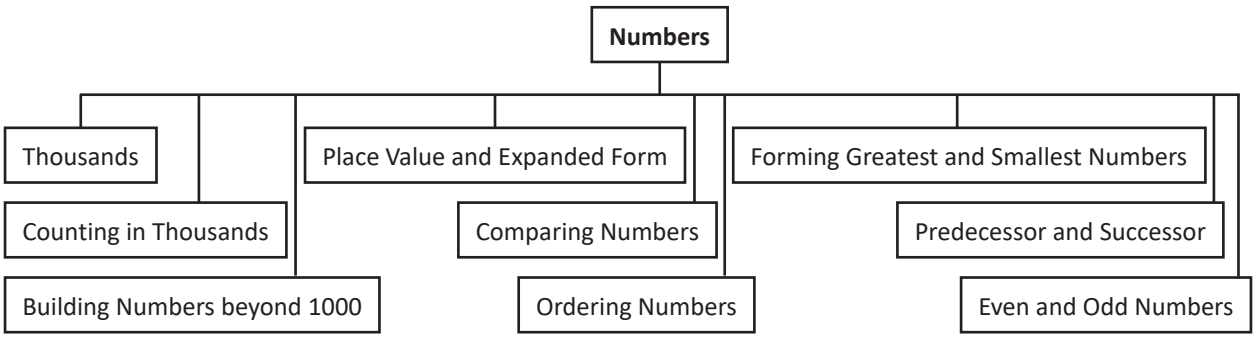
Numbers

LESSON OUTCOMES

At the end of the lesson students will be able to:

- read and write numbers up to 4 digits.
- understand place value.
- compare 4-digit numbers and arrange them in ascending and descending order.
- form the greatest and the smallest numbers with given digits.
- find the predecessor and the successor of the given numbers.
- differentiate odd and even numbers.



PREREQUISITE KNOWLEDGE

- Read and write 3-digit numbers
- Place value of 3-digit numbers
- Expanded form of 3-digit numbers

LESSON PLAN

Number of Sessions: 17

Session Plan

Session 1: Introduction [IL: Real-life, Values, Science];
Session 2: Thousands [IL: Real-life, Values, Life Skill]; Digital/PPT – Thousand; Digital/Animation - Introduction of 4-digit Numbers
Session 3: Explore! [Discovery-based Learning; MI]
Session 4: Counting in Thousands [IL: SDG - Zero Hunger]; Quick Drill
Session 5: Building Numbers Beyond Thousands [IL: Real-life]; Practice 1; Thinking Cap!
Session 6: Place Value and Expanded Form; Digital/ Animation - Understanding Place Value; Digital/IA - Place Value; Quick Drill
Session 7: Practice 2; Thinking cap! [21C: Critical Thinking]
Session 8: Comparing Numbers [IL: SDG - Life on Land, Climate Action]; Examples 1 and 2; Digital/Animation - Comparing Numbers
Session 9: Ordering Numbers [IL: India Knowledge]
Session 10: Practice 3; Thinking Cap! [21C: Critical Thinking]
Session 11: Forming the Greatest and the Smallest Number; Remember; Digital/IA - Forming Greatest and Smallest 4-digit Numbers; Thinking Cap!; TRM/Add-on Activity 1- To form the greatest and the smallest 4-digit numbers using the given digits [Game-based Learning; MI]
Session 12: Predecessor and Successor; Examples 3 and 4; Quick Drill; Digital/IA: Predecessor, Successor; TRM/Add-on Activity 2- To find the predecessor and the successor of a number [Discovery-based Learning; MI]
Session 13: Even and Odd Numbers; Explore! (2) [Game-based Learning; Discovery-based Learning; MI]
Session 14: Practice 4
Session 15: Worksheet 1
Session 16: Worksheet 2 [Higher Order Thinking Skills] [IL: India Knowledge, EVS; FL]
Session 17: TRM/Worksheets

Introduction

[IL: Real-life, Values, Science]

- Using the context of the children watching a person pluck the mangoes carefully using the nets attached to sticks in their grandfather's farm, discuss the process of harvesting fruits and the importance of handling them with care to avoid damage.
- Explain how farmers and workers sort mangoes by size and quality after harvesting. Discuss the importance of this process in ensuring that fruits reach consumers in the best possible condition. Highlight the importance of teamwork in farming and how everyone's contribution, from plucking to sorting, is essential for a successful harvest.
- Ask students to share what mangoes are called in their local language.
- Ask students to arrange the number of mangoes (3-digit numbers) in each basket in increasing order (from smallest to largest). Encourage them to name five varieties of mangoes they know and discuss their experiences with these varieties.
- Guide them to match the 3-digit numbers with its corresponding name and expanded form using a unique colour for each set.

Thousands

[IL: Real-life, Values, Life Skill][Discovery-based Learning] [MI]

- Using the story of Kashvi helping her Grandma clean the home library, ask students if they have helped clean or organise something at home. Emphasise the importance of helping family members and taking care of personal belongings like books.
- Encourage them to share their experiences and connect them to the story.
- Explain how counting and understanding numbers are essential in everyday tasks, like organising a library, managing money or keeping track of time.
- Do a demo of creating the smallest 4-digit number using Dienes Blocks and encourage students to independently recreate the number 1000 using their own set of blocks to reinforce the concept.

Counting in Thousands

- Discuss with students how counting by thousands is useful in real-life situations, such as organising food distribution during emergencies.
- Relate this to the SDG - Zero Hunger goal by explaining that distributing food efficiently helps ensure that everyone in need receives help.
- Ask students create posters or drawings that show the importance of food distribution and the role they can play in combating hunger, linking it back to counting by thousands.
- Guide students to complete the Quick Drill. Bring the class together to discuss the patterns they observed. Ask questions like: "What do you notice about the digits in the thousands place as we count by thousands?" and "What happens to the other digits (hundreds, tens, ones) when we count by thousands?"

Building Numbers Beyond 1000

[IL: Real-life]

- Discuss how Ishaan's grandfather needed to know the value of the doormats. Ask students to think about other situations such as buying groceries, saving money, counting people at an event where they might need to understand 4-digit numbers.
- Ask students to read and write 4-digit numbers and represent them using Dienes blocks.

Place Value and Expanded Form

- Explain that the face value of a digit is the digit itself. Introduce the concept of place value, showing how the position of the digit within a number determines its value.
- Distribute flashcards with different 4-digit numbers to students. Ask them to identify the place value and face value of each digit in their number using the Dienes blocks.
- Break down the clues for the riddle given in the thinking cap and explain them if needed. Explain that the number will have four unique digits, with no repetitions. Discuss that the smallest even number is 2, so the tens place digit is 2. The ones place digit is twice that, so it is 4. Since the tens digit is 2 and the ones digit is 4, the sum is 6. So, the digit in the hundreds place is 6. The hundreds digit is 6, so the thousands digit is $6 - 3 = 3$.

Comparing Numbers

[IL: SDG - Life on Land, Climate Action]

- Begin by discussing the importance of World Environment Day (WED) and how it encourages people to take actions that benefit the environment. Explain the SDGs related to Climate Action and Life on Land, and discuss the importance of protecting the environment, combating climate change and conserving wildlife.
- Facilitate a discussion on how students can contribute to these goals in their daily lives, such as by reducing waste, conserving water and planting trees.
- Organise a project where students track and compare environmental data, such as energy usage at home over three months. Discuss how they can reduce their impact based on the data collected.
- Write numbers on the board and guide students in comparing them, applying the relevant rules.

Ordering Numbers

[IL: India Knowledge]

- Share pictures of various Kondapalli toys and explain that they are lightweight wooden toys made in Andhra Pradesh. Highlight that Kondapalli toys depict scenes from Indian mythology, folklore and everyday life that reflect the traditions and stories of India.
- Provide a set of numbers representing the heights or sizes of different Kondapalli toys.
- Guide the students to arrange these numbers in ascending or descending order.
- Show pictures of mountain peaks and compare their heights to familiar buildings, such as the height of their school, so that students can better comprehend the heights of the mountains. Describe the climate and geography of these mountain peaks.
- Ask the students to arrange the peaks given in the coursebook in ascending or descending order of their heights.

Forming the Greatest and the Smallest Numbers

- Explain that to form the greatest number, you arrange the digits in decreasing order, while to form the smallest number, you arrange the digits in increasing order.
- Clarify any common errors, such as starting a number with zero.

Add-on Activity 1 [Game-based Learning] [MI]

To form the greatest and the smallest 4-digit numbers using the given digits

- Assign a number from 0 to 9 to each student.
- Play 'Fire in the Mountain' and call out the number four each time.
- The students should quickly form groups of four and arrange themselves to create the greatest and smallest 4-digit numbers using their digits. Check their answers.

Predecessor and Successor

- Explain the concept of successor and predecessor.
- Write the method: 'To find the successor of a number, we add 1 to it.' 'To find the predecessor of a number, we subtract 1 from it.'

Add-on Activity 2 [Game-based Learning] [MI]

To find the predecessor and the successor of a number

- Choose 4-digit numbers within a small range and assign a random 4-digit number from that range to each student.
- Ask them to find the student who has either the predecessor or the successor of their number.
- If they find their partner, they stay in the game. Otherwise, they are out.

Even and Odd Numbers

[Game-based Learning; Discovery-based Learning] [MI]

- Engage students through hands-on, discovery-based learning of even and odd numbers and reinforce their understanding of odd and even numbers through interactive practice and discussion.
- Demonstrate and conduct the activity of pairing rajma beans, as well as the activity where students raise two hands for even numbers and one hand for odd numbers. Discuss the results with the class.
- Emphasise that odd numbers will always have one thing leftover when paired, while even numbers will not.
- Ask the students to note the patterns in the numbers classified as odd or even.

WORKSHEETS 1 AND 2

- Worksheet 1 has questions under Mental Maths, MCQs and Mixed Bag that test the understanding of concepts on 4-digit numbers. They have a few HOTS questions too.
- Worksheet 2 has Higher Order Thinking Skills (HOTS) questions on 4-digit numbers.
- Guide students to complete the worksheets.
- You can give these worksheets as home assignments or discuss them in the classroom.

QUESTION BANK

A. MCQs.

1. The number represented  is:

   a) 3525 b) 3325 c) 5525 d) 5325

2. The number represented by seven thousand six hundred thirty-four is:

   a) 7332 b) 7632 c) 7624 d) 7634

3. The number 9000 + 40 + 6 in the standard numeral is:

   a) 9466 b) 9406 c) 9046 d) 9460

4. The number name of 5803 is:

   a) five thousand eight hundred thirteen b) five thousand eight hundred three

   c) five thousand and eighty-three d) five thousand eight hundred thirty

5. The number which has 2 in the tens place, 5 in the thousands place, 1 in the hundreds place and 7 in the ones place is:

   a) 2517 b) 5127 c) 1275 d) 5721

B. Fill in the blanks.

1. 3012, 3013, ____, ____, ____, ____, ____ 2. 6548, ____, 6550, ____, ____, ____, ____

3. 1785, ____, ____, ____, ____, ____, 1791 4. ____, ____, ____, ____, ____, 4582, 4583

C. Give the expanded form of the numbers.

1. 7328 = ____ thousands + ____ + hundreds + ____ tens + ____ ones
2. 2541 = ____ thousands + ____ hundreds + ____ tens + ____ ones

D. Write in short form.

1. 2000 + 500 + 30 + 4 = ____ 2. 4000 + 300 + 50 + 7 = ____ 3. 6000 + 800 + 20 = ____
4. 3000 + 700 + 4 = ____ 5. 5000 + 900 = ____ 6. 7000 + 20 = ____

E. Compare the numbers.

1. 4512 ☐ 4515 2. 3234 ☐ 4321 3. 7189 ☐ 7192 4. 8765 ☐ 8762

F. Ring the smallest numbers.

1. 8321 2045 3901 2. 6134 4812 9157 3. 4526 8973 2648

G. Arrange the numbers 2843, 6901, 3127 in ascending order.

H. Arrange the numbers 9812, 6734, 7891 in descending order.

I. Ring the even numbers: 2746 6153 4028 7890

J. Ring the odd numbers: 3145 6200 5093 7001

K. Fill in the missing even numbers in order: 4452 ____ 4456 ____ 4460

L. Fill in the missing odd numbers in order: 6395 ____ 6399 ____ 6403

M. Make the greatest and the smallest 4-digit numbers using the following digits.

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

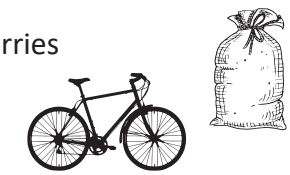
N. Write the predecessor and successor of the following numbers.

1. 3562
2. 5871
3. 4620
4. 7100
5. 8359
6. 9900

O. Write E for even and O for odd.

1. 482
2. 739
3. 1256
4. 847
5. 3012
6. 5583

P. Answer the following questions.



1. A yellow truck carries 4500 kilograms of rice, while a blue truck carries 4250 kilograms of rice. Which truck is carrying more weight?
2. The price of a bicycle is ₹ 7500, while the price of a tricycle is ₹ 1500. Which cycle costs more?

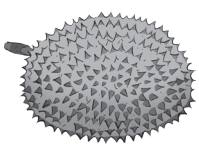
3. The male population of Chandi village in Bihar on a particular year was 2236 and the female population was 2087. Which population was more in that village?
4. The distance between Kanyakumari and Kashmir by road is 3676 kilometres and by flight is 2887 kilometres. Which distance is less?

5. The number of visitors at the India Gate on Monday was 5789, on Tuesday was 6001, on Wednesday was 4555 and on Thursday was 6200. Arrange the days along with the number of people in the ascending order.
6. The weights (in grams) of four fruits are given below. Arrange the fruits along with their weights in descending order.

Watermelon 3500 g

Pumpkin 1800 g

Coconut 1400 g



Jackfruit 4200 g

7. The place value of a place in a number is always equal to its face value in that number. Which place is it in a number?

WORKSHEET 1

A. MCQs

1. The expanded form of 6 hundreds + 4 thousands + 3 ones + 1 tens is:

   a) 6431 b) 3146 c) 4613 d) 1346

2. Among these, the odd number is:

   a) 7654 b) 1950 c) 5482 d) 4321

3. The predecessor of 8910 is:

   a) 8911 b) 8908 c) 8909 d) 8912

4. The smallest 4-digit number formed by the digits 0, 4, 2 and 7 is:

   a) 0247 b) 2047 c) 2470 d) 2407

5. The number that is 1000 less than 5000 is:

   a) 4000 b) 6000 c) 3000 d) 8000

B. Write the numbers in the expanded form of 7509.

7509 = _____ thousands + _____ hundreds + _____ tens + _____ ones

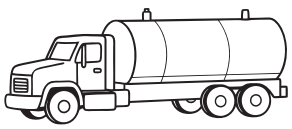
C. Write the number for the number name of five thousand and forty: _____

D. Answer the following.

1. The price of a traditional saree is ₹ 6700 and the price of a modern saree is ₹ 5400. Which saree costs more?

_____

2. A water tanker supplies 7639 litres of water daily. Rewrite the sentence using the number name of the number.



_____

3. Vivek express covers 4189 kilometres. Navyug express covers 3607 kilometres. Which train covers more distance?

_____

WORKSHEET 2

A. Answer the following questions.

1. A textile mill hires workers daily. When there are large orders, it pays more; when there are fewer orders, it pays a minimum rate of ₹ 1100 per day. Look at the list of days in a week with the daily wage offered for workers.

Days	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Amount	₹ 2000	₹ 1900	₹ 1550	₹ 1300	₹ 1100	₹ 1600

   a) On which day was the highest demand, and what was the pay on that day?

   _____

   b) Was there a demand on Tuesday? _____

   c) Was the demand higher on Friday or on Wednesday? _____

   d) Were the workers paid less than the minimal wages on any day? _____

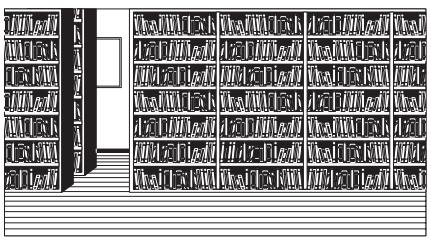
   e) Arrange the days in the ascending order of the demand for workers.

   _____

   f) Arrange the pays in the descending order of demand for workers.

   _____

2. A library records the number of books borrowed by students in three months: 2750 books in April, 1985 books in May, and 3240 books in June.



   a) Write the months in ascending order of the number of books borrowed.

   _____

   b) Did more books get borrowed in May than in April?

   _____

   c) If another month, July, had 2950 books borrowed, where would it rank among the other months in descending order—first, second, third or fourth? _____

ANSWER KEY TO THE QUESTION BANK

A. 1. a 2. d 3. c 4. b 5. b **B.** 1. 3014, 3015, 3016, 3017, 3018 2. 6549, 6551, 6552, 6553, 6554 3. 1786, 1787, 1788, 1789, 1790 4. 4577, 4578, 4579, 4580, 4581 **C.** 1. 7, 3, 2, 8 2. 2, 5, 4, 1 **D.** 1. 2534 2. 4357 3. 6820 4. 3704 5. 5900 6. 7020
E. 1. < 2. < 3. < 4. > **F.** 1. 2045 2. 4812 3. 2648 **G.** 1. 2843, 3127, 6901
H. 9812, 7891, 6734 **I.** 2746, 4028, 7890 **J.** 3145, 5093, 7001 **K.** 4454, 4458
L. 6397, 6401 **M.** 1. 8421; 1248 2. 9753; 3579 3. 6420; 2046 4. 9531; 1359
N. 1. 3561; 3563 2. 5870; 5872 3. 4619; 4621 4. 7099; 7101 5. 8358; 8360 6. 9899; 9901 **O.** 1. E 2. O 3. E 4. O 5. E 6. O **P.** 1. Yellow; 4500 kilograms 2. Bicycle; ₹ 7500 3. Male population; 2236 4. By Flight; 2887 kilometres 5. Wednesday, 4555; Monday, 5789; Tuesday, 6001; Thursday, 6200 6. Jackfruit, 4200 grams; Watermelon, 3500 g; Pumpkin, 1800 g; Coconut, 1400 g 7. Ones place

ANSWER KEY TO THE WORKSHEET 1

A. 1. c 2. d 3. c 4. b 5. a **B.** 7, 5, 0, 9 **C.** 5040 **D.** 1. Traditional Saree, ₹ 6700 2. A water tanker supplies seven thousand six hundred thirty-nine litres of water daily. 3. Vivek Express, 4189 kilometres

ANSWER KEY TO THE WORKSHEET 2

A. 1. a) Monday, ₹ 2000 b) Yes, The pay was more than the minimal rate c) Wednesday, ₹ 1550 d) No e) Friday, Thursday, Wednesday, Saturday, Tuesday, Monday f) ₹ 2000, ₹ 1900, ₹ 1600, ₹ 1550, ₹ 1300, ₹ 1100 2. a) May, April, June b) No c) Second