Teacher's Resource Book

Maths Insight 4

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Introduction

Welcome to Maths Insight 4: Teacher's Resource Book!

This Teacher's Resource Book serves as a guide to making maths education an engaging and impactful experience for young learners. It is designed to complement the Maths Insight 4: Teacher's Resources Book, offering essential tools for effective teaching.

This **Maths Insight 4: Teacher's Resource Book** contains all the essentials for delivering engaging maths lessons. It includes lesson overviews that summarise each chapter, offering a clear structure for planning and reviewing lessons with ease. Detailed plans are included to achieve learning objectives and ensure that maths concepts are well understood by students. Answer keys for coursebook exercises are also provided to save preparation time and maintain consistency in evaluations. These resources work together to support the delivery of meaningful and enjoyable maths lessons.

We hope this Teacher's Resource Book becomes an essential companion throughout the teaching journey, offering the necessary support to create meaningful and enjoyable maths lessons. Suggestions and constructive feedback are always welcome to help us improve and make this series even better for educators and students.

— The Publishers

Contents

1 Numbers up to 10,000

Background Knowledge/Review

Students studied in previous class:

a. numbers up to 3-digits
b. representing numbers on an abacus
c. place value of a digit in a number
d. writing numbers in terms of hundreds, tens and ones as expanded form
e. comparing numbers
f. ordering numbers
g. even and odd numbers
h. ordinal numbers

Objectives

After teaching this lesson, students should be able to:

a. learn building of numbers up to 10,000, i.e., learning counting in thousands.
b. learn reading and writing 4-digit numbers.
c. learn consecutive numbers.
d. learn writing place value of a digit in a 4-digit number.
e. know about the face value of a digit.
f. write a number in expanded and short form.
g. write the successor and predecessor of a number.
h. write a number more than or less than a given number.
i. learn skip counting.
j. compare and order numbers.
k. build the greatest and the smallest numbers from the given digits.

Overview of the Chapter

Reading and writing of numbers of 4-digits, place and face values of a digit in numbers, rounding off numbers and Roman numeration system.

New Vocabulary

Successor : The number that comes just after a particular number is called its successor. For example, the successor of 799 is 800.

Predecessor : The number that comes just before a particular number is called the predecessor of the number. For example, the predecessor of 400 is 399.

Teaching/Learning Materials

Abacus, 100-grid squares, card sheets with 4-digit numbers, place value chart up to thousands.

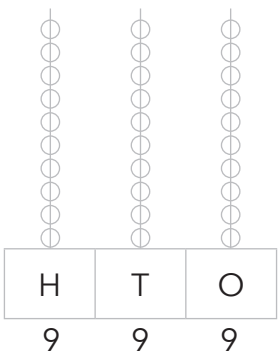
Teaching/Learning Strategies/Activities

Ask the students to recall the facts about the numbers, they learnt in the previous class.
Suggest to write a 3-digit number in ones, tens and hundreds as: 563 = 5 hundreds, 6 tens, 3 ones.
Tell the students to write the numbers using place value chart as given below:

Hundreds	Tens	Ones
H	T	O
8	9	7

897 = 8 hundreds, 9 tens, 7 ones
= eight hundred ninety seven.
Also tell them to write in place values form, 897 = 8 × 100 + 9 × 10 + 7 × 1 = 800 + 90 + 7

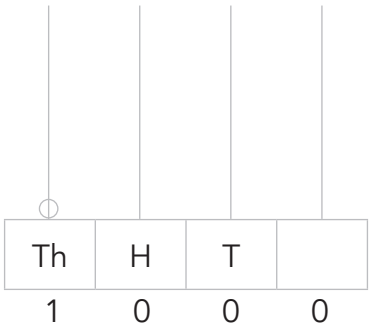
To teach the numbers beyond 999, take an abacus, show 999 on it.



This is the greatest number of 3-digits. Your children might be knowing this number, otherwise tell them.
Add 1 to 999 and see the change in the number.

$$\begin{array}{r} 999 \\ +\quad 1 \\ \hline 1000 \end{array}$$

It has become 1000 (one thousand). This is the smallest 4-digit number. To show this number you need an abacus with 4 spikes.



The place where 1 rests is called THOUSANDS place and is denoted by Th.

Form various numbers on an abacus and write them on the board and ask children to read loudly to remember the way to read 4-digit numbers.

Students may be given 100-grid squares to form bigger numbers.

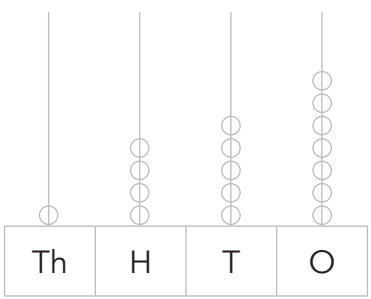
Some examples should be taken to explain formation, reading and writing the number in many forms.

= 8 × 1000 + 0 × 100 + 5 × 10 + 3 × 1
= 8000 + 50 + 3 = 8053
= 8 thousands, 0 hundreds, 5 tens, 3 ones
= eight thousand, fifty three.

Explain children that in this number we do not have any hundred.
Use abacus to read 4-digit numbers. Consider some examples for explanation.

Formation of Number 1457

Name of the Number : How to write and how to read? Show this number on abacus.



To read the number
a. first read the bead at thousands place, i.e., 1 thousand.
b. read the number of beads at hundreds place, i.e., 4 hundreds
c. read the number of beads at tens place, i.e., 5 tens
d. read the number of beads at ones place, i.e., 7 ones

1457 = 1 thousand + 4 hundreds + 5 tens + 7 ones
= 1000 + 400 + 50 + 7
= One thousand four hundred fifty seven.

Note: While reading the number, the plural form of place values is not used, i.e., One thousand four hundreds fifty sevens is not correct.

Teach your students that a number has no face value or place value. The digits in a number have both face values or place values. Explain that the face value of a digit never changes with its place.

For example: Consider numbers 1234, 1243, 1423, 4123.
The face value of 4 is **same** in all these numbers, i.e., 4
To teach place value of a digit, always use its place in the number.

1	2	3	4
Th	H	T	O

4 is at ones place. So its place value = 4 × 1 = 4

1	2	4	3
Th	H	T	O

4 is at tens place. So, its place value = 4 × 10 = 40

1	4	2	3
Th	H	T	O

4 is at hundreds place. So, its place value = 4 × 100 = 400

4	1	2	3
Th	H	T	O

4 is at thousands place. So, its place value = 4 × 1000 = 4000.

Note to tell your students that the place value of a number is increasing ten times from Right to Left.

0 is the only number whose face value and place value is always same, i.e., equal to zero.

Teach the successor of a number as the number just after it and predecessor of a number as the number just before it.

To get the successor of a number, add one to the number and tell students to subtract one from the number to get the predecessor.

For example:

Consider the number 7889

Predecessor of 7889 = 7889 – 1 = 7888

Successor of 7889 = 7889 + 1 = 7990

Building the greatest and the smallest numbers with the help of given numbers is to be taught like this: Consider the digits 1, 2, 3, 4.

Formation of the greatest number of 4-digit

First arrange the digits in decreasing order (i.e., in descending order) as below:

$$4 > 3 > 2 > 1$$

Now write 4321. This is the greatest of 4-digit number with given digits.

Formation of the smallest number of 4-digit

Arrange the digits in increasing order (i.e., in ascending order) as below:

$$1 < 2 < 3 < 4$$

Now write in order: 1234. This is the smallest 4-digit number with given digits.

Teach your students even numbers as the numbers that are completely divisible by 2 and odd numbers as the numbers that cannot be put in pairs.

For example : Even numbers : 2, 4, 6, 8, ...

Odd numbers : 1, 3, 5, 7, ...

Explain the theme hidden in the Thinking About Values questions. Tell some other story to encourage to the theme "Teamwork". You can quote "Unity is strength. When there is a teamwork and collaboration, wonderful things can be achieved".

Evaluation and Assessment

Evaluation is done in the end of the chapter. It tests the students whether they understood all the facts successfully. Simultaneously, it tests the responsibility of the teacher whether he could achieve the learning objectives.

To evaluate students' knowledge of understanding of facts. Revision exercise questions are the best way to test with. Mental Maths problems enable the students to do the problems orally and in a challenging way.

Other than these questions you may frame your own questions to include the basic facts scattered over the chapter and create situation to get answers from the students. If they respond positively, it means they have learnt all the facts and your effort was successful/ fruitful.

Hints to Some Selected Problems

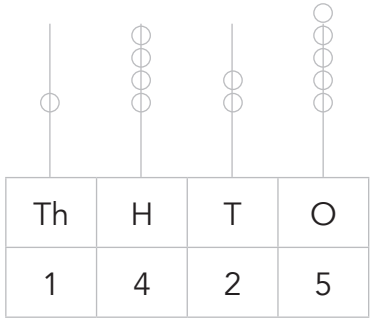
Exercise 1A

2. Expanded form of Pascal's number = 879 = 800 + 70 + 9

6. Ascending order = 78, 201, 405, 749, 879

Exercise 1B

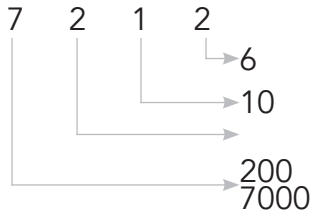
4. (a)



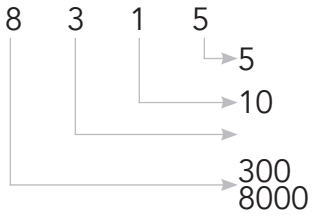
Th	H	T	O
1	4	2	5

Exercise 1C

1. (a)



3. (c)



Exercise 1D

1. 127 is greater than 107
2. 254 is less than 2,019

Exercise 1E

1. (a) 2,698 = 2,000 + 600 + 90 + 8
2. (b) 1, 6, 3, 2 = 1,236

Practice Makes Perfect

2. (a) 2,519 = 2,000 + 500 + 10 + 9
3. The smallest number = 2,047
   The greatest number = 7,420

Pick the Right Answer

1. The place value of 7 in 7,329 is 7,000
2. The predecessor of 8,900 is 8,899

Thinking About Values

1. Number names for 1,084 = one thousand and eighty-four
2. The smallest number = 1,084
   The greatest number = 1,476

Fun Time

Candies = 4
Children = 3

Brainy Maths

3. he greatest 3-digit number = 999
   The number name = nine hundred and ninety-nine
4. 2,519 < 2,915
5. The place value of tens in 4,526 = 2

Skill Builders

1. (b) 4,121
2. (c) 6,524

Real-World Problem Solving

1. (d) 1022 [1023 – 1 = 1022]
2. (b) The third student [the even number is 2]
3. (b) Name of the number card picked up by the fourth student = 9998 [Nine thousand nine hundred and ninety-eight]