Teacher's Resource Book

Maths Insight 3

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Introduction

Welcome to Maths Insight 3: 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 3: Teacher's Resources Book, offering essential tools for effective teaching.

This **Maths Insight 3: 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 1,000

Background Knowledge/Review

So far, students have learnt:

a. numbers up to 100.
b. place value.
c. writing numbers in expanded and short form.
d. naming numbers.
e. the concept of 'after', 'before', and 'between' numbers.
f. comparing numbers.

Objectives

After teaching this chapter, students will be able to:

a. represent 3-digit numbers by grouping.
b. use abacus to represent numbers up to 999.
c. understand place value.
d. write numbers in expanded and short form.
e. compare numbers.
f. identify even and odd numbers.
g. understand the meaning of ordinal numbers.

Overview of the Chapter

a. Representing numbers by grouping into hundreds, tens, and ones.
b. Use of abacus to represent 3-digit numbers.
c. Study of place value of digits in a number.
d. Study of expanded and short forms of numbers.
e. Comparing numbers.
f. Knowing ordinal numbers.

Teaching/Learning Materials

Abacus, etc.

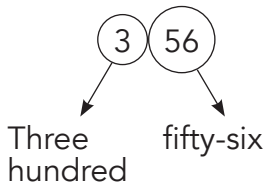
Teaching/Learning Strategies/Activities

Tell students that every digit in a number represents a grouping of some sort. Example: In

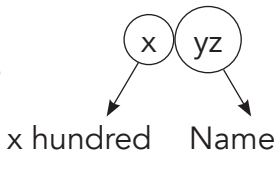
number 216, 2 represents 2 groups of 100, 1 represents 1 group of ten, and 6 represents 6 ones. Use of abacus should also be taught to represent 3-digit numbers. This is clearly a case of 2-digit numbers. Tell students that no rod can have more than 9 beads.

The teacher should ensure that the students are able to name a number and vice versa. The students need not memorise but should understand the facts given below.
Example:

356 is read as



So, xyz is read as



Students should also clearly understand how to identify the number that comes before or after a given number. To teach this, explain how to find a number by adding or subtracting 1 — for example, (number) + 1 for the number after, and (number) – 1 for the number before.

Understanding the concept of place value is also very important. Teach the special case of the place value of 0 in a number.

The expanded and short form of numbers should be emphasised.

Students should be able to compare two numbers. Explain special cases as below:
1. Same number of digits
2. Different number of digits

Case 2 is straight forward. In Case 1, we compare digit by digit, starting with the leftmost digit. The examples given to the students should be clear and leave no room for confusion. For example, compare 732 and 731, or ask them to compare 725 and 731. Use examples that ensure the concept is explained and clarified effectively.

To arrange numbers in order, students must have a good understanding of the facts needed to compare pairs of numbers.

Further, story based questions can be set to create interest and enthusiasm among students.

"Mika walked 750 steps on one day at the park. She walked 712 steps the next day. On which of these two days did she walk more?" To check order of numbers, give this question.

"A has scored 158. B has scored 159. C has scored 165. D has scored 148. Who has scored the maximum marks and who has scored the minimum marks?"

Even and odd numbers should be clearly distinguished for the students. Begin by teaching the method of forming pairs to help them understand the concept visually. It is also important to show them how to identify whether a number is even or odd by simply inspecting the last digit. Explain that if a number ends in 0, 2, 4, 6, or 8, it is an even number; otherwise, it is odd. Emphasise that every whole number is either even or odd—there are no exceptions.

Next, introduce the concept of ordinal numbers. Invite ten students to come to the front of the class and form a queue. Ask each child to say their position in line aloud—first, second, third, and so on. Then, show them how we write these positions using ordinal abbreviations such as 1st, 2nd, 3rd, 4th, etc. To reinforce the idea, use toys, coloured marbles, or classroom objects to create simple activities that involve placing or ranking items and describing their positions using ordinal numbers.

Evaluation and Assessment

In order to test a student's knowledge in this regard, some topics like comparing numbers and ordering numbers should be stressed upon. Especially ordering involves use of multiple concepts in one problem itself. Tricky comparisons like 709 and 710 or 709 and 713 can be given as part of a problem.

The concept of 'before', 'after', and 'between' two numbers should also be checked as it is also important in this chapter. Especially, numbers that come after, say, 119 or 139 should be asked, as these numbers end in 9. Also, numbers that come before 220 or 270 can be asked from the students in the test.

Value based questions should be given to test a student's understanding of family and social values.

Hints to Some Selected Problems

Exercise 1A

2. 563 → Five hundred sixty-three
696 → Six hundred ninety-six
275 → Two hundred seventy-five
912 → Nine hundred twelve

Exercise 1B

1. 134, 168, 180, 187

Exercise 1C

3. 305 = Three hundred five
416 = Four hundred sixteen
551 = Five hundred fifty-one
Five hundred twenty-eight = 528
Nine hundred forty-seven = 947
Three hundred six = 306

4. 347 = 3 hundreds + 4 tens + 7 ones = 300 + 40 + 7
408 = 4 hundreds + 0 tens + 8 ones = 400 + 0 + 8

769 = 7 hundreds + 6 tens + 9 ones = 700 + 60 + 9
298 = 2 hundreds + 9 tens + 8 ones = 200 + 90 + 8
903 = 9 hundreds + 0 tens + 3 ones = 900 + 0 + 3

Exercise 1D

1. In 654, 4 is at ones place.
In 465, 4 is at hundreds place.
In 723, 2 is at tens place.
In 659, 6 is at hundreds place.
In 379, 9 is at ones place.
In 732, 2 is at ones place.
In 273, 2 is at hundreds place.
In 459, 5 is at tens place.
In 630, 0 is at ones place.
In 541, 1 is at ones place.

2. In 256, the place value of 6 is 6 ones.
In 265, the place value of 6 is 6 tens.
In 625, the place value of 6 is 6 hundreds.
In 954, the place value of 4 is 4 ones.
In 945, the place value of 4 is 4 tens.

Exercise 1E

1. (453) (983) (259) (773)

Exercise 1F

1. Odd, even, even, odd, even

Skill Builders:

1. a. Four hundred ninety-two

2. a. Hundred place = 4
Ones place = 7
Tens place = 5
So, number = 457

3. d. Numbers from smallest to greatest = 117, 171, 177, 717, 771, 777

Real-World Problem Solving:

1. d. 800 + 70 + 4 = 874

2. c. four hundred seventy-eight

3. c. 700 + 40 + 8 = 748

4. b. In 874, 4 is at ones place, so its place value is 4 ones or 4.
7 is at tens place, so, its place value is 7 tens or 70.
8 is at hundreds place, so, its place value is 8 hundreds or 800.

5. c. Option c figure represents 1000.