

NUMBERS BEYOND 10,000

The corresponding theme in Environmental Studies for this unit is *Natural Disasters*.

Learning Outcomes	Integration	
<ul style="list-style-type: none"> ● Read and write 5-digit numbers ● Write the expanded form of a number with respect to place value ● Recognise the sequence of numbers given in any order ● Compare 5-digit numbers ● Show the greatest and smallest numbers using the given digits ● Read and write numbers in the Indian and International systems 	Art	Maths Lab Activity, Project
	Environmental Studies, Language, Geography	Warm-up, Find Out 1, Find Out 2, Exercise
	Life Skills and Values	Do You Know?, Project
	Multiple Intelligences	Project
	Digital	Presentation, Interactivity, Animation

Suggested Number of Sessions: 15

Session 1: Recall, Warm-up

Session 2: Counting, reading and writing 5-digit numbers: *Ten thousand, Counting in ten thousands, Numbers from 10,001 to 10,100*, Exercise questions 1 and 2

Session 3: Exercise question 3, *Numbers from 10,101 to 20,000*, Exercise questions 4 to 6

Session 4: *Numbers from 20,001 to 99,999*, Digital asset: Presentation (*Showing 5-digit numbers using an abacus*), Exercise questions 7 to 9

Session 5: Do You Know?, Place value and face Value

Session 6: Expanded form, Find Out 1, Comparing numbers

Session 7: Ordering numbers: *Arranging in ascending order, Arranging in descending order*

Session 8: Find Out 2, Exercise questions 10 to 13

Session 9: Exercise question 14

Session 10: Forming the greatest and smallest numbers, Digital asset: Interactivity (Forming the greatest and smallest 5-digit numbers) *Predecessor and successor*

Session 11: Exercise questions 15 to 17 (Mind game), Digital asset: Animation (Rounding 5-digit numbers)

Session 12: Maths Lab Activity

Session 13: Indian and International Systems, Exercise questions 18 and 19

Session 14: Project (Instructions for making the chart and poster)

Session 15: Worksheets, Other pending work

Teaching Guidelines

Recall

- Guide students in completing the **Recall** exercises.



Ask students to read the conversation in the **Warm-up** section. Explain what an earthquake is. Ask students to guess what the successor of 99,999 could be. (*One hundred thousand*) Read out the part of the conversation in the Warm-up section where the mother explains that the value of one hundred thousand is the same as one lakh. Write '1 lakh = 1 hundred thousand' on the board. Tell students that natural disasters like earthquakes cause a huge damage to life and property. Thousands of lives are lost and people lose their homes, land, vehicles and so on. There is integration of Environmental Studies in this section as students learn about natural disasters and their effects. Instruct them to find out what the words for 'disaster' and 'earthquake' are in their home language. This is Language integration.

Ask students to attempt questions 1 and 3 in the Warm-up section.

Counting, reading and writing 5-digit numbers

- Write the numbers 10,000 and 99,999 on the board. Ask students to say what the predecessor and successor of 10,000 and 99,999 are, respectively (*9999, 1,00,000*). Elicit from them that 9,999 is a 4-digit number, while 1,00,000 is a 6-digit number. Help them conclude that 5-digit numbers start from 10,000 and end with 99,999.

Ten thousand

- With the help of the illustration given, explain how 10,000 is shown on an abacus. Reiterate the fact that 10,000 is 1 more than 9,999.
- Write the following on the board and ask students to fill in the blanks:
 - When 1 is added to the largest ___-digit number, we get the smallest ___-digit number (4, 5).

Counting in ten thousands

- Instruct students to observe the images of the numbers 10,000, 20,000, 30,00080,000 shown on the abacus.
- Ask them to attempt filling in the number and number name by looking at the image of the last abacus. Guide them if required.

Numbers from 10,001 to 10,100

- Read out the text given for the topic given in the coursebook. Explain the examples given in the coursebook that show the real-life use of the numbers in this range.
- Explain how the numbers in this range are represented on the abacus. Use the images given in the Coursebook to aid your explanation.
- Ask students to study how these numbers are written in words and using numerals.
- Draw an abacus on the board with spikes for place values from ones to ten thousands. Call out different numbers between 10,001 and 10,100, and ask students to represent them on the abacus and say their number names.
- Instruct students to attempt questions 1 to 3 of the Exercise. Guide them where required.

Numbers from 10,101 to 20,000


- Ask students to read the numbers given in the Coursebook for this range.
- Instruct them to study how the numbers are written in words.
- Explain how these numbers are represented on the abacus.
- Instruct students to attempt questions 4 to 6 of the Exercise. Guide them where required.

Numbers from 20,001 to 99,000

- Ask students to read the numbers given in the Coursebook for this range.
- Instruct them to study how the numbers are written in words.
- Explain how these numbers are represented on the abacus.
- To give students additional practice, draw an abacus on the board with spikes for place values from ones to ten thousands. Write different numbers in the range 20,001 to 99,000 on the board. Call students to the board by turns and ask them to show these numbers on the abacus.

Use the link to open the Presentation on using the abacus to show 5-digit numbers. This is Digital integration. The concept of place value is reinforced using digital technology.

- Instruct students to attempt questions 7 to 9 of the Exercise. Guide them where required.

 Ask a student to read out the text in the **Do You Know?** box. Instruct the other students to listen carefully. Explain what a tsunami is. (It is a huge wave formed in the oceans and seas due to underwater earthquakes. The wave hits the land and destroys life and property on a very large scale.) Explain what 'mock-drills' are and why they are important. (These drills are conducted to teach people what to do, and how to be safe, during natural disasters like, earthquakes, tsunamis and fires. Many lives can be saved during natural disasters if people are taught what to do and what not to do when a disaster strikes.) Encourage students to participate in such drills if they are conducted in their area. Explain the terms 'volunteer' and 'relief camp'. (*volunteer*: a person who helps willingly, without accepting money for the services, usually when there is an emergency; *relief camp*: a camp where people affected by disasters are provided temporary shelter, food, medicines and other emergency help) Tell students that Anandi's mother was a volunteer at a relief camp. Encourage them to volunteer for relief measures when such situations arise. There is integration with Life Skills here as students learn about the importance of participating in mock drills and about the importance of responding quickly to warnings about natural disasters. There is integration of Values as students learn that they too should help people affected by natural disasters.

Place value and face value

- Help students recall the difference between 'place value' and 'face value'. Instruct them to study the table given in the Coursebook that shows the place value and face value of the digits of a 5-digit number.
- Write a few more 5-digit numbers on the board and ask students to show the place value and face value of the digits by drawing tables, like the one given in the coursebook.

Expanded form

- Write a few 4-digit numbers on the board and ask students to give you their expanded form.

- Add the ten thousands digits to these numbers and instruct students to attempt giving their expanded form. As they have learnt the place value of the digits in the ten thousands place, students should be able to give the expanded form of 5-digit numbers.
- Draw an abacus on the board and ask students to represent a 5-digit number in the expanded form on it.
- Use the examples in the Coursebook to reinforce what the students have learnt.

S Tell students that they will learning about another natural disaster in **Find Out 1**. Explain what a drought is and how it affects the people. (It is caused when there is no rain for more than 2 to 3 years at a stretch. It causes severe shortage of water. People do not have water even for their basic needs. Severe droughts may lead to crop failures and result in loss of lives.) Tell students that people in India have had some water systems since ancient times that have helped them manage periods of water scarcity. Ask them to go through the list of water systems mentioned in the table. If possible show them the pictures of these water systems. Tell students that it is mainly in the villages that we still find these water systems. Instruct them to attempt question 3 of Find Out 1. There is integration with Geography here. Students mark specific states (with traditional watering systems) on a map of India.

- Instruct students to attempt questions 1 and 2 of Find Out 1.

Comparing numbers

- Help students recall that numbers can be compared by comparing their digits.
- Using the examples given in the Coursebook, explain how numbers with different number of digits and numbers with the same number of digits can be compared.

Ordering numbers

- Help students recall the comparison of 4-digit numbers. Give them a few 4-digit numbers and instruct them to identify the greatest and the smallest numbers.
- Extend the concept to 5-digit numbers. Tell them that to identify the greatest and the smallest among 5-digit numbers, they need to compare the digits in the ten thousands place. Use the example given in the Coursebook to reinforce their learning.

Arranging in ascending order

- Explain how 5-digit numbers are arranged in the ascending order, as given in the Coursebook.

Arranging in descending order

- Explain how 5-digit numbers are arranged in the descending order, as given in the Coursebook.

S Explain what houses on stilts are and what purpose they serve, with the help of the information given in **Find Out 2**. Students are required to refer to the Internet or other sources to answer questions 5 and 6. There is integration with Environmental Studies as students learn about the advantages of houses on stilts. They also find out the other uses of houses built on stilts. Instruct students to attempt the questions 1 to 4 in Find Out 2 with the help of the table given.

- Instruct students to attempt questions 10 to 14 of the Exercise. Guide them where required.



There is integration with Geography in Question 14 b. Students learn what the maximum depths of the five oceans of the world are.

Forming the greatest and smallest numbers

- Use the example given in the Coursebook to explain how to form the greatest and the smallest 5-digit numbers with the digits given.
- Write a few more digits on the board and ask the students to make the greatest and the smallest 5-digit numbers using them.

Encourage students to do the interactive activity based on forming the greatest and smallest 5-digit numbers with the given digits.

Predecessor and successor

- Ask students to explain the terms 'predecessor' and 'successor'.
- Instruct them to study the examples of the predecessors and successors of different numbers.
- Instruct students to attempt questions 15 to 17 of the Exercise which are given under the heading Mind Game.

Play the animation in the link for students to learn how to round off 5-digit numbers. This is Digital integration. Digital technology has been used to reinforce learning.



Arrange for the materials required for the **Maths Lab Activity**. Put students in groups of 5 and distribute the materials to the groups. Explain the method of making the number board. If required, demonstrate:

- how to make the different coloured strips and how to write the numbers on them
- how to make slits on the cardboard and
- how to insert the number strips into the slits.

Once the groups have made their number boards, explain how they are to be used. (The instructions for this part are given as a bulleted list at the end of the page.) There is Art integration here as students use their paper folding and cutting skills to create the number board.

Indian and International Systems

- Explain the representation of the smallest six-digit number in the Indian and International systems, with the help of the Coursebook.
- Help students conclude that both the Indian and International systems follow the same numeration up to the ten thousands place. There is difference in the place value only after the ten thousands place.
- Instruct students to attempt questions 18 and 19 of Exercise. Guide them where required. (**Note:** For question 19, students must be able to say that water starts filling from the bottom of the tank. The water level increases and reaches the top as more and more water is poured into the tank. So the marking of different capacities should be in the ascending order from the bottom.)



Explain what students are required to do for the **Project**. For making a chart on a recent natural disaster in India, students can look up the Internet and get the details of the effects of the disaster. They have to explain why knowing the number of people affected is important. (*Relief measures,*

such as arranging for food, clothing and providing shelter in camps, can be planned only when the number of people affected is known.)

Students are also required to create a poster on how to be prepared for such a disaster. Students draw upon their knowledge of the precautions to be taken to create the poster. They use their creativity and artistic skills to bring out the message effectively. Thus, there is integration of Art in the Project. There is integration with Life Skills as learning how to be prepared for a natural disaster will be useful to them in their life as well.

There is also integration of Multiple Intelligences (Visual-Spatial, Bodily-Kinesthetic intelligences) as students design the charts and posters as per the dimensions of the sheets of chart paper they use. They employ their fine motor skills (use their fingers skilfully) to create the charts and posters.

QUESTION BANK WITH ANSWERS

Numbers beyond 10, 000

A. Choose the correct answers.

- The place value of the digit 8 in 78,921 is:
a. 80,000 b. 800 c. 8 d. 8000
- $20,000 + 0 + 500 + 30 + 2$ is the expanded form of:
a. 20,523 b. 25,302 c. 20,532 d. 25,032
- The greatest number to be formed with the digits 4, 3, 7, 8 and 0 is:
a. 80,743 b. 87,430 c. 78,430 d. 84,730
- Which of these numbers is the successor of 21,111?
a. 22,111 b. 22,112 c. 21,112 d. 21,110

Ans: 1. d. 8000 2. c. 20,532 3. b. 87,430 4. c. 21,112

B. Arrange the numbers in ascending order.

- 31,235 31,254 13,542 32,050
- 54,560 45,640 36,201 45,460

Ans: 1. 13,542 31,235 31,254 32,050 2. 36,201 45,460 45,640 54,560

C. Arrange the numbers in descending order.

- 31,890 52,003 7654 76,432
- 32,890 43,067 23,760 32,987

Ans: 1. 76,432 52,003 31,890 7654 2. 43,067 32,987 32,890 23,760

D. Solve.

1. The ten thousands digit of a 5-digit number is double its hundreds digit. The hundreds digit is double the ones digit, which is 2. The tens digit is 4 less than the thousands digit. If the thousands digit is 1 less than the ten thousands digit, what is the 5-digit number?
2. What is 1000 less than 99,999?

Ans: 1. 87,432 2. 98,999

E. Write in words.

1. 23,456
2. 47,899
3. 15,673

Ans: 1. Twenty-three thousand four hundred fifty-six 2. Forty-seven thousand eight hundred ninety-nine 3. Fifteen thousand six hundred seventy-three

A. Write the given numbers in words.

1. 15,015 _____
2. 17,322 _____
3. 19,468 _____
4. 10,089 _____

B. Write the numbers.

1. Ten thousand twelve _____
2. Fifty thousand seven hundred thirty-six _____
3. Twenty thousand two hundred fifty-three _____
4. Forty-two thousand five hundred seventy-five _____

C. Write the place value and face value of the underlined digits.

1. 99182 _____
2. 16485 _____
3. 79432 _____

D. Compare the given numbers using <, >.

1. 8,900 17,090
2. 44,889 44,809
3. 12,123 13,213
4. 20,508 20,085
5. 52,030 52,029

E. Arrange the following in ascending order.

1. 43,256 53,124 83,569 45,789 _____
2. 14,578 45,789 98,456 12,546 _____

F. Answer the questions.

1. What is 1000 less than 90,578? _____
2. Write the numbers before and after 43,776. _____

G. Write the expanded form of the given numbers.

1. 12,506 = _____
2. 88,898 = _____

3. $44,555 =$ _____

4. $73,737 =$ _____

5. $22,004 =$ _____

H. Fill in the blanks.

1. The largest 5-digit number is _____ .

2. The smallest 5-digit number is _____ .

3. The difference between the largest and the smallest 5-digit number is _____ .

4. The largest 4-digit number formed by using both 0 and 1 equal number of times is
_____ .

5. The smallest 5-digit number formed by using different digits is _____ .

ANSWER KEY TO THE WORKSHEET

NUMBERS BEYOND 10,000

- A.** 1. Fifteen thousand fifteen 2. Seventeen thousand three hundred twenty-two
3. Ten thousand sixty-eight 4. Ten thousand eighty-nine
- B.** 1. 10,012 2. 50,736 3. 20,253 4. 42,575
- C.** 1. $\overline{99}182$: 9: Place value—9,000, Face value—92: Place value—2, Face value—2
2. $\overline{16}485$: 1: Place value—10,000, Face value—18: Place value—80, Face value—8
3. $\overline{79}432$: 4: Place value—400, Face value—43: Place value—30, Face value—3
- D.** 1. $8,900 < 17,090$ 2. $44,889 > 44,809$ 3. $12,123 < 13,213$
4. $20,508 > 20,085$ 5. $52,030 > 52,029$
- E.** 1. 43,256, 45,789, 53,124, 83,569 2. 12,546, 14,578, 45,789, 98,456
- F.** 1. 89,578 2. 43,775 and 43,777
- G.** 1. $10,000 + 2,000 + 500 + 0 + 6$
2. $80,000 + 8,000 + 800 + 90 + 8$
3. $40,000 + 4,000 + 500 + 50 + 5$
4. $70,000 + 3,000 + 700 + 30 + 7$
5. $20,000 + 2,000 + 0 + 0 + 4$
- H.** 1. 99,999 2. 10,000 3. 89,999 4. 1,100 5. 12,345