,646 7,816

Which mountain is higher?

Now, we shall learn to compare 5-digit numbers.

Rule 1: The number with a greater number of digits is greater.



So, $24,751 > 7,539$.

Rule 2: If the number of digits of the numbers are the same, then compare the digits in the ten thousands place. The number having a greater digit in the ten thousands place is greater.

TTh	Th	H	T	O
4	6	3	9	1
3	4	7	5	8

$4 > 3$

So, $46,391 > 34,758$.

Rule 3: If the digits of the numbers in the ten thousands place are the same, then compare the digits in the thousands place. The number having a greater digit in the thousands place is greater.

TTh	Th	H	T	O
5	7	2	8	4
5	3	8	4	9

same $7 > 3$

So, $57,284 > 53,849$.

Rule 4: If the digits in the ten thousands and thousands places are the same, then compare the digits in the hundreds place. The number having a greater digit in the hundreds place is greater.

TTh	Th	H	T	O
2	4	2	8	4
2	4	8	4	9

same same $2 < 8$

So, $24,284 < 24,849$.

Rule 5: If the digits in the ten thousands, thousands and hundreds places are the same, then compare the digits in the tens place. The number having a greater digit in the tens place is greater.

TTh	Th	H	T	O
7	4	8	2	7
7	4	8	5	2

↓ same
 ↓ same
 ↓ same
 ↓ 2 < 5

So, $74,827 < 74,852$.

Rule 6: If the digits in the ten thousands, thousands, hundreds and tens places are the same, then compare the digits in the ones place. The number having a greater digit in the ones place is greater.

TTh	Th	H	T	O
1	6	7	9	5
1	6	7	9	8

↓ same
 ↓ same
 ↓ same
 ↓ same
 ↓ 5 < 8

So, $16,795 < 16,798$.

Ordering numbers

Arranging the given numbers in order from the smallest to the greatest is called the **ascending** order.



Example 8: Arrange 37,961, 12,389, 65,043, 51,427 and 80,007 in the ascending order.

Solution: All the numbers are of 5 digits. So, we need to compare the digits in the ten thousands place.

$$1 < 3 < 5 < 6 < 8$$

The numbers arranged in the ascending order are as follows.

$$12,389 < 37,961 < 51,427 < 65,043 < 80,007$$

Arranging the given numbers in order from the greatest to the smallest is called the **descending** order.

Example 9: Arrange 21,232, 36,314, 44,276, 10,109 and 51,529 in the descending order.

Solution: All the numbers are of 5 digits. So, we need to compare the digits in the ten thousands place.

$$5 > 4 > 3 > 2 > 1$$

The numbers arranged in the descending order are as follows.

$$51,529 > 44,276 > 36,314 > 21,232 > 10,109$$



Progress Meter 4

1. Compare the numbers using $<$, $>$ or $=$.

a. 12,950 12,925

b. 55,015 55,019

c. 36,541 35,463

d. 60,295 60,295

2. Arrange the following numbers in the ascending order.

a. 32,542, 22,229, 90,983, 33,245, 47,090

b. 50,821, 51,812, 75,709, 43,830, 80,809

c. 25,412, 87,141, 27,414, 32,600, 41,412

d. 56,500, 69,652, 32,021, 41,014, 87,458

3. Arrange the following numbers in the descending order.

a. 18,018, 10,108, 11,018, 18,180, 18,810

b. 21,512, 21,100, 23,258, 54,512, 25,326

c. 98,954, 96,584, 99,254, 89,857, 90,213

d. 56,514, 52,548, 59,523, 51,500, 53,547



Forming the greatest and the smallest 5-digit numbers

When we want to form a 5-digit number using the given digits, we can form the:

- smallest number when we arrange the digits in the ascending order.
- greatest number when we arrange the digits in the descending order.

Without repetition of the digits

Example 10: Form the smallest 5-digit number using the digits 5, 2, 1, 4 and 8.

Solution: $1 < 2 < 4 < 5 < 8$

Thus, the required number is 12,458.

Example 11: Form the smallest 5-digit number using the digits 7, 6, 1, 5 and 0.

Solution: $0 < 1 < 5 < 6 < 7$

Thus, the required number is 01,567.

Is it a 5-digit number?

Justify your answer.

We know that 0 on the extreme left of a number has no value. So, we write the second smallest number 1 in the extreme left.

Hence, the required number is 10,567.

Example 12: Form the greatest 5-digit number using the digits 3, 6, 7, 4 and 1.

Solution: $7 > 6 > 4 > 3 > 1$

Thus, the required number is 76,431.

Form the greatest and the smallest 5-digit number using all the digits 3, 2, 8, 4 and 1.

greatest number:

smallest number:



With repetition of the digits

Example 13: Form the greatest 5-digit number using all the given digits.

8

3

9

Solution: $9 > 8 > 3$

We have to form a 5-digit number using 3 digits. So, we need to write the greatest digit that is 9, two more times in the left to form a 5-digit number.

Hence, the greatest 5-digit number using the given digits is 99,983.

Example 14: Form the smallest 5-digit number using all the given digits.

5

4

7

Solution: $4 < 5 < 7$

We have to form a 5-digit number using 3 digits. So, we need to write the smallest digit that is 4, two more times in the left to form a 5-digit number.

Hence, the smallest 5-digit number using the given digits is 44,457.

Try this
yourself



Form the greatest and the smallest 5-digit number using all the digits 3, 4 and 1.

greatest number:

smallest number:

Progress Meter 5

1. Form the greatest 5-digit numbers using the given digits when repetition of digits is not allowed.

(a.) 5, 6, 3, 0, 4

(b.) 1, 4, 7, 8, 3

(c.) 2, 6, 9, 1, 5

(d.) 0, 8, 1, 4, 7

2. Form the smallest 5-digit numbers using the given digits when repetition of digits is not allowed.

(a) 1, 5, 8, 2, 7

(b) 2, 4, 6, 8, 3

(c) 5, 0, 1, 6, 7

(d) 4, 7, 3, 6, 9

3. Form the greatest 5-digit number using all the digits 1, 5 and 3.

4. Form the greatest 5-digit number using all the digits 0, 7 and 4.

5. Form the smallest 5-digit number using all the digits 1, 5 and 3.

6. Form the smallest 5-digit number using all the digits 2, 0 and 4.



Predecessor and successor

Predecessor

The number obtained by subtracting 1 from a given number is called its **predecessor**.

$$12,345 - 1 = 12,344$$



12,344 is the predecessor of 12,345.

10,001 is the successor of 10,000.



$$10,000 + 1 = 10,001$$

Successor

The number obtained by adding 1 to a given number is called its **successor**.

Example 15:

Predecessor	Number	Successor
45,378	45,379	45,380
98,011	98,012	98,013
10,229	10,230	10,231



Progress Meter 6

1. Write the successors of the following numbers.

a. 65,544

b. 84,155

c. 22,019

d. 54,176

2. Write the predecessors of the following numbers.

a. 69,999

b. 71,050

c. 64,147

d. 11,019

3. Which number comes after 16,729?

4. Which number comes before 12,000?

5. Complete the table.

Predecessor	Number	Successor
	21,848	
13,569		
		74,201



Mental Maths

1. Find the missing numbers.

- (a) $20,199 = 20,000 + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + 90 + 9$
- (b) $51,570 = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + 500 + \underline{\hspace{2cm}} + 0$
- (c) $35,616 = \underline{\hspace{2cm}} + 5,000 + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + 6$

2. Fill in the blanks.

- (a) $10,000 = \underline{\hspace{2cm}}$ hundreds
- (b) $10,000 = \underline{\hspace{2cm}}$ ones
- (c) $10,000 = \underline{\hspace{2cm}}$ tens

3. Fill in the blanks with the numbers to complete the sequence.

- (a) 10,635, 10,636, 10,637, ,
- (b) 34,500, 35,500, 36,500, ,
- (c) 20,100, , 22,100, , 24,100
- (d) 98,765, 98,764, , 98,762,

4. State whether the following statements are true or false.

- (a) The predecessor of the greatest 5-digit number is 99,988.
- (b) The number 23,459 is an even number.
- (c) The number 45,689 is in between 45,688 and 45,690.

5. What is the difference between the place value and the face value of the underlined digit in 58,704?

6. I want to buy a bike with the least price. Which one should I buy?

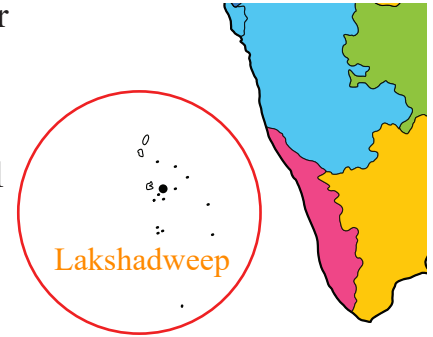
- (a) ₹51,450 (b) ₹54,015 (c) ₹54,504



Maths Connect

Lakshadweep is a group of islands located in the Laccadive Sea.

In 2001, the total population of Lakshadweep was 60,650. As per the census conducted in 2011, the population of Lakshadweep increased to 64,473, out of which 33,123 were males and 31,350 were females. The estimated population of Lakshadweep in 2021 was around 70,000.



Read the information given and answer the following questions.

1. Complete the table given below.

Year	Population in figures	Population in words
2001		
2011		
2021		

2. Compare the population of males and females in Lakshadweep in 2011 using $<$, $>$ or $=$.

3. Write the predecessor and the successor of the estimated population of Lakshadweep in 2021.

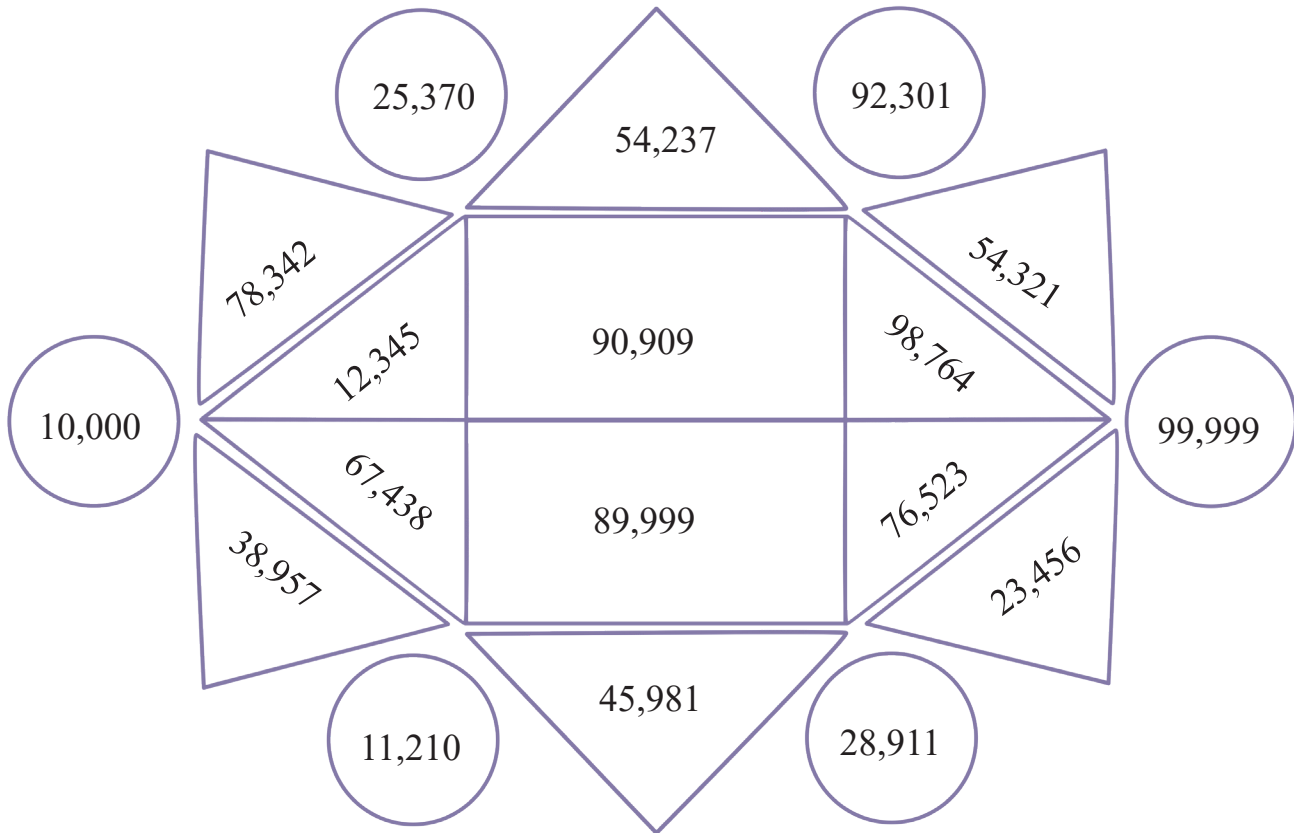
predecessor:

successor:



Fun Time

Do as directed.



1. Colour the smallest 5-digit number **green**.
2. Colour the greatest 5-digit number **orange**.
3. Colour the predecessors of the following numbers **red**.
(a) 25,371 (b) 11,211
4. Colour the successors of the following numbers **yellow**.
(a) 92,300 (b) 28,910
5. Colour the odd numbers in the triangle **blue** and the even numbers **pink**.



Exercise

1. Write the number names of the given numbers.

(a) 20,195

(b) 92,075

2. Write the numbers in figures.

(a) sixty-nine thousand nine hundred ninety-nine

(b) forty-four thousand five hundred thirty-two

3. Find the place values and the face values of the underlined digits.

(a) 42,386

(b) 75,915

4. Compare the given numbers using $<$, $>$ or $=$.

(a) 27,003 22,030

(b) 71,174 71,147

5. Write the expanded forms of the given numbers.

(a) 31,045 =

(b) 85,935 =

6. Arrange the numbers in the ascending and descending orders.

(a) 93,073, 76,397, 49,108, 74,672

(b) 63,348, 64,993, 63,283, 62,353

7. Form the greatest and the smallest 5-digit numbers using the given digits when repetition of digits is not allowed.

Digits	Greatest 5-digit number	Smallest 5-digit number
8, 0, 6, 3, 2		
2, 5, 7, 1, 3		

8. Choose the correct options.

a. The number nineteen thousand ninety is _____.

i. 19,900

ii. 90,019

iii. 10,090

iv. 19,090

b. $70,000 + 6,000 + 500 + 30 + 4 =$ _____

i. 75,634

ii. 76,534

iii. 76,543

iv. 75,643

c. The place values of the digit 6 in the number 64,600 are and .

i. 6,000 and 600

ii. 60,000 and 60

iii. 60,000 and 600

iv. 6 and 60

d. The expanded form of the number 20,400 is _____.

i. $20,000 + 400$

ii. $2,000 + 400$

iii. $20,000 + 4,000$

iv. $2,000 + 40$

e. If the place values of 7 in a number are 70,000 and 7,000, the number could be _____.

i. 72,794

ii. 77,505

iii. 70,755

iv. 27,769

f. The place value and the face value of any digit will be the same when it is in the _____ place.

i. ones

ii. tens

iii. hundreds

iv. thousands



Think Class



1. Which number should NOT be placed in the box to have the numbers in order from the greatest to the least?

62,014	45,997	?	22,369
--------	--------	---	--------

- (a) 22,652 (b) 55,051 (c) 32,987 (d) 44,254

2. X, Y, Z and W are four 5-digit numbers, each having the digits 0 to 8 only once and in the places shown. None of the other digits of the numbers are known.

(X)

8				
---	--	--	--	--

(Y)

8				
---	--	--	--	--

(Z)

				0
--	--	--	--	---

(W)

			2	
--	--	--	---	--

Tick (✓) the statements that are correct about X, Y, Z and W.

- (a) X is smaller than Y.
- (b) Y is the greatest of the four numbers.
- (c) Z is the smallest of the four numbers.
- (d) Z is always smaller than W.

3. If 4,087 stands for RANK, 5,128 stands for STUN and 9,073 stands for CAKE, then what do the following numbers stand for?

- (a) 5,904
- (b) 1,248

