# LARGE NUMBERS

Learning objectives

Students will be able:

- To read and write numbers up to 9 digits in the Indian and international systems.

- To write numbers in the expanded form and vice versa using place value.

- To compare large numbers and arrange them in ascending/descending order using place value.

- To form greatest and smallest numbers from given digits using place value.

- To round numbers up to the nearest 10, 100 and 1000.

- To write large numbers in the Roman number system.

Prior knowledge

- Four-digit, Five-digit numbers

- Standard form and expanded form of numbers

- Comparing and ordering of numbers

- Indian and international place value systems

- Rounding numbers

- Roman numbers

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                          │ Large Numbers│
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| 8-digit numbers | Comparing numbers | International place value system | | |
| 7-digit numbers | 9-digit numbers | Forming greatest and smallest numbers | Rounding numbers | Roman numbers |
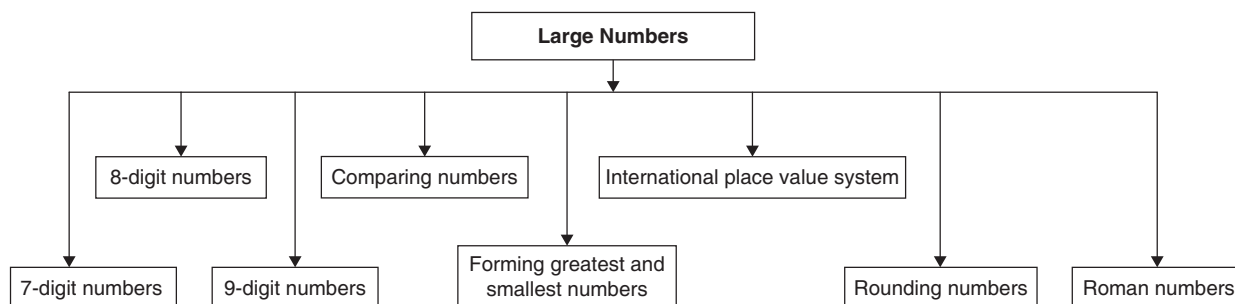
Guidelines to teach

Rewind:

- Revise 5- and 6-digit numbers, in the Indian place value systems—Instruct students to complete the exercise given in the Rewind section in the course book.

Warm Up:

- Use the Warm Up given in the course book to introduce 7-digit numbers.

7-, 8-, 9-digit numbers:

- Write a 7-digit number on the board and ask students to identify the place value of its digits in the Indian place value system, starting from the ones place.

- After they identify the lakhs place, ask them to guess the next place. (If need be, ask them to recall that the periods for thousands are divided as thousands and ten thousands followed by the lakhs place. Ask students to extend this logic to the lakhs period. Elicit from them that the lakhs period has lakhs and ten lakhs.)

- Help students conclude that the 7th digit from the right is in the ten lakhs place and is to be read accordingly.

- Direct their attention to the representation of a 7-digit number in the place value chart in the course book.

- Help them recall that the digits in the same period are read together and ask them to read the number.

- Follow the same procedure to introduce 8- and 9-digit numbers.

- Use the examples given in the course book to explain how 7-, 8- and 9-digit numbers are written in the expanded form.

- Guide the students to do the activity on making large numbers given in the course book.

- Instruct students to complete the Tryouts for 7-, 8- and 9-digit numbers.

Comparing numbers:

- Elicit from students the method of comparing two numbers.

- Extend the idea to the comparison of 7-,8- and 9-digit numbers. Ask students to study the examples given in the Guided Learning section for the comparison of two large numbers given in the course book.

Forming greatest and smallest numbers:

- Explain how to form the greatest and smallest numbers without and with repeating digits using the examples given in the Guided Learning section in the course book

- Instruct them to complete the Tryout for comparing numbers and forming greatest and smallest numbers.

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1. Extension activity for comparing numbers

- Make two sets of cards, each the size of a postcard.

- Write the numerals 0–9 on these cards, one numeral on two cards.

- Shuffle each set of 0–9 cards well. Place the two sets in separate stacks at two ends of your table.

- Ask 18 students to volunteer for the activity. Split them into two groups of 9 students.

- Instruct students in one group to pick the cards from one stack and stand in a row on their side of the table holding the cards in front of them to display the numbers prominently. Make sure that the student with the '0' card is not the first from the left.

- Ask students from the other group to do the same. Tell the class that these students have formed two 9-digit numbers.

- Ask them to read and compare the two numbers.

- Repeat the activity as many times as required for practice in comparing numbers.

- Ensure that all students get to volunteer for the activity at least once.

International place value chart:

- Help students recall the difference between the Indian and international place value systems.
- Ask students:
  - From which period does the international place value system start to differ from the Indian place value system? (*From the thousands period*)
  - How is the thousands period in these systems different? (*In the Indian system, the thousands period has only two places—thousands and ten thousands. In the International system, the thousands period has three places—thousands, ten thousands, hundred thousand.*)
  - How is the period to the left of the thousands period different in both the systems? (*In the Indian system, the lakhs and crores period occur to the left of the thousands period. In the International system, the millions period occurs to the left of the thousands period.*)
- Direct the attention of students to the representation of a 9-digit number in the international place value system. Ask students to read the number by reading the digits in the same period together.
- Instruct them to complete the Tryout for international place value system.

Rounding numbers

- Review the rules of rounding numbers as given in the course book. Work out the examples given under Guided Learning.
- Ask students to complete the statements:
  - To round a number to the nearest thousand, we round it to the ＿＿＿＿＿＿ of thousand nearest to it. (*multiple*)
  - A number which is midway is always rounded ＿＿＿＿＿＿ . (*up*) This means that it is always rounded off to the ＿＿＿＿＿＿ ten / hundred / thousand. (*higher*)
- Instruct them to complete the Tryout on rounding numbers.

Roman numbers

- Review the Roman numerals / symbols and their values.
- Elicit from students the difference between the Hindu-Arabic system and the Roman system. (*Zero and place value are used only in the Hindu-Arabic system and not in the Roman system.*)
- List all the rules for representing numbers in the Roman system, as given in the course book. Use the examples given in the course book to explain these rules.
- Ask students to study the examples under Guided Learning which represent a Hindu-Arabic number in the Roman system and a Roman number in the Hindu-Arabic system before they attempt the Tryout in the course book for this topic.

More suggestions for extension activities

2. Activity (*9-digit numbers, international place value system*)

- Write a few 9-digit numbers on a slip of paper. You may choose from the ones given here:
    - 754320876
    - 832973450
    - 609872343
    - 436879027
    - 856734219
    - 534198730
    - 46738912

- Read the first number (wrongly) as 70 crores 5 crores 40 lakhs 3 lakhs 2 ten thousands 0 thousands 8 hundred seventy six. Write it on the board without commas.

- Ask students to correct your errors and write the correct number name according to both the Indian and the International place value systems.

- Continue the activity in the same manner for the other numbers too.

Question Bank

Answer the given questions.

(I) 7-, 8- AND 9-DIGIT NUMBERS.

(1) Write the number names and the expanded forms.

(a) 15,60,789   (b) 69,26,977

(c) 7,38,41,543   (d) 5,48,99,719

(e) 49,87,32,642   (f) 26,98,31,530

(2) Write in figures.

(a) Twenty-five lakh thirty-one thousand, one hundred sixty-four.

(b) Fourteen lakh, sixty-three thousand, eight hundred fifty-two.

(c) Three crore, seventy-one lakh, fifty-four thousand, two hundred ninety-seven.

(d) Four crore, eighty-five lakh, fifteen thousand, six hundred seventy-one.

(e) Ninety-eight crore, thirty-nine lakh, forty-two thousand, one hundred nineteen.

(f) Twelve crore, fifty-five lakh, eighty-six thousand, four hundred.

(II) COMPARING NUMBERS.

(3) Compare the numbers. Fill in the blanks
with <, > or =.

(a) 45,20,120 _____ 54,20,120

(b) 4,52,83,713 _____ 4,25,83,713

(c) 92,61,209 _____ 92,88,732

(d) 71,47,82,611 _____ 73,67,28,116

(e) 5,36,84,975 _____ 5,36,82,957

(f) 9,96,24,001 _____ 9,96,24,001

(4) Write the number before.

(a) 6,23,80,600

(b) 84,71,220

(c) 32,54,72,639

(5) Write the number after.

(a) 55,72,310

(b) 64,44,32,965

(c) 7,35,86,001

(III) INTERNATIONAL PLACE VALUE SYSTEM.

(6) Write in words using the international system.

(a) 3,782,146   (b) 74,325,660

(c) 616,493,475

(IV) ROUNDING NUMBERS.

(7) Round the numbers in the given statements.

(a) 14,956 trees were planted during the tree plantation drive. (nearest 1000)

(b) 647 books were added to the public library. (nearest 10)

(V) ROMAN NUMBERS.

(8) Write the numerals in the Hindu-Arabic system.

(a) MMCDLXIII   (b) DCLXXVIII

(c) DXIX   (d) LXXVIII

(9) Write the numerals in the Roman system.

(a) 93   (b) 323

(c) 947   (d) 2710

Answer Key to the Question Bank

(I) (1) (a) Fifteen lakh, sixty thousand, seven hundred eighty-nine, 10,00,000 + 5,00,000 + 60,000 + 700 + 80 + 9; (b) Sixty-nine lakh, twenty-six thousand, nine hundred seventy-seven, 60,00,000 + 9,00,000 + 20,000 + 6000 + 900 + 70 + 7; (c) Seven crore, thirty-eight lakh, forty-one thousand, five hundred forty-three, 7,00,00,000 + 30,00,000 + 8,00,000 + 40,000 + 1000 + 500 + 40 + 3; (d) Five crore, forty-eight lakh, ninety-nine thousand, seven hundred nineteen, 5,00,00,000 + 40,00,000 + 8,00,000 + 90,000 + 9000 + 700 + 10 + 9; (e) Forty-nine crore, eighty-seven lakh, thirty-two thousand, six hundred forty-two, 40,00,00,000 + 9,00,00,000 + 80,00,000 + 7,00,000 + 30,000 + 2000 + 600 + 40 + 2; (f) Twenty-six crore, ninety-eight lakh, thirty-one thousand, five hundred thirty, 20,00,00,000 + 6,00,00,000 + 90,00,000 + 8,00,000 + 30,000 + 1000 + 500 + 30
(2) (a) 25,31,164; (b) 14,63,852; (c) 3,71,54,297; (d) 4,85,15,671; (e) 98,39,42,119; (f) 12,55,86,400

(II) (3) (a) <; (b) >; (c) <; (d) <; (e) >; (f) =; (4) (a) 6,23,80,599; (b) 84,71,219; (c) 32,54,72,638
(5) (a) 55,72,311; (b) 64,44,32,966; (c) 7,35,86,002

(III) (6) (a) Three million, seven hundred eighty-two thousand, one hundred forty-six; (b) Seventy four million, three hundred twenty-five thousand, six hundred sixty; (c) Six hundred sixteen million, four hundred ninety-three thousand, four hundred seventy-five

(IV) (7) (a) 15,000 trees were planted during the tree plantation drive; (b) 650 books were added to the public library.

(V) (8) (a) 2463; (b) 678; (c) 519; (d) 78 (9) (a) XCIII (b) CCCXXIII (c) CMXLVII (d) MMDCCX

Answer Key—Large Numbers   Worksheet 1

A. 1. c; 2. d B. 1. 1,48,65,344; 1,56,78,678; 2,23,46,778; 15,67,89,709;
2. Smallest – 1,02,56,789, Greatest – 9,87,65,210; 3. 87,84,400; 87,84,000; 4. XCIX; 5. 83

6.

	In figures	In words
Indian system	24,35,89,934	Twenty-four crore, thirty-five lakh eighty-nine thousand nine hundred thirty-four
International system	243,589,934	Two hundred forty-three million five hundred eighty-nine thousand nine hundred thirty-four

7. a. Place value - 70,00,000 Face value - 7   b. Place value 6,00,000 Face value - 6

Answer Key—Large Numbers   Worksheet 2

A. 1. b; 2. a B. 1. a. 4,37,28,793: 4,00,00,000 + 30,00,000 + 7,00,000 + 20,000 + 8000 + 700 + 90 + 3; b. 52,97,78,200: 50,00,00,000 + 2,00,00,000 + 90,00,000 + 7,00,000 + 8000 + 200;
2. 4,57,830; 6,90,456; 1,23,45,678; 8,00,90,768; 3. 56,45,792: Fifty-six lakh forty-five thousand seven hundred and ninety-two; 4. 9,856,034: Nine million eight hundred fifty-six thousand thirty-four; 5. MMCCCXL; 6. 3500 bulbs; 7. smallest number: 10,00,00,468 greatest number: 88,88,86,410; 8. a. 7,02,31,069 b. 65,29,80,078

LARGE NUMBERS	Worksheet 1

A. Choose the correct answers.

1. The smallest 8-digit number is

    a. one lakh   b. ten lakhs   c. one crore   d. ten crores

2. 8,92,56,781 is greater than

    a. 8,92,56,791   b. 8,92,56,781   c. 8,92,56,790   d. 8,92,56,780

B. Answer the questions.

1. Arrange 1,56,78,678; 2,23,46,778; 1,48,65,344; 15,67,89,709 in ascending order.

    _____

2. Make the smallest and the greatest 8-digit number using the digits
    9, 5, 6, 7, 2, 1, 0, 8 without repeating the digits.

    Smallest: _____ Greatest: _____

3. Round the number 87,84,358 to the nearest hundred and thousand.

    To the nearest hundred: _____ To the nearest thousand: _____

4. Write the Roman numeral for 99. _____

5. Write the Hindu-Arabic numeral for LXXXIII. _____

6. Write the number 243589934 in figures and in words in the Indian and the
    international systems.

	In figures	In words
Indian system		
International system		

7. Write the place value and the face value of the underlined digit in the given
    numbers.

    a. 45,7̲3,47,629:   Place value _____ Face value _____

    b. 5̲6̲,78,321:   Place value _____ Face value _____

LARGE NUMBERS	**Worksheet 2**

A. Choose the correct answers.

1. The greatest 8-digit number formed by using 5, 2, 6, 3, 0, 7, 1, 9 is

    a. 9,76,53,201   b. 9,76,53,210   c. 9,57,62,310   d. 5,97,62,310

2. 68,92,56,781 _____ 68,92,56,870

    a. <   b. >   c. =

B. Answer the questions.

1. Write in the expanded form.

    a. 4,37,28,793: _____

    b. 52,97,78,200: _____

2. Arrange 6,90,456; 4,57,830; 1,23,45,678; 8,00,90,768 in ascending order.

    _____

3. Write 5645792 in figures and in words in the Indian system.

    _____

4. Write the number 9856034 in figures and in words in the international system.

    _____

5. Write the Roman numeral for 2340. _____

6. There are 3456 bulbs in a serial decoration light. Round to the nearest 100.

    _____

7. Use the digits 8, 1, 0, 4 and 6 to make the smallest and greatest 9-digit numbers. Digits may be repeated as required.

    Smallest number: _____ Greatest number: _____

8. Write the following in the standard form.

    a) 70000000 + 200000 + 30000 + 1000 + 60 + 9   _____

    b) 600000000 + 50000000 + 2000000 + 900000 + 80000 + 70 + 8 _____