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# Math Genius!

## Teacher's Resource Manual



ORANGE

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# PREFACE

The Teacher's Resource Manual is specially developed for teachers using **Orange Education's Math Genius!** Coursebooks. The manual has been designed to provide the teacher with additional materials and support that they may require to effectively teach the coursebook. Each **Teacher's Resource Manual** is completely mapped with its coursebook. The method of teaching/learning suggested in the book is completely based on the Learning-by-doing method which supports guidelines and aids of classroom teaching as per the New Education Policy 2020. The classroom teaching/learning activity helps to allay the fear of Mathematics from the minds of the learners and develops an inherent link for the subject.

Each **Teacher's Resource Manual** has two segments—Chapter-wise detailed **Lesson Plans based on 6E model** and **Practice Materials** in the form of **Worksheets**.

**Features of the Teacher's Resource Manual:**

**Detailed Lesson Plan:** It contains Topics to be covered in the chapter, Suggested Allocation of Periods, Teaching Objectives, Learning Objectives and Suggested Teaching Aids.

- **Each lesson plan is based on 6E's:** The 6E lesson plan is based on an instructional model that consists of six phases or steps: Engage, Explore, Explain, Elaborate, Evaluate and Enhance.
- **ENGAGE:** It enhances students' curiosity, interest, and engagement and help them access prior knowledge. .
- **Explore:** It provides students with opportunities to construct learning experience through activities.
- **Explain:** students acquire opportunities to explain their learning experiences with the current learning and to conceptualise the topic's main ideas.
- **Elaborate:** Students apply their knowledge to real-world applications.
- **Evaluate:** it allows teachers and students to recognize the learning effect and review and assess what they have learned and how they have learned it.
- **Enhance:** Provides students time to think, plan, investigate, and organize collected information.

**Worksheets:** This segment has worksheets for each chapter which can be used for practice and evaluation of learners' understanding of the concepts taught. At the end, answers to each worksheet have been given.

A teacher has to use his/her experience and expertise in teaching the subject. This **Teacher's Resource Manual** provides some methodology in this regard but in no way does it limit the scope of the teaching. As per the interest, experience and proficiency of the teaching, you are advised to make suitable additions and modifications to the methodology being discussed.

Suggestions for the improvement of the book will be gratefully acknowledged by the teacher's community.

**—Publisher**





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# Numbers up to 9999

## Learning Objectives

**After studying this chapter, students will be able to...**

- build, read and write 4-digit numbers.
- compare and order 4-digit numbers.
- represent 4-digit numbers on an abacus.
- form the greatest and smallest numbers.
- understand the place value and face value of a digit in 4-digit numbers.
- write expanded form and short form of numbers.
- round off the numbers to the nearest tens.
- understand Roman numerals.

## LESSON PLAN

**Suggested number of periods:** 20

**Suggested Teaching Aids:** Book: Math Genius! 3, blackboard or whiteboard, dines block up to 9999, some real-life objects like clock, pen, pencils, etc.

**Keywords:** Smallest and greatest 3-digit numbers, smallest and greatest 4-digit numbers, successor, predecessor, even and odd numbers, rounding up, rounding down, Roman numerals, Hindu-Arabic numerals.

**Pre-requisite knowledge:** Students must be familiar with numbers up to 999, their number names, the smallest and greatest 3-digit numbers, etc.

**NEP feature:** The way of teaching provides experiential learning opportunities to the students and allows them to work with the support of each other which helps in their holistic development.

**Materials required:** Number/Flash Cards, Spike abacus, number and place chits, A-4 size sheet.

| Periods: 1–2 | Topic: 4-digit numbers and counting by thousands | Suggested extra teaching aids: dines blocks, Math Genius! 3 pages 8–9 |
|---|---|---|

### ENGAGE

Introduce the topic in the classroom with some interesting activities, like asking the question:

- Who tells me which year is going on?
- How many digits are in the year?

You can also use the "Get ready" and "Let's recall" sections of the book for this purpose.

Next, ask some questions related to the topic to build the concept, like:

- Which is the smallest 3-digit number?
- Which is the greatest 3-digit number?

## EXPLORE

- The teacher will revise the learners' previous knowledge of 3-digit numbers with the help of the following game.
- Divide the class into 2 teams. Ask 3 children from Team A to step forward in the front of the class.
- The 3 children will consult among themselves and decide how to present a number, say, 207.
- The first child from Team A will clap twice, the second child will not clap, and the third child will clap seven times.
- The members of team B will have to guess the number.
- Then the teacher will ask some questions from members of Team B like–the number name of the number formed; the place/face value of each digit.
- For every correct answer they will be awarded a point. **[Collaborative Learning]**
- The teacher can change the role of teams.

## EXPLAIN

Write on the board 999 → Greatest 3-digit number.

Explain to the class that as the combination of 9 flats (Plates), 9 rods and 9 small cubes represents the number 999.

When we add 1 more small cube, *i.e.*, number 1 to 999, we get 1000, it is the smallest 4-digit number.

$$\begin{array}{rl} 999 & \rightarrow \text{greatest 3-digit number} \\ + \quad 1 & \\ \hline 1000 & \rightarrow \text{smallest 4-digit number} \end{array}$$

Explain that, as 10 small cubes make 1 rod, 10 rods make a flat (Plate) and 10 flats make a large cube, so we use a large cube to represent 1000.

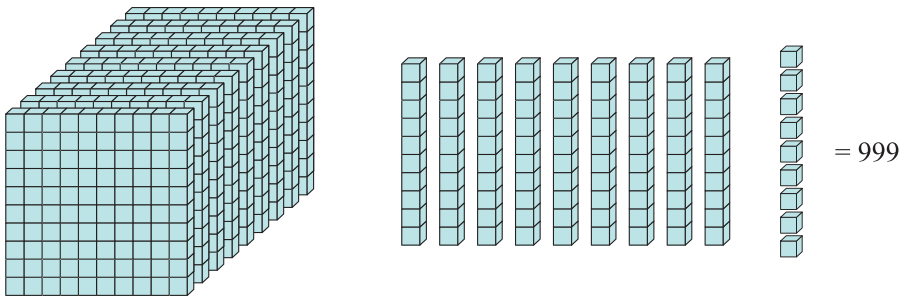
Also, tell them that a 4-digit number starts from the thousands place in the place value chart.

Next, introduce the subtopic, counting by thousands:

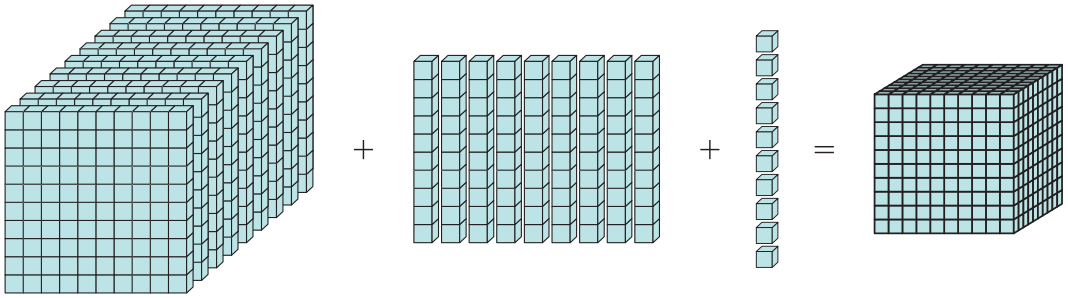
Represent 1000, 2000, 3000, …, 9000 by dines large cubes. Explain use of comma to separate the thousands digit from the other digits and the number names of each.

## ELABORATE

Represent the number 999 on the table using the dines block.




Now, put one more ones cube in the combination and let the class try to identify the number shown by the combination.



Tell the class that the number represented by the combination is now 1000.

The number 1000 is represented by a large cube of dines blocks.

And a new period, the thousands period appears in the place value chart with the introduction of 4th place called thousands place starting from right.

| Thousands Period | Ones Period | | |
|---|---|---|---|
| Thousands | Hundreds | Tens | Ones |
| 1 | 0 | 0 | 0 |

Put a thousand cube on the table alongside the previous one and ask the students, about the number of cubes.

And explain to them, by writing on the board, that it represents 2000.

Keep adding thousands-cube on the table and writing the corresponding numbers on the board till 9000.

Once this has been introduced to the students using concrete experience, introduce use of comma for thousands period then read the number names of each. (Use page no: 9 of the book) **[Experiential Learning]**

## EVALUATE

(*a*) Which is the smallest 1-digit number?

(*b*) Which is the biggest 1-digit number?

(*c*) Which is the smallest 2-digit number?

(*d*) Which is the biggest 2-digit number?

## ENHANCE

Ask students to watch the video: www.fullmarksonline.com, https://www.youtube.com/watch?v=jgtL tk_P_BY

| Periods: 3–6 | Topic: Building, reading, and writing 4-digit numbers and their representation on the Abacus | Suggested extra teaching aids: abacus set, dines blocks, number cards, Math Genius! 3 pages 10–13 |
|---|---|---|

## ENGAGE

First, ask some questions based on the previous concepts.

Like: Show 3 or 5 large dines cubes on the table and ask the students, which number it shows, and instruct them to write the number on the board using comma, also the number names.

- **Introduce the sub-topic**; the building of 4-digit numbers.
- Introduce reading and writing of 4-digit numbers.
- 4-digit numbers on the abacus.

Show an abacus with four spikes to the class.

## EXPLORE

- Three children will be lined up each holding a number card 9. The teacher will ask the students to state the number name. Next, a student holding the number card 1 will be asked to stand next to 9 in the ones place. The teacher will demonstrate how adding 1 to the greatest 3-digit number results in the smallest 4-digit number. Thus, with the help of digit flash cards and the blackboard work, 4-digit numbers will be introduced.
- Using the explanation given on Book Pg. 8, the teacher will explain how numbers progress from 2-digit to 3-digit and from 3-digit to 4-digit. With this, the new place called the 'Thousands' place will be introduced to the students. Further digit cards will be used to show different 4-digit numbers. The spike abacus will be used to physically show how we get the smallest 4-digit number by adding 1 to the greatest 3-digit number. Refer to Book Pg. 11 for the same.
- Explain the position of thousands of place in the place value chart.

**Reading, Writing and Representing 4-Digit Numbers**

- The teacher will write a few 4-digit numbers on the blackboard and encourage students to read and write the number name. She will use the 4 spikes on the abacus to show some numbers and encourage the students to tell the numeral formed. Focus on numbers with zeros in them.
- Refer to Pgs. 10-11 to further clarify the concepts.

## EXPLAIN

Explain to the class that groups of ones, tens, hundreds and thousands are used to build a 4-digit number.

Next, explain to the class about building of 4-digit numbers with an example. By taking the blocks of 4 thousands, 3 hundreds, 2 tens and 6 ones i.e., 4000 + 300 + 20 + 6, we form the number 4326.

Give some examples of 4-digit numbers, and ask the students to practice writing them on the place value chart and also their number names.

Explain to the class that while reading the 4-digit numbers first read the thousands and hundreds digits separately with their place name and then the tens and ones digits together normally.

Use different examples to explain the method of reading 4-digit numbers.

Explain that an abacus with four spikes is used for representing a 4-digit number.

## ELABORATE

Draw a place value chart on the board.

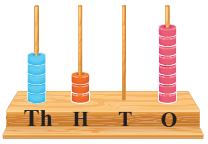
- Write a 4-digit number in it, say 4326 and ask a student to identify the ones, tens, hundreds and thousands in it.
- Use 4 thousands–cubes, 3 hundreds–flats, 2 tens–rods and 6 ones–cubes to demonstrate the number 4326.
- Also show the expanded form as: 4000 + 300 + 20 + 6 = 4326.
- Guide them to write the 4-digit numbers in the place value chart.
- Also, write the number 4326 in words on the board and get the class to read them aloud.
- Repeat the above for some other 4-digit numbers. **[Conceptual Understanding]**

Write some more 4-digit numbers in the place value chart.

Now, read the numbers one by one in the chart pointing its digits and ask the class to repeat them aloud after you.

Write a 4-digit number, say 5308 on the board.

Take an abacus with four spikes and keep it on the table. Now make the number 5308 by using the beads on the abacus.




| Th | H | T | O |
|---|---|---|---|
| 5 | 3 | 0 | 8 |

Next represent some more 4-digit numbers on the abacus and ask the class to read them aloud. **[Experiential Learning]**

## EVALUATE

**Classwork:** Ask to practice Q.1 and 2 of Practice Time 1A.

**Homework:** Ask to practice Q.3, 4 and 5 of Practice Time 1A.

## ENHANCE

- Ask the students to watch the video on the given subtopics on "www.fullmarksonline.com".
- Motivate the students to solve the "Think and Answer" given on this topic on page no. 11.

| Periods: 7–8 | Topic: Face value and Place value, Expanded and Short form of a 4-digit number | Suggested extra teaching aids: newspaper, dines blocks, Math Genius! 3 pages 13–15 |
|---|---|---|

## ENGAGE

After asking some questions based on the previous concepts,

Recall the concept of face value and place value of digits in a number.

- **Introduce subtopic:** expanded form and short form.

## EXPLORE

Take some paper slips and write a different 4-digit number on each slip.

Put these number slips in a bowl.

Divide the class into groups of 3-4 students and call a group near the bowl. Ask the students of a group to choose a slip from the bowl and read the number aloud.

Then ask them to split the number into thousands, hundreds, tens and ones.

Let them read out the place value of each digit in the number. **[Experiential Learning]**

- **Newspaper activity:** Place value–Students will be asked to bring 2 cut-outs each of 3-digit and 4-digit numbers from old newspapers and magazines and paste them in the notebook. They will be asked to write their number names and their expanded forms.

## EXPLAIN

After recalling the concept of face value and place value of a digit in a number, explain that the face value of a digit does not depend upon its position in the number, while the place value of a digit in a number depends upon its position. Make them understand the place value of zero in a number is always zero even if it is written at any place.

Recall that when a number is written as the sum of the place values of its digits, the number is said to be in its expanded form and when we write a number without showing the place value of its digits, the number is said to be in short form. Like:

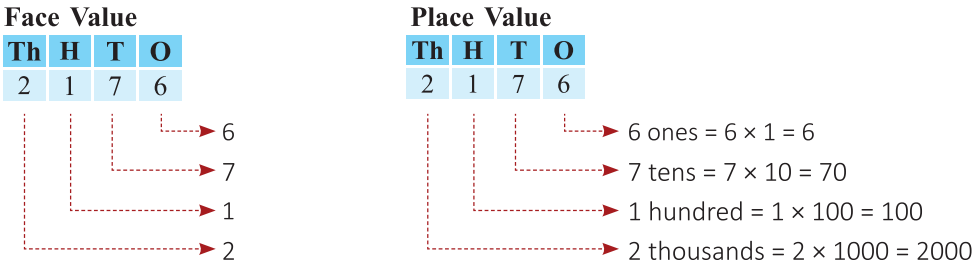
$$\underbrace{7584}_{\text{Short form}} = \underbrace{7000 + 500 + 80 + 4}_{\text{Expanded form}}$$

## ELABORATE

The face value of a digit is the value of the digit itself.

The place value of a digit in a number is the value of the digit by its place.

It is obtained by finding the product of the face value of the digit and the value of its corresponding place in the number.




**[Conceptual Learning]**

Divide the class into groups and give more practice of expanded form and short form of numbers using arrow cards.

- Encourage the students to find the expanded form of different numbers.
- Help them to find the place, place value and face value of each digit of the number and then express the number in its expanded form as well as short form.

## EVALUATE

**Classwork:** Ask the students to practice Q.1 of Practice Time 1B.

**Homework:** Ask to practice Q.2, 3, 4 and 5 of Practice Time 1B.

## ENHANCE

Ask to watch the video on the given sub-topics on "www.fullmarksonline.com".

| Periods: 9–10 | Topic: Comparing numbers, greatest and smallest numbers | Suggested extra teaching aids: Math Genius! 3 pages 15–17 |
|---|---|---|

## ENGAGE

Before introducing comparison of numbers. Review comparison of numbers up to 999.

- **Next introduce the topic:** greatest and smallest numbers.

## EXPLORE

- The teacher will explain that the word compare means to note the similarity or dissimilarity between two things. She will use examples from real life and ask the students to compare. For example, whether the math or the English book is heavier, whether the almanac or their Hindi book is longer, who is taller—their mother or father? etc.
- Once the students understand the term comparison, using the explanation given in Book Pgs. 15 to 17, they will be explained how numbers are compared. Revise the rules of comparison.
- **Introductory Activity:** 5-6 students will be asked to step out. Then the teacher will call a child and instruct her/him to line them up in the increasing/decreasing order of their height.
- The teacher will then help the students to recall the terms ascending and descending order. She can draw the students' attention to the letter '*d*' which is common for both descending and decreasing order. This will work as an aid so that they do not get confused between ascending and descending order.
- Refer to Pgs. 17 to explain ascending and descending order for 3/4-digit numbers

## EXPLAIN

Recall the students how they can compare the numbers with the help of the symbols (>, < and =). Then explain the rules for comparing larger numbers. Tell them that larger numbers can also be compared in the same way as smaller numbers.

First, explain when the numbers have different numbers of digits.

Then, explain the comparison of numbers having the same number of digits.

Explain to the class the method of finding the greatest or the smallest number in a group of three or more numbers.

## ELABORATE

- Begin with numbers with different numbers of digits, for example, 6412 > 986.
- Next, introduce comparison of 4-digit numbers having the same number of digits, for example, 6585 and 7120, telling the class that here, the thousands place digits are different.

Since 6 thousands < 7 thousands, so 6585 < 7120.

Now, introduce the comparison of 4-digit numbers where thousands digits are the same but the hundreds digits are different, for example, 6855 and 6321.

Since 8 hundreds > 3 hundreds, so 6855 > 6321.

Next, introduce the comparison of 4-digit numbers where thousands and hundreds digits are the same, for example, 4729 > 4716.

In the same way, introduce the comparison of 4-digit numbers where digits at thousands, hundreds and tens places are the same only the ones digits are different.

Use different coloured chalks to highlight the different places. **[Experiential Learning]**

Play a simple game of guessing the biggest number as follows:

Write three different numbers, for example, 7839, 999 and 5326 in the place value chart on the board.

Ask the class "which one is the smallest number?" and accept the correct answer and cross the number on board.

Next, ask them to find the bigger of two numbers, by comparing them as discussed above. Accept the correct answer.

Tell the students that the number 7839 is the greatest and 999 is the smallest number in the given group.

Repeat the same for the other group of numbers. **[Experiential Learning]**

## EVALUATE

**Homework:** Ask to practice Q.1 and 2 of Practice Time 1C.

## ENHANCE

Ask to watch the video on the given subtopics on "www.fullmarksonline.com".

| Periods: 11 | Topic: Ordering of numbers | Suggested extra teaching aids: number chits and bowl<br>Math Genius! 3 pages 17–18 |
|---|---|---|

## ENGAGE

After the introduction, recall the meaning of ascending order and descending order of numbers with some examples.

## EXPLORE

Prepare five number chits with a different 4-digit number on each and put them in a bowl. Put the bowl on the table and call a group of five students near the table. Ask each student in the group to choose a number chit. At the start signal, ask the students in the group to arrange themselves in a straight line according to the ascending order of their numbers. Ask them to do this for arranging numbers in descending order.

Repeat the activity for different groups. **[Collaborative and Experiential Learning]**

## EXPLAIN

Explain how to write numbers from the smallest to the greatest for arranging numbers in ascending order and from the greatest to the smallest for arranging numbers in descending order.

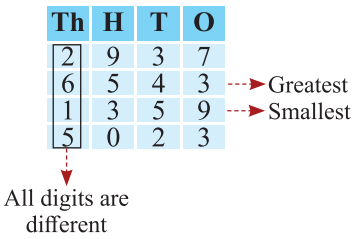
## ELABORATE

Write four numbers on the board: for example, 2,937, 6,543, 1,359 and 5,023.

Looking at the thousands place digits, 2, 6, 1 and 5; we find that $1 < 2 < 5 < 6$.

Thus, the four numbers in ascending order will be arranged as:

$1{,}359 < 2{,}937 < 5{,}023 < 6{,}543$




## EVALUATE

**Homework:** Ask to practice Q.3 and 4 of Practice Time 1C.

## ENHANCE

Ask the students to search internet and list ODI runs scored by the 5 top Indian batsmen.

| Periods: 12–13 | Topic: Forming the greatest and smallest numbers | Suggested extra teaching aids: pencil of different lengths. Math Genius! 3 pages 19–20. |
|---|---|---|

## ENGAGE

Brief some previously taught topics and ask some questions based on them like ascending order and descending order, etc. Next, introduce forming the greatest and smallest number by using given digits.

## EXPLORE

- The students will be asked to work in pairs. The teacher will instruct each pair to take at least 5 pencils/ colour pencils of varying sizes. Since the students are already familiar with the concept of ascending/ descending order, they will first be instructed to line up the pencils, for example, in ascending order.
- The teacher will then draw their attention to the fact that to line up pencils in ascending order, we need to arrange pencils in increasing order w.r.t. their lengths. Thus, we place the smallest pencil first and then the next longer pencil and so on. The last pencil to be placed is the longest among all the 5 pencils. Using, this analogy, the teacher will explain that to form the smallest number we begin with the smallest number among the given set of numbers. The opposite of this will be done when explaining formation of the greatest number.

## EXPLAIN

- Refer to the explanation given on page 19 for formation of the greatest/the smallest numbers using the given set of digits.
- Highlight the fact that to build the greatest number, write the digits in decreasing order. To build the smallest number, write the digits in increasing order.
- Emphasise on the fact that they must never begin the smallest number with a '0' from the given digits. The '0' occupies the second place from the left.
- Next, explain how to form the greatest/the smallest numbers by repeating the digits.
- Draw their attention to the fact that while forming numbers, commas are not put after every digit. The commas are placed according to the periods.

## ELABORATE

Write four digits, say 1, 9, 8 and 2 on the board, and ask the students to arrange them in descending order. After accepting their answers, write on the board: the greatest 4-digit number using digits 1, 9, 8, and 2 is 9821

Similarly, ask the students about the ascending order of the same given digits and write on the board: the smallest 4-digit number using the digits 1, 9, 8, and 2 is 1289. Ask students to copy the digits and their ascending order, descending order and the greatest and smallest number on their notebook.

Also, explain them while forming numbers, if one of the given digits is a zero (0) then, to form the greatest number, we simply arrange the given digit in descending order

To form the smallest number, we place '0' at the second highest place from the left and arrange the remaining digits in ascending order. Like with digits 7, 9, 0 and 3:

The greatest 4-digit number is 9,730.

The smallest 4-digit number is 3,079. **[Conceptual Understanding]**

## EVALUATE

**Homework:** Ask to solve Q.1 and 2 of Practice Time 1D.

## ENHANCE

Ask the students to solve the questions given in "Think and Answer" given on page 19.

| Period: 14 | Topic: Successor and Predecessor | Suggested extra teaching aids: pens, pencils, etc. Math Genius! 3 pages 20–21 |
|---|---|---|

## ENGAGE

After the introduction, give some real-life examples of the concept "before and after" and then link this to the successor and predecessor.

## EXPLORE

Divide the class into two groups.

- Call two students from each group at a time to perform the activity.
- The first group reads out a number and the other group gives its successor and predecessor.
- Now, it is the turn of the second group. The second group also reads out a number and the first group gives the successor and predecessor of it.
- If a group gives the responses correctly, they will score 2 points for the team in that round.
- Repeat the same for other students also. **[Collaborative Learning]**

## EXPLAIN

Explain to the class that the successor of a number is 1 more than the number and the predecessor of a number is 1 less than the number.

## ELABORATE

The number that comes just after the given number is called its successor. To find the successor of any number, add 1 to that number.

For example, the successor of 709 is 709 + 1 = 710. Similarly, the predecessor of 709 is 709 – 1 = 708. Explain, the successor and predecessor of some more three and four-digit numbers by referring the page number 20.

## EVALUATE

**Classwork:** Ask to solve "Think and Answer" given on page 21.

**Homework:** Ask to solve Q 1 of Practice Time 1E.

## ENHANCE

Ask the students to write 2-3 questions based on predecessor/successor in their notebook. For example,

(*a*) Which number has 1111 as its successor?

(*b*) Is the predecessor of every 4-digit number always a 4-digit number?

(*c*) Tell the predecessor and successor of the smallest/greatest number that can be formed using digits 3, 0, 4, 1 and so on.

Divide the class in pairs and tell them to ask the questions to each other.

| Period: 15 | Topic: Even and Odd Numbers | Suggested extra teaching aids: concrete items–pencil, erasers, etc. Math Genius! 3 pages 21–22 |
|---|---|---|

## ENGAGE

After the introduction, put some real-life objects like pencils or erasers and ask from students, to count them. Then link this to even and odd numbers.

## EXPLORE

Tell the students to write some information like Roll Number, Marks obtained in last exam, number of favourite cartoon channels, house number, etc. in their notebooks. Instruct them to decide whether the numbers listed are odd or even.

## EXPLAIN

Explain that the numbers which can be put into pairs are called **even numbers** and which cannot be put into pairs are called **odd numbers**.

## ELABORATE

- Begin with some countable objects, for example, 9 pencils. Put these pencils into pairs and explain to the class that since with 9 pencils only four pairs are formed and one pencil is left unpaired, 9 is an odd number.
- Again, take 12 erasers and put them into pairs. Explain the class since with 12 erasers, 6 pairs are formed and no erasers are left unpaired, so, 12 is an even number.

Thus, we can say that that all numbers ending with 0, 2, 4, 6 or 8 are even numbers and all numbers ending with 1, 3, 5, 7 or 9 are odd numbers. **[Experiential Learning]**

## EVALUATE

**Classwork:** Ask the students to write examples of even and odd numbers on the board for 2-digit, 3-digit and 4-digit numbers.

**Homework:** Ask students to solve Q. 2, 3 and 4 of Practice Time 1E.

## ENHANCE

Ask the students to check whether the vehicle numbers their parents have are even or odd. If 'Odd/Even Formula' is adopted to control traffic in their city, on which dates will their vehicles can run on the road?

| Periods: 16–17 | Topic: Rounding off numbers | Suggested extra teaching aids: newspaper, pens, pencils, etc. Math Genius! 3 pages 22–23 |
|---|---|---|

## ENGAGE

Begin with a discussion about real-life situations where rounded numbers are used. For example, about 1500 people came for the annual day function.

- Approximately, 250 athletes participated in the marathon. • The approximate cost of a toy car is ₹100.

## EXPLORE

**Rounding-off Numbers**

- The teacher should draw the attention of the children quoting examples from real life where we use rounded off numbers. For example, the headline in the newspaper says "20,000 people watched the India-Australia cricket match". Here, 20,000 is not an exact figure but a figure that is close to the exact figure.

**Rounding off to the nearest 10**

- To round off a number to the nearest 10, we use the nearest multiples of 10. We should look at the two tens between which the given number lies.
- Refer to Pgs. 22-23 to further clarify the topic.

**Newspaper Activity:** Children will be asked to bring the headlines from the newspaper having rounded off numbers and paste the same in their notebook.

Beyond the classroom: Value of reading newspapers will be emphasized with the help of newspaper activity.

## EXPLAIN

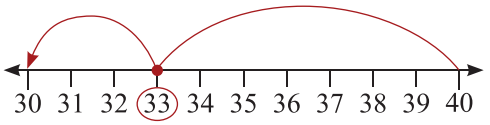
Begin with a discussion about real-life situations where rounded numbers are used. For example, there are about 40 students in class III, there are about 60 teachers in a school, etc. Emphasize the word 'about' and explain its meaning. Discuss the method of rounding off the numbers to the nearest 10.

- Explain the difference between 'rounding up' and 'rounding down'.

## ELABORATE

Draw a number line on the board.

- Teach the rules of rounding up and rounding down to the nearest by pointing out a number on the number line.



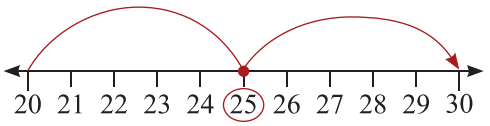

As, identify the two tens between which 33 falls. The two tens are 30 and 40. Draw a number line showing the numbers 30 to 40.

And ask the students, we observe that 33 is closer to 30 than 40.

So, 33 is rounded off to 30. It is called rounding down as 33 is rounding down to 30.

Again give examples of numbers like 36, 38 where we require rounding up.

Next, discuss about the numbers like 25, which falls exactly in the middle between two tens.




Draw a number line showing the numbers from 20 to 30.

Looking at the number line, it is clear that 25 is exactly midway between 20 and 30.

So, 25 is rounded up to 30.

Ask the children to observe the digits in the ones place of some more numbers and round off these numbers to the nearest 10. **[Experiential Learning]**

## EVALUATE

**Classwork:** Ask the students to solve Q.1 of Practice Time 1F.

**Homework:** Ask the students to solve Q.2, 3 and 4 of Practice Time 1F.

## ENHANCE

Ask the students to read, understand and remember the content given on page 23 under the tag "remember".

| Period: 18 | Topic: Roman Numerals | Suggested extra teaching aids: clocks, books, matchsticks, etc. Math Genius! 3 pages 23–24 |
|---|---|---|

## ENGAGE

Begin with a discussion about real-life objects, where we use Roman numerals. Like the dial of the watch, etc.

## EXPLORE

Roman numerals will be introduced. Children will be briefly told about the history of Roman numerals.

The numeric system represented by Roman Numerals originated in ancient Rome and remained the usual way of writing numbers throughout Europe for many years. This numeric system utilizes a series or combination of alpha-characters, or letters, which represent numeric values. These letters, when arranged in the correct order, are designed to represent a sophisticated counting system. These were used in the Roman Empire for trading and commerce.

## EXPLAIN

Have discussion with students about the Roman Numerals, rules of forming Roman numerals.

- Rules for writing Roman Numerals will be discussed concerning Pg. 24.

## ELABORATE

Show the chart of Roman numerals in the classroom.

The symbols that we use today to write numbers are called Hindu-Arabic Numerals.

However, a long time ago, there was another system of representing numbers called the Roman Numerals. This system started in ancient Rome.

In this system, seven letters of the alphabet are used as basic symbols. In which class, we consider only four symbols as given below:

| **Roman numerals** | I | V | X | L |
|---|---|---|---|---|
| **Hindu-Arabic numerals** | 1 | 5 | 10 | 50 |

A combination of these letters, when arranged in the correct order, represents a counting system in Roman numeral.

**Some rules to represent the Roman numerals are as follows:**

**Rule 1:** If a symbol is repeated, its value is added as many times as it occurs.

For example, II = 1 + 1 = 2, XX = 10 + 10 = 20.

**Rule 2:** If the smaller numeral is to the left of the bigger numeral, subtract it from the bigger numeral.

For example, IV = 5 – 1 = 4, XL = 50 – 10 = 40.

**Rule 3:** If the smaller numeral is to the right of the bigger numeral, add the two numerals.

For example, XI = 10 + 1 = 11.

**Rule 4:** If the smaller numeral is in between two numerals of greater value, subtract the smaller numeral from the greater numeral to the right. For example,

XIV = 10 + (5 – 1) = 10 + 4 = 14. **[Conceptual Learning]**

## EVALUATE

**Classwork:** Ask the students to note down Roman numerals to their notebooks.

- Discuss in the classroom to solve the question given on "Think and Answer" given on page 24.

**Homework:** Ask to solve Q.1 , 2, 3 of Practice Time 1G.

## ENHANCE

- Ask the students that: Only I, X, C and M can be repeated maximum three times to write Roman numerals.
- Ask the students to prepare a beautiful chart on Roman numerals up to 30 by using matchsticks.

**[Art Integration]**

| Periods: 19–20 | Topic: (Revision)<br>Chapter assessment | Suggested extra teaching aids:<br>Math Genius! 3 pages 25–28 |
|---|---|---|

## ENGAGE

Make students comfortable, so that they can ask any question on any previously taught topics. And start the revision of the exercise.

## EXPLAIN

Start the revision of the exercise by using Encapsulate, Chapter Assessment, Brain Sizzlers, Mental Maths and Maths Fun. Also guide them to perform the activity in the classroom.

## ELABORATE

Discuss questions 1 to 5 in the chapter assessment and accept students answer, if any confusion or error then explain and correct it. Discuss Brain Sizzlers and motivate students to solve mental maths. At last guide to the students to do the activity given on page 28.

## EVALUATE

**Classwork:** Discuss the questions 1 to 5 of Chapter Assessment in classroom.

Do the activity given on page 28.

**Homework:** Ask to practice Q.6 to 11 of Chapter Assessment given on page no. 27.

ORANGE

# ASSIGNMENT–1

Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

**Identify the correct answer.**

1. My ones digit is zero. My tens digit is 7 more than my ones digit. My hundreds digit is 6 more than my ones digit. Who am I?
   (*a*) 760 (*b*) 670 (*c*) 607 (*d*) 706
2. If we add 1 to an even number we get ..... number.
   (*a*) an odd (*b*) an even (*c*) predecessor (*d*) thrice the
3. If we add 1 to an odd number we get ..... number.
   (*a*) an even (*b*) an odd (*c*) predecessor (*d*) twice the
4. Which is true?
   (*a*) 3,876 = 3,678 (*b*) 3,876 < 2,879 (*c*) 3,876 > 3,768 (*d*) 3,876 > 3,987
5. David is trying to build the greatest 4-digit number from the digits – 3, 5, 2, 9 (use only once). Which one do you think is the greatest?
   (*a*) 9532 (*b*) 5932 (*c*) 9352 (*d*) 3952
6. What is the short form of seven thousand nine hundred two?
   (*a*) 4,792 (*b*) 7,492 (*c*) 74,92 (*d*) 7,902
7. Rakhi writes an even number greater than 2,000 in her Maths notebook. There is a 5 at the thousands place, and the sum of the digits is 18. Which number did Rakhi write in her notebook?
   (*a*) 5,092 (*b*) 5,382 (*c*) 5,582 (*d*) 3,091
8. What is the next number in the given sequence? 102, 202, 302, 402, .....
   (*a*) 403 (*b*) 502 (*c*) 422 (*d*) 123
9. In which number does the digit 3 have the greatest place value?
   (*a*) 8123 (*b*) 1382 (*c*) 3218 (*d*) 2831
10. Which of the following shows the expanded form of predecessor of number 7540?
    (*a*) 7000 + 50 + 40 (*b*) 7000 + 500 + 40 + 1
    (*c*) 6000 + 500 + 30 + 9 (*d*) 7000 + 500 + 30 + 9
11. Which digit will be in the tens place of the successor of 3199?
    (*a*) 3 (*b*) 9 (*c*) 0 (*d*) 1
12. Which statement is true?
    (*a*) If 987 is rounded to the nearest tens, it is 980.
    (*b*) If 771 is rounded to the nearest tens, it is 770.
    (*c*) If 495 is rounded to the nearest ones, it is 500.
    (*d*) If 341 is rounded to the nearest tens, it is 300.

ORANGE

# ASSIGNMENT–2



Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

## A. Fill in the blanks.

1. The smallest even number is ..... and the smallest odd number is ..... .
2. The successor of an odd number is a/an ..... number.
3. An ..... is a tool used for counting. It can have a maximum of ..... beads in each rod.
4. The predecessor of an even number is a/an ..... number.
5. A 4-digit number has two 3's and two 8's in it. On rounding off this number to the nearest ten we get 3,840. The number is .....

## B. Label True or False.

1. 3 tens > 30 ones. .....
2. The numbers written as 465 > 546 > 564 > 645 are in ascending order. .....
3. If 529 is rounded to the nearest tens, it is 530. .....
4. The place value and face value of a digit is always the same. .....
5. The predecessor of the smallest 4-digit number is 998. .....

## C. Match the following.

| Column I | Column II |
|---|---|
| 1. 15 is written in Roman numeral as | (*a*) XXV |
| 2. I am double century. | (*b*) 93 |
| 3. I am exactly between 44 and 64. | (*c*) 200 |
| 4. If you score 7 more, you will hit a century. | (*d*) 54 |
| 5. I am 5 less than 30. | (*e*) XV |

## D. Match the numbers with the number names:

| | |
|---|---|
| 1. Eight thousand nine hundred fifty-six | (*a*) 2611 |
| 2. Nine thousand four hundred eighty | (*b*) 7077 |
| 3. Two thousand six hundred eleven | (*c*) 3568 |
| 4. Seven thousand seventy-seven | (*d*) 9480 |
| 5. Three thousand five hundred sixty-eight | (*e*) 8956 |

## E. Utilise Your Brain

Use the clues to create a number in short form.

- In the thousands, the number is an odd digit greater than 5 but less than 9.
- The hundreds place digit is 5 less than the thousands place.
- The tens and ones place are both the smallest odd digits.



# 2 Addition

## Learning Objectives

**After studying this chapter, students will be able to...**

- add numbers using expanded form
- add 3-digit numbers with regrouping
- add 4-digit numbers without and with regrouping
- understand addition properties
- evaluate and estimate the sum
- solve word problems based on addition

# LESSON PLAN

**Suggested number of periods:** 16

**Suggested Teaching Aids:** Book: Math Genius! 3, blackboard or whiteboard, dines block up to 9999, some real-life objects like sketch pens, pens, pencils, number arrow cards etc.

**Keywords:** Smallest and greatest 3-digit numbers, addends, sum, rounded up, rounded down, estimation.

**Pre-requisite knowledge:** Students must be familiar with addition up to 3-digit numbers without regrouping. Solve word problems based on 1, 2 and 3 digits.

**NEP feature:** The way of teaching provides experiential learning opportunities to the students and allows them to work with the support of each other which helps in their holistic development.

| Periods: 1–2 | Topic: Addition by expanding the addends | Suggested extra teaching aids: arrow cards<br>Math Genius! 3 pages 29–31 |
|---|---|---|

## ENGAGE

Introduce the topic in the classroom with some interesting activities, like asking questions on previously learned topics and then link to addition. Like: What is the sum of the largest 2-digit number and the smallest 3-digit number? Use the "Get ready" and "Let's recall" given on page 29 and 30 of the book for this purpose. Next, introduce the topic "addition by expanding the addends".

## EXPLORE

The teacher will revise the learners' previous knowledge of the addition of 2-digit numbers with the help of the following game.

- Divide the class into 2 teams. Distribute 10 arrow cards in which a digit is written on each card.
- Ask 3 children from team A to step forward in the front of the class.
- The teacher will ask one child to form a 2-digit number by using the arrow cards, say 35, and the other child will be asked to make a number by interchanging the digits, 53 and the third child will write the numbers on the board.

- Then the teacher will ask team B to find the sum of both numbers.
- Next, the teacher changes the role of teams. **[Collaborative Learning]**

## EXPLAIN

Revise the addition of 2- and 3-digit numbers by using the vertical method. Let the students recall what the addends are. Next, introduce the method of "addition by expanding the addends", the way to understand the addition easy. In this method, we expand the addends as per their place values and then add them accordingly.

## ELABORATE

Write on the board, two 3-digit numbers in place value columns. Ask the sum of digits at ones, tens and hundreds places one by one and write the sum on the board.

| | H | T | O | |
|---|---|---|---|---|
| | 3 | 4 | 2 | Addends (numbers that are added) |
| + | 4 | 5 | 6 | |
| | 7 | 9 | 8 | → Sum (answer of addition) |

Next, discuss with the students that we can make this addition easy by expanding its addends into hundreds, tens and ones as follows:

342 ⟶ 300 + 40 + 2

456 ⟶ 400 + 50 + 6

| | H | T | O |
|---|---|---|---|
| | 300 | 40 | 2 |
| + | 400 | 50 | 6 |
| | 700 | 90 | 8 |

Start by adding ones, then tens and at last hundreds.

**Add:** 700 + 90 + 8 = 798.

## EVALUATE

**Classwork:** Ask to solve Q.1 of Practice Time 2A.

**Homework:** Ask to solve Q.2 of Practice Time 2A.

## ENHANCE

Ask students to watch the video on addition on "www.fullmarksonline.com".

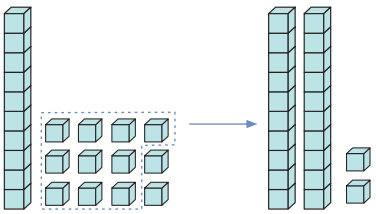
| Periods: 3-8 | Topic: Addition of 3-digit numbers with regrouping, addition of three 3-digit numbers | Suggested extra teaching aids: Math Genius! 3 page 31–35, dines blocks |
|---|---|---|

## ENGAGE

First, ask some questions to recall the previous concepts of addition based on regrouping.

Like: Put 1 ten rod and 12 ones cubes on the table, and ask the students, how many cubes are in a rod?

Next show them that, if we combine 10 cubes then we get 1 more ten rod from the given cubes. Introduce them using this method in addition.



1 ten 12 ones ⟶ 2 tens 2 ones

## EXPLORE

Divide the class into two groups. Distribute a set of flash cards having numbers 0-9 to each group. Call one group and instruct to make 3-digit numbers as many as they can.

Also, make addition problems of two 3-digit numbers, and find the sum of those problems. Next call other group. The group who will make more addition problems and give the correct answer will win the game. Also, ask which addition problems are based on without or with regrouping? Accept the responses.

## EXPLAIN

Explain to the class that when we have more than 9 ones, say 12 ones, we can regroup 12 ones into 1 ten and 2 ones and so on. We use this method of regrouping in addition. Use dines blocks to demonstrate the addition visually. Similarly, explain addition of 3-digit numbers by regrouping tens, tens and ones and hundreds.

## ELABORATE

Solve some questions on the board and demonstrate how to add the two 3-digit numbers by regrouping.

Refer textbook explanation and examples given on pages 31 to 34. After understanding this concept, demonstrate addition of three 3-digit numbers using the example given on page 35. **[Conceptual Learning]**

## EVALUATE

**Classwork:** Ask the students to solve Q.1, 2 (*a*), (*b*), (*c*) and 3. (*d*), (*e*), (*f*) of Practice Time 2B, Think and Answer given on page 35. If the students make any error while solving the addition sum, the teacher will rectify it and explain.

**Homework:** Ask the students to solve remaining questions of Practice Time 2B.

## ENHANCE

Download worksheets on addition with regrouping from the internet and practice them.

| Periods: 9-11 | Topic: Addition of 4-digit numbers, checking addition | Suggested extra teaching aids: number wheel/spinner<br>Math Genius! 3 pages 36–40 |
|---|---|---|

## ENGAGE

Divide the class into pairs. Tell the students to think of a 3-digit number and write it in their notebook. Then instruct them to rearrange the digits and make the smallest/greatest 3-digit number. Ask the students to write it below the number considered and add.

For example,

| | H | T | O | |
|---|---|---|---|---|
| | 4 | 3 | 0 | ← Number thought of |
| + | 3 | 0 | 4 | ← Smallest 3-digit number |
| | 7 | 3 | 4 | |

Now, tell them to exchange the notebooks and check the working of each other. Discuss, if any error occurs.

## EXPLORE

- Divide the class into 4 groups.
- The teacher will call one group, and ask three of them to move the wheel one by one to get the addend 1, 2 and 3.
- Then perform the addition on board with the help of other members of groups. Students of other group will watch the process, if there is any error occurred, then rectify it.
- The same process will continue with the other group.
- Group, who do all correct addition with minimal time is the winner. **[Experiential Learning]**



## EXPLAIN

First, discuss with the children, if they have any queries regarding 3-digit addition or regrouping. After the discussion, start the topic "addition of 4-digit numbers".

In this topic first discuss addition without regrouping, then with grouping.

Explain to the students as we add 3-digit numbers, in the same way we add the given 4-digit numbers.

Further explain that when we add the numbers of any column, once from the top and once from the bottom, we observe that the answer will remain the same. **[Collaborative learning]**

## ELABORATE

Start with writing on the board "**Find the sum of 6043 and 2954**".

Arrange the numbers in vertical columns and start adding, as follows:

- **Add the ones:** 3 + 4 = 7 ones. Write 7 in the ones column.
- **Add the tens:** 4 + 5 = 9 tens. Write 9 in the tens column.
- **Add the hundreds:** 0 + 9 = 9 hundreds. Write 9 in the hundreds column.
- **Add the thousands:** 6 + 2 = 8. Write 8 in the thousands column.

| | Th | H | T | O |
|---|---|---|---|---|
| | 6 | 0 | 4 | 3 |
| + | 2 | 9 | 5 | 4 |
| | 8 | 9 | 9 | 7 |

Thus, the sum of 6043 and 2954 is 8997.

In the same way demonstrate addition of three 4-digit numbers, by taking reference of example given on page 37. For checking their understanding, encourage the students to solve some questions given in Practice Time 2C.

Next, demonstrate the addition of 4-digit numbers which requires regrouping.

Write on board "**Find the sum of 3506 and 1225**".

After arranging the numbers in place value columns instruct to add as follows:

- **Add the ones:** 6 + 5 = 11 ones. Regroup 11 ones as 1 ten and 1 one
  Write 1 in the ones column and carry over 1 ten in the tens column.
- **Add the tens:** 1 (carried over) + 0 + 2 = 3 tens. Write 3 in the tens column.
- **Add the hundreds:** 5 + 2 = 7 hundreds. Write 7 in the hundreds column.
- **Add the thousands:** 3 + 1 = 4 thousands. Write 4 in the thousands column.

| | Th | H | T | O |
|---|---|---|---|---|
| | | | (1) | |
| | 3 | 5 | 0 | 6 |
| + | 1 | 2 | 2 | 5 |
| | 4 | 7 | 3 | 1 |

Thus, the sum of 3506 + 1225 = 4731.

Also, explain other examples given on pages 38 and 39 of Math Genius! 3. Hence, motivate the students to attempt the question given in Think and Answer on page 39.

Further, demonstrate on board '**Checking addition**'.

Refer textbook page 40 for explanation and examples. **[Conceptual Learning]**

## EVALUATE

**Classwork:** Ask the students to solve Q.1 (*a*), (*b*), (*c*) and (*d*) 1 of Practice Time 2C and Q.1 of Practice Time 2D, and 2E.

**Homework:** Ask the students to solve the remaining questions of Practice Time 2C, 2D and 2E, depending upon the topic they learn on that particular day.

## ENHANCE

Ask the students to work in pairs. Each one will write a 4-digit number one below the other on a sheet. Next, one student will add the numbers from top to bottom and other student will check it by adding from bottom to top.

| Periods: 12–15 | Topic: Addition properties, Estimating the sum and Word problems | Suggested extra teaching aids: transparent jar, number chits Math Genius! 3 pages 41–46 |
|---|---|---|

## ENGAGE

Start the class with an interaction. Ask some questions based on real life situation, like:

- An ice-cream seller earns ₹585 on Saturday. One Sunday, he could not go for selling ice creams. How much is his total earning in two days?
- On Monday, he earns ₹1 more than that on Saturday. How much does he earn on Monday?
- On Tuesday, he earns ₹10 more than on Monday and on Wednesday he earns ₹100 more than thart on Monday. So his earning on Tuesday = _____, and on Wednesday = _____.

Accept their responses.

Then, introduce addition properties by giving answers of these questions.

- When we add 0 to a number, what we get?
- When we add 1 to a number, what do we get?

## EXPLORE

To motivate students towards the topic estimation and revise the 'round off'. Teacher can organize a game in the classroom as follow:

- Put a transparent jar on the teacher's table.
- Make some number chits (up to 3 digits) and put it in the jar.
- Ask each student to pick numbers from the jar, then round off the numbers to nearest ten, and write their answer on same paper chit with their name and submit to teacher.
- At last the teacher will match the answer and commend students who give correct answer, motivate and elucidate those who gave wrong answer. **[Experiential Learning]**

## EXPLAIN

Explain to the students, what is the result, when we add 0, 1, 10, 100, 1000 to a number. Next, demonstrate estimation of sum i.e., addition of 2- and 3-digits number by using rounding off. Refer textbook pages 41–44 for explanation and examples.

Thereafter, discuss some real-life situations, where we use addition.

## ELABORATE

Before explaining the methods to solve a word problem or story sum, ask them to read, understand, decide the strategy, and then solve the problem. Emphasis on checking the solution so that they solve the problem correctly.

Demonstrate on board, the solution and explanation by taking reference of examples given on page 45 under the section 'word problem'. **[Conceptual Learning]**

## EVALUATE

**Classwork:** Ask the students to solve Q.1, 2 and 3 of Practice Time 2F, Q.1, 3 and 5 of Practice Time 2G, and Q.1, 2, 3 of Practice Time 2H. If the students make any error while solving the sum, the teacher will correct it and explain.

**Homework:** Ask the students to solve the remaining questions of Practice Time 2F, 2G and 2H.

## ENHANCE

- Ask the students to solve 'Maths Fun' given on page 43.
- Ask the students to watch the video on addition on "www.fullmarksonline.com".

| Period: 16 | Topic: (Revision) Chapter Assessment | Suggested extra teaching aids: Math Genius! 3 pages 46–48 |
|---|---|---|

## ENGAGE

Provide a comfortable learning environment so that students feel free to ask any questions about any previously taught topic that they are unsure of. Proceed with the revision of the exercise.

## EXPLAIN

Start the revision of the exercise by using Encapsulate, Chapter Assessment, Brain Sizzlers, and Mental Maths. Also guide them to perform the activity given in Learning by Doing section on page 48.

## ELABORATE

Discuss questions 1 to 5 in the chapter assessment and accept students answer, if any confusion or error then explain and correct it. Discuss brain sizzlers and motivate students to solve mental math. At last guide to the students to do the activity given on page 48.

## EVALUATE

**Classwork:** Discuss questions 1 of the chapter assessment in classroom.

**Homework:** Ask to solve Q.2 to 5 of chapter assessment as homework assignment.

## ENHANCE

Find a process of addition other than discussed in the book, with the use of the internet or with the help of friends, teachers and parents.

ORANGE

# ASSIGNMENT–3

Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

**Identify the correct answer.**

1. 200 more than the smallest 4-digit number is

   (*a*) 1002 (*b*) 1300 (*c*) 1200 (*d*) 1020

2. Which number makes the below sentence true?

   1677 > 777 + _____

   (*a*) 800 (*b*) 1000 (*c*) 973 (*d*) 1100

3. When Mandy takes her dog out for a walk, she takes 1,382 steps . The next day, she walks her dog and she takes 2,658 steps. How many steps did she take in all?

   (*a*) 3,931 steps (*b*) 3,930 steps (*c*) 3,409 steps (*d*) 4,040 steps

4. What is the sum of the smallest four-digit number and the greatest 3-digit number?

   (*a*) 1999 (*b*) 1000 (*c*) 999 (*d*) 1099

5. The cookie monster eats 3,870 cookies in a week. The next week, he eats 5,038 cookies. How many cookies did he eat in all?

   (*a*) 9,908 cookies (*b*) 9,809 cookies (*c*) 8,890 cookies (*d*) 8,908 cookies

6. In the first match of India's national game, Major Dhyan Chand with his team goals 35 less than his second match. In his second match, he goals 10 tens and 5 ones with his team. In his third match, they goal none of the tens but 30 more than 5 ones. How many goals did they make altogether?

   (*a*) 381 (*b*) 210 (*c*) 181 (*d*) 1080

7. The price of an automatic toy car is ₹3550. The price of a pair of a talking doll is ₹550 more than that of the toy car . What is the price of the pair of talking dolls and toy car together?

   (*a*) ₹7652 (*b*) ₹7500 (*c*) ₹7840 (*d*) ₹7650

8. In a village of Uttarakhand, 3,300 people live in pucca houses. 5,500 people live in Igloo houses and the rest 500 are living in cottages. What is the total number of people living in the village?

   (*a*) 9,307 people (*b*) 9,030 people (*c*) 9,300 people (*d*) 9,003 people

9. A number is greater than 5749 by 3608. What is the number?

   (*a*) 5,436 (*b*) 2,141 (*c*) 8,333 (*d*) 9,357

10. On adding a 2-digit number with another 2-digit number, you will get a

    (*a*) 2-digit number (*b*) 3-digit number (*c*) both (*a*) and (*b*) (*d*) 1-digit number

ORANGE

# ASSIGNMENT–4



Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

## A. Fill in the blanks.

1. The sum of the smallest 3-digit even number and the smallest 3-digit odd number is ..... .
2. On adding 74 tens + 10 hundreds + 5 thousands to 1 one, we get ..... .
3. In a stadium, 6052 men, 2456 women and 1201 children are watching the cricket match. The total number of spectators are ..... .
4. When 314 is added to its nearest tens, we get .....
5. A 3-digit number has two 3's and 8 at its one's place. On adding this number to a 2-digit number whose ones and tens place digit is 3, we get ..... .

## B. Label True or False.

1. When we add 1 to a number, we get the number itself. .....
2. On adding a 3-digit number to a 2-digit number, we obtain either a 3-digit number or a 4-digit number. .....
3. If 529 is added to its nearest tens, we get a 4-digit number. .....
4. When we add '10' to a number, the value of the digit at the tens place increases by 1 and the one's digit remains the same. .....
5. The estimated sum of the smallest 4-digit number and the greatest 3-digit odd number is 9998. .....

## C. Match the following.

| Column I | Column II |
|---|---|
| 1. 9398 + 100 | (*a*) 90 tens |
| 2. 7 hundreds + 30 tens | (*b*) 9498 |
| 3. 640 + 260 | (*c*) 1099 |
| 4. Smallest 3-digit no.+ greatest 3-digit no. | (*d*) 7235 |
| 5. 3615 + its rounds up to nearest 10 | (*e*) 1000 |

## D. Utilise Your Brain.

Given that 1 + 2 + 3 + 4 + 5 + ..... + 9 = 45. Then find the sum of 100 + 200 + 300 + .... + 900.




# Subtraction

## Learning Objectives

**After studying this chapter, students will be able to...**

- subtract 3-digit numbers without and with regrouping.
- check subtraction with addition.
- understand subtraction properties.
- perform addition and subtraction together.
- solve word problems involving subtraction.
- subtract 4-digit numbers without and with regrouping.
- evaluate and estimate the difference.

## LESSON PLAN

**Suggested number of periods:** 18

**Suggested Teaching Aids:** Book: Math Genius! 3, blackboard or whiteboard, dines block up to 9999, some real-life objects like sketch pens, pens, pencils, number arrow cards etc.

**Keywords:** Difference, minuend, subtrahend, rounded up, rounded down, estimation.

**Pre-requisite knowledge:** Students must be familiar with subtracting up to 3-digit numbers without regrouping. Solve subtraction stories based on numbers up to 3 digits.

**NEP feature:** The way of teaching provides experiential learning opportunities to the students and allows them to work with the support of each other which helps in their holistic development.

| Periods: 1–4 | Topic: Subtraction of 3-digit numbers | Suggested extra teaching aids: dines blocks<br>Math Genius! 3 pages 49–54 |
|---|---|---|

### ENGAGE

Introduce the topic in the classroom with some interesting activities, like asking the question:

(*a*) Which is the greatest 2-digit number?

(*b*) Which is the smallest 3-digit number?

(*c*) What is the difference between the greatest 2-digit and 3-digit numbers?

Represent the numbers with dines block.

After accepting the answers of students, if any queries or any wrong answers then solve them on board. Use the dines block to show the subtraction.

## EXPLORE

The teacher will revise the learners' previous knowledge of subtraction of 2-digit numbers with the help of the following game.

- Divide the class into 2 teams. Distribute 10 arrow cards in which a digit is written on each card.
- Ask 3 children from team A to step forward in the front of the class.
- The teacher will ask one child to form a 2-digit number by using the arrow cards, say 35, and the other child will be asked to make a number by interchanging the digits, 53 and the third child will write the numbers on the board.
- Then the teacher will ask team B to find the difference of both numbers.
- Next, the teacher changes the role of teams. **[Collaborative Learning]**

## EXPLAIN

After revising the subtraction of 2-digit numbers by using the vertical method, explain subtraction of 3-digit numbers without regrouping and with regrouping. For this, ask 3–4 students randomly to speak any 3-digit numbers. Write these numbers on the board. Then ask the class to choose two numbers which would they want to subtract. Accordingly, show the operation and explain the steps involved.

## ELABORATE

Talk about any real life situation where we need to subtract two numbers. For example, a school invited 865 parents/guests for viewing the Annual Day celebration. But 640 guests/parents could attend the function. How many did not come?

| | H | T | O | |
|---|---|---|---|---|
| | 8 | 6 | 5 | ← No. of guests/parents invited |
| – | 6 | 4 | 0 | ← No. of guests/parents attended |
| | 2 | 2 | 5 | |

Then demonstrate how to solve the problem using subtraction.

## EVALUATE

**Classwork:** Ask the students to solve Q.1 of Practice Time 3A. If the students make any error while solving the subtraction sum, the teacher will correct it and explain.

**Homework:** Ask the students to solve Q. 2 of Practice Time 3A.

## ENHANCE

Download worksheets on subtraction with regrouping from the internet and practice them.

| Periods: 5–8 | Topic: Subtraction of 4-digit numbers | Suggested extra teaching aids: Math Genius! 3 pages 54–57 |
|---|---|---|

## ENGAGE

After the introduction, discuss with the children, if they have any queries regarding 3-digit subtraction or regrouping. After the discussion, start the topic "subtraction of 4-digit numbers".

In this topic first discuss subtraction without regrouping, then with grouping.

## EXPLORE

Before starting 4-digit subtraction, let us explore "Trevison method "of subtraction, which is also known as European algorithm.

For example: 782 – 297

- Starting from the right side, because 7 is larger than 2, the number we need to make the number 7, 10 the number we need is 3.

- Add this number 3 to minuend 2 to get 5. Write down 5 at ones place of the difference.
- Decrease 8 of the tens column by 1.
- Again as 9 in subtrahend is larger than 7, and we need 1 to make 9, 10. Add 1 to 7 and write 8 in the tens place of difference.
- Decrease 7 of hundreds column by 1.
- As, 2 < 6, simply subtract 2 from 6.

| | H | T | O |
|---|---|---|---|
| | 7 | 8 | 2 |
| – | 2 | 9 | 7 |
| | 4 | 8 | 5 |

## EXPLAIN

First, explain the subtraction of 4-digit numbers without regrouping, then with regrouping.

Explain to the students as we subtract 3–digit numbers, in the same way we subtract the given 4-digit numbers.

## ELABORATE

Start with writing on the board "subtract 6578 from 9999".

Arrange the numbers in vertical columns and start subtracting, as follows:

9 ones – 8 ones = 1 one

9 tens – 7 tens = 2 tens

9 hundreds – 5 hundreds = 4 hundreds

9 thousands – 6 thousands = 3 thousands

Thus, 9999 – 6578 = 3421.

| | Th | H | T | O |
|---|---|---|---|---|
| | 9 | 9 | 9 | 9 |
| – | 6 | 5 | 7 | 8 |
| | 3 | 4 | 2 | 1 |

Next, demonstrate the subtraction of 4-digit numbers which requires regrouping, like "Find the difference of 3952 and 2189".

After arranging the given number in vertical columns and subtracting the subtrahend by regrouping ones, tens and hundreds, we find the difference of

3952 – 2159 = 1763.

Also, explain other questions given on pages 55 and 56 of Math Genius! 3.

| | Th | H | T | O |
|---|---|---|---|---|
| | | | 14 | |
| | | 8 | ~~4~~ | 12 |
| | 3 | ~~9~~ | ~~5~~ | ~~2~~ |
| – | 2 | 1 | 8 | 9 |
| | 1 | 7 | 6 | 3 |

## EVALUATE

**Classwork:** Ask the students to solve Q.1 (*a*), (*b*), (*d*) and (*e*) of Practice Time 3B. If the students make any error while solving the subtraction sum, the teacher will correct it and explain.

**Homework:** Ask the students to solve Q1. (*c*), (*f*), (*g*), (*h*) of Practice Time 3B.

## ENHANCE

Ask students to further solve Q.2 on their notebook.

| Periods: 9–13 | Topics: Subtraction properties, Estimating difference | Suggested extra teaching aids: Two spin wheels, with numbers on each. Math Genius! 3 pages 57–59 |
|---|---|---|

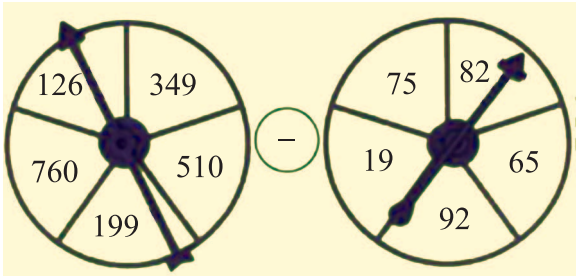
## ENGAGE

Interact with the students to recall the previous concept. For this, ask questions based on 'properties of addition' and introduce the topic 'properties of subtraction'. Like

- When we add 1 to a number, what do we get?
- When we subtract 1 from a number, what do we get?

## EXPLORE

- The teacher will revise the subtraction of 3-digit numbers, by using the spin wheel.
- Divide the class into 4 groups.
- The teacher will call one group, and ask them to move the first wheel to get the minuend and move the second wheel to get the subtrahend.
- Then perform the subtraction on board with the help of other members of groups. Other students will watch the process, if there is any error occurred, then rectify it.




- The same process will continue with the other group.
- Group, who do all correct subtraction with minimal time is the winner.

## EXPLAIN

First explain what happens when we subtract 0, 1, 10, 100, 1000 and the number itself from any number.

Refer textbook pages 57–58 and demonstrate on the board that:

- When zero is subtracted from any number, the difference is the number itself.

  For example, 45 – 0 = 45.
- When 1 is subtracted from any (non-zero) number, the difference is the number just before (predecessor) of the given number.

  For example, 128 – 1 = 127
- When we subtract 10 from a given number, we subtract 1 from the digit at the tens place and ones digit remain the same.

  For example, 1619 – 10 = 1609
- When we subtract 100 from a given number, we subtract 1 from the digit at the hundreds place and tens and ones digits remain the same.

  For example, 2499 – 100 = 2399
- When we subtract 1000 from a given number, we subtract 1 from the digit at the thousands place and hundreds, tens and ones digits remain the same.

  For example, 2499 – 1000 = 1499
- When a number is subtracted from itself, we get 0 as the difference.

  For example, 2499 – 2499 = 0

Motivate the students to solve Q.1 of Practice Time 3C and Think and Answer on page 58. Then move on to the next topic “Estimating Difference”.

## ELABORATE

Consider any real-life situation when we need to estimate the difference. Suppose Vrinda save ₹88 in her piggy bank. On the Mother’s Day, she buys a gift to present her mother. If she spends ₹52, estimate how much money is left with her?

Here, we need to estimate the difference between 88 and 52 by rounding off to the nearest 10.

Arrange the numbers in vertical columns and first round off the numbers to their nearest tens.

In 88, 8 > 5, so 88 is rounded up to 90.

In 52, 2 < 5, so, 52 is rounded down to 50.

Then estimated difference is 40, while the actual difference is 36.

**Actual difference**

| | T | O |
|---|---|---|
| | 8 | 8 |
| – | 5 | 2 |
| | 3 | 6 |

rounded up

rounded down

**Estimated difference**

| | T | O |
|---|---|---|
| | 9 | 0 |
| – | 5 | 0 |
| | 4 | 0 |

Refer page 59 to think about another real-life situation based on subtraction.

## EVALUATE

**Classwork:** Ask the students to solve Q.1, of Practice Time 3C and Q.1, 4 of Practice Time 3D. If the students make any error while solving the subtraction sum or rounding off, the teacher will correct it and explain.

**Homework:** Ask the students to solve remaining questions of Practice Time 3C and 3D.

## ENHANCE

Ask students to think two real-life examples, where they can use regrouping to nearest 100 and 1000 to estimate the difference.

| Periods: 14–16 | Topic: Addition and subtraction together, checking subtraction with addition and word problem. | Suggested extra teaching aids: Math Genius! 3 pages 60–64. |
|---|---|---|

## ENGAGE

Begin the discussion with some real-life examples, where addition and subtraction both are required to get the answer. Discuss a situation like: Somil's father gave him ₹ 200 as pocket money. From the money Somil bought a toy of ₹ 150 for his sister. After a few days, Somil's aunty gave him ₹ 100. Now how much money does Somil have? Ask students to raise their hands, who wants to answer. Discuss and rectify if any student gives the wrong answer.

## EXPLORE

**Reverse Method (Indian Algorithm):** It is one of the earliest and more popular subtraction algorithms from India. This is called the reverse method and it has some similarities to our traditional algorithm. It involves borrowing. For example: 982 – 395

**Begin from left:** 9 – 3 = 6

**In middle column:** 8 – 9. Since we cannot subtract and obtain a positive number, we cross out the 6 of the difference and change it to a 5. Place a 1 in front of the 8 to make 18. 18 – 9. Write down 9 in difference.

**Last column:** 2 – 5. Since we cannot subtract and obtain a positive number, we cross out the 9 of the difference and change it to an 8. And change the 2 to 12 in the last column. 12 – 5 = 7. Thus, 982 – 395 = 587.

| | | (18) | (12) |
|---|---|---|---|
| | 9 | ~~8~~ | ~~2~~ |
| – | 3 | 9 | 5 |
| | ~~6~~ | ~~9~~ | 7 |
| | **5** | **8** | |

## EXPLAIN

Explain to the students, that time we have to do addition and subtraction both in a single sum, in this case either we follow the sequence of operation from left to right or we solve the sum by using the following steps:

**Step 1:** Add the numbers having '+'sign or not any sign.

**Step 2:** Add the numbers having '−'sign.

**Step 3:** Subtract the sum obtained in step 2 from the sum obtained in step 1.

After this discuss the topic "checking subtraction with addition".

To check subtraction, add the difference to the smaller number (subtrahend). If the sum is equal to the bigger number that is minuend, then the subtraction is correct. At last, discuss some real-life examples, where we use subtraction or addition and subtraction both. Refer textbook pages 60–63 for more explanation and examples. Encourage the students to solve Think and Answer given on page 61.

## ELABORATE

Teacher can consider any example or take questions from Practice Time and demonstrate how to solve it on the board. Suppose 8570 people visited the National Museum on the last Sunday. Out of them, 2565 were men, 3186 women and remaining were children. How many children visited the museum that day?

To know the number of children we have to subtract the number of adults, (*i.e.*, total men and women) from total people.

That is, 8570 – (2565 + 3186)

**First Add**

| | Th | H | T | O |
|---|---|---|---|---|
| | | (1) | (1) | |
| | 2 | 5 | 6 | 5 |
| + | 3 | 1 | 8 | 6 |
| | 5 | 7 | 5 | 1 |

**Now, subtract**

| | Th | H | T | O |
|---|---|---|---|---|
| | (7) | (15) | (6) | (10) |
| | ~~8~~ | ~~5~~ | ~~7~~ | ~~0~~ |
| – | 5 | 7 | 5 | 1 |
| | 2 | 8 | 1 | 9 |

Thus, 2819 children visited the museum.

Then motivate students to solve the questions given in the book.

## EVALUATE

**Classwork:** Ask the students to solve Q.1 (*a*), (*b*); Q.2 (*a*), (*b*) of Practice Time 3E; Q.1 and 2 of Practice Time 3F. If the students make any error while solving the subtraction sum or rounding off, the teacher will correct it and explain.

**Homework:** Complete remaining questions of Practice Time 3E and 3F.

## ENHANCE

Ask students to download the worksheet from "www.fullmarksonline.com" and practice them.

| Periods: 17–18 | Topic: (Revision) Chapter Assessment | Suggested extra teaching aids: Math Genius! 3 pages 64–66 |
|---|---|---|

## ENGAGE

Make students comfortable, so that they can ask any question on any previously taught topics in which they have any confusion.

## EXPLAIN

Start the revision of the exercise by using Encapsulate, Mental Math, Chapter Assessment, Brain Sizzlers, and Maths Fun. Also guide them to perform the activity in the classroom.

## ELABORATE

Discuss questions 1 to 5 in the chapter assessment and accept students answer, if any confusion or error then explain and correct it. Discuss brain sizzlers and motivate students to solve mental math. At last guide to the students to do the activity given on page 66.

## EVALUATE

**Classwork:** Discuss questions 1 to 5 of the chapter assessment in classroom.

Do the activity given on page 66.

**Homework:** Q.6 to 10 of Chapter Assessment given on page 65.

## ENHANCE

Find a process of subtraction other than discussed in the book, with the use of the internet with the help of friends, teachers and parents.

ORANGE

# ASSIGNMENT–5

Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

**Identify the correct answer.**

1. When we subtract 10 from 4369, the digit at ..... place decreases by 1.
   (*a*) Ones (*b*) Tens (*c*) Hundred (*d*) Thousand
2. The difference between two numbers is 1307. If the larger number is 9577, find the smaller one.
   (*a*) 8207 (*b*) 10884 (*c*) 2870 (*d*) 8270
3. Sachin scored 186 runs in a test cricket match. How many more runs should he make to score a double-century?
   (*a*) 14 (*b*) 12 (*c*) 13 (*d*) 24
4. Martin's car odometer showed 4,393 km. His wife's car odometer showed 6,481 km. How much more distance was shown on his wife's car odometer than on Martin's car odometer?
   (*a*) 1,088 km (*b*) 2,088 km (*c*) 6,112 km (*d*) 10,874 km
5. A sheep farmer had 1,273 sheep in 2020 and 1,470 sheep in 2021. Right now, he has 47 less than what he had altogether those two years before. How many sheep does he have right now?
   (*a*) 3,827 sheep (*b*) 7,261 sheep (*c*) 2,696 sheep (*d*) 1,362 sheep
6. During the summer, there are 3,853 people at Pulicat Lake. During the winter, that number drops to 1,295 people. How many more people stay at Pulicat Lake in the summer than in the winter?
   (*a*) 2,558 people (*b*) 3,559 people (*c*) 2,669 people (*d*) 3,668 people
7. Which number makes the equation true?
   ..... – 456 = 888 – 555
   (*a*) 789 (*b*) 333 (*c*) 889 (*d*) 779
8. Which numbers complete the pattern?
   6 – 5 = ..... , 60 – 50 =....., 600 – 500 =.....
   (*a*) 1, 11, 111 (*b*) 1, 10, 100 (*c*) 11, 110, 111 (*d*) 10, 110, 111
9. Look at the table below. What is rule for the table?

| Input | Output |
|---|---|
| 345 | 330 |
| 456 | 441 |
| 789 | 774 |
| 910 | 895 |

   (*a*) Subtract 35 (*b*) Subtract 18 (*c*) Subtract 15 (*d*) Subtract 25
10. Pooja walks 320 m from her house to the park. She walks in the park and then returned back home. If Pooja walked a total of 987 m today, how much did she walk in the park?
    (*a*) 667 m (*b*) 657 m (*c*) 327 m (*d*) 347 m

ORANGE

# ASSIGNMENT–6

Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

## A. Fill in the blanks.

1. A number is subtracted from 6489 to get 3456. If the same number is added to 3657, then it gives ..... .
2. 1000 less than 1756 is ..... .
3. ..... added to 4758 gives 6002.
4. 5 thousands 40 hundreds – 590 tens = ..... .
5. In 8030 – ☐ = 3610, the hundreds digit of the missing number is ..... .

## B. Label True or False.

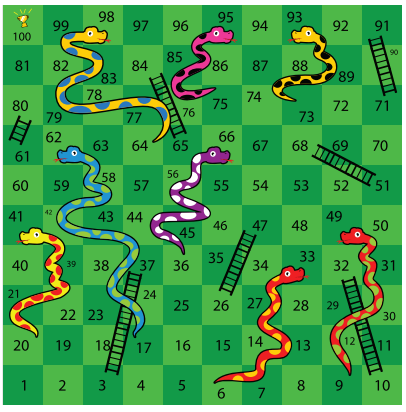
1. 2 thousands 7 hundreds 82 ones – 1000 = 1882 ones ..... 
2. The place value of hundreds digit in the difference of 6537 – 5478 is 100. .....
3. 1000 + 500 + 40 + 1 = 2000 – 459 .....
4. 1000 – 73 tens = 430 tens. .....
5. The difference between 723 tens and 7 thousands 23 tens is 0. .....

## C. Match the following.

| Column I | Column II |
|---|---|
| 1. 6548 – 647 = | (*a*) 2445 |
| 2. 400 tens – 2 hundreds 40 ones = | (*b*) 2207 |
| 3. 7800 – 1000 = | (*c*) 3760 |
| 4. _____ – 7 hundreds = 1745 | (*d*) 6800 |
| 5. 4207 – 2 thousands = | (*e*) 5901 |

## D. Utilise Your Brain.

Suman was playing snakes and ladder with her father. She got the number 5 on throwing the dice. After moving 5 paces she reached number 62, where a snake slipped her to number 17. On which number was Suman positioned before her turn?






# Multiplication

## Learning Objectives

**After studying this chapter, students will be able to...**

- Know the multiplication fact.
- build and remember multiplication tables.
- multiply 2- and 3-digit numbers by a 1-digit number (without and with regrouping).
- multiply 2- and 3-digit numbers by a 2-digit number.
- explore multiplication.
- understand the properties of multiplication.
- evaluate and estimate the product.
- solve word problems based on multiplication.

## LESSON PLAN

**Suggested number of periods:** 14

**Suggested Teaching Aids:** Book: Math Genius! 3, blackboard or whiteboard, some real-life objects like sketch pens, pens, pencils, number arrow cards etc.

**Keywords:** Multiplicand, multiplier, product, multiplication fact, Lattice, estimation.

**Pre-requisite knowledge:** Students must be familiar with the multiplication of 2-digit numbers by 1-digit number without regrouping. Solve multiplication stories based on digits.

**NEP feature:** The way of teaching provides experiential learning opportunities to the students and allows them to work with the support of each other which helps in their holistic development.

| | | |
|---|---|---|
| **Periods: 1–2** | **Topic: Multiplication Facts, Multiplication tables** | **Suggested extra teaching aids: Some real-life objects, Chart of multiplication table up to 20. Chart of multiplication table up to 10 with missing product. Math Genius! 3 pages 67–70** |

### ENGAGE

Introduce the topic in the classroom with some interesting activities like placing some objects on the table and show that the repeated addition of any number is equal to the multiplication of that number by the number of times the addition is done.

Place a chart of multiplication table up to 10 with some missing numbers (products) on the board. And ask the students to recall the corresponding table of the given number and find the missing numbers (products).

## EXPLORE

The teacher will revise the learners' previous knowledge of multiplication with the help of the following game: "Find the same result in a row".

- Hang a chart of 10 × 10 on the display board where some multiplication facts or repeated addition using numbers up to 10 are written like:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 3 × 4 | 2 + 2 + 2 + 2 + 2 + 2 + 2 | 5 + 5 | 1 × 2 × 5 | 2 × 3 × 2 | 3 + 3 + 3 + 3 | 1 × 12 | 4 + 4 + 4 | 6 + 6 | 2 + 2 + 2 + 2 + 2 + 2 |

- Divide the class into groups and invite them one by one.
- Ask group to choose the number whose multiplication facts or repeated addition they want to find in the given chart. Then tell them to find the corresponding facts and mark the facts, within a limited time period.
- The group that marks most of the correct facts with minimum time will be the winner.

Teacher can also use the 'Get Ready' and 'Let's Recall' section given on pages 67 and 68.

**[Collaborative Learning]**

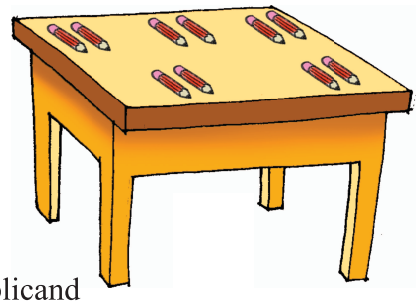
## EXPLAIN

Explain to the students that repeated addition can be also represented as multiplication.

Recall the multiplication table up to 10 by using the multiplication chart, as given on page 69.

Next, use the chart of multiplication tables from 11 to 20. And motivate the students to learn them by writing on their notebooks.

## ELABORATE



Explain that here, we have 5 groups of 2 pencils each, *i.e.*,

$2 + 2 + 2 + 2 + 2 = 10 = 5 \times 2 = 10$

$5 \times 2 = 10$ is read as '5 into 2 is 10' or '5 multiplied by 2 is 10' or '5 times 2 is 10'.

$5 \times 2 = 10$ is called the multiplication fact or multiplication statement.

Where 5 is the multiplicand, 2 is the multiplier and 10 is the product.

$$\begin{array}{rl} & 5 \leftarrow \text{Multiplicand} \\ \times & 2 \leftarrow \text{Multiplier} \\ \hline & 10 \leftarrow \text{Product} \end{array}$$

Use chart of multiplication tables from 11 to 20, and motivate the students to remember it.

**[Experiential learning]**

## EVALUATE

**Classwork:** Ask the students to solve Q.1 and 2 of Practice Time 4A. If the students make any error, teacher will correct it and explain.

**Homework:** Ask the students to prepare a colourful chart on tables from 11 to 25.

## ENHANCE

- Fill the grid under Quick Check section given on page 71.
- Download multiplication fact worksheet from "https://math-drills.com/multiplication.php" and solve it.

| Periods: 3–5 | Topic: Multiplication by a 1-digit number (without regrouping) and (with regrouping) | Suggested extra teaching aids: Math Genius! 3 pages 71–74 |
|---|---|---|

## ENGAGE

In the beginning, put the chart of tables in front of students so that they can memorise the tables. Then recall one-digit multiplication by using the multiplication table. As,

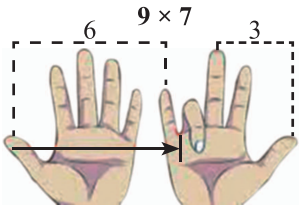
$5 \times 5 = 25$; $8 \times 7 = 56$; $9 \times 8 = 72$; $8 \times 8 = 64$ and so on.

In this topic first discuss multiplication without regrouping and then with grouping.

## EXPLORE

The teacher can introduce a quick method of multiplication of any number by 9 using fingers as follows:

For example, to multiply 9 by 7,




Down the seventh finger towards the palm. Count the left side fingers and make it tens digit of the product, and the remaining fingers on the right side of folded fingers as the ones digit of the product.

For example, $9 \times 7 = 63$.

## EXPLAIN

Explain to them multiplication is exactly like extended addition. Refer textbook pages 71–72 for the explanation of multiplication of 2-digit numbers by 1-digit numbers and that of 3-digit numbers by 1-digit numbers. Explain the process of multiplication without regrouping.

First, make the students, revise their knowledge of multiplication by writing the question on the board "multiply 31 by 3". Ask the steps from students and accept the response if any wrong response explain and correct.

- Multiply the ones by 3.

  1 one × 3 = 3 ones

- Multiply the tens by 3.

  3 tens × 3 = 9 tens

| | T | O |
|---|---|---|
| | 3 | 1 |
| × | | 3 |
| | 9 | 3 |

**Multiplication of 3-digit number by 1-digit number:**

Write on board: Multiply 342 by 2.

Arrange the numbers in their place value columns on the board.

- Multiply the ones by 2. 2 ones × 2 = 4 ones, and write 4 at the ones place of the product.
- Multiply the tens by 2. 4 tens × 2 = 8 tens, write the product at the tens place of the product.
- Multiply the hundreds by 2. 3 hundreds × 2 = 6 hundreds. Write the product at the hundreds place of the product.

| | H | T | O |
|---|---|---|---|
| | 3 | 4 | 2 |
| × | | | 2 |
| | 6 | 8 | 4 |

Encourage the students to practice the questions given in Practice Time 4B.

## ELABORATE

Consider any real life situation, where we need to multiply a 2- or 3-digit number by a 1-digit number with grouping. For instance, let Amit want to distribute chocolates among his classmates on his birthday. If there are 36 students in the class and a chocolate costs ₹5, how much money should he arrange. Elaborate the students that:

| | H | T | O |
|---|---|---|---|
| | | 3 | 6 |
| × | | | 5 |
| | | | |

The cost of 1 chocolate is ₹5.

So, the cost of 36 chocolates would be ₹(36 × 5).

Now demonstrate how to multiply it.

| | H | T | O |
|---|---|---|---|
| | | (3) | |
| | | 3 | 6 |
| × | | | 5 |
| | | | 0 |

- Multiply the ones by 5.

  6 ones × 5 = 30 ones = 3 tens 0 ones

  Write 0 in the ones column of the product and carry over 3 in the tens column.

- Multiply the tens by 5.

  3 tens × 5 = 15 tens

  15 tens + 3 tens = 18 tens = 1 hundred 8 tens

  Write 8 in the tens column of the product and carry over 1 in the hundreds column.

| | H | T | O |
|---|---|---|---|
| | (1) | (3) | |
| | | 3 | 6 |
| × | | | 5 |
| | 1 | 8 | 0 |

Clearly, Amit should arrange ₹180 for distributing the chocolates among all classmates.

Refer textbook pages 72–74 for explanation and examples. **[Conceptual Learning]**

## EVALUATE

**Classwork:** Ask the students to solve Q.1 of Practice Time 4C. If the students make any error while doing the multiplication, the teacher will correct it and explain.

**Homework:** Ask the students to solve Q.2 of Practice Time 4C.

## ENHANCE

Download worksheets on multiplication from the "www.fullmarksonline.com" and practice multiplication of 2- and 3-digit numbers by 1-digit numbers.

| Periods: 6–8 | Topic: Multiplication by a 2-digit Number, Lattice Multiplication | Suggested extra teaching aids: Math Genius! 3 pages 74–77 |
|---|---|---|

## ENGAGE

First make students comfortable, so they can ask any question from the previous topic if they have any doubts. Introduce multiplication of a 2-digit number by a 2-digit number.

## EXPLORE

We can also multiply the numbers by breaking up numbers: BLOCK METHOD. This is one of the most useful mental math strategies. It involves breaking up one of the factors, multiplying in groups, and then adding those groups together.

| × | 30 | 5 |
|---|---|---|
| 30 | 1200 | 200 |
| 4 | 120 | 20 |

For example: multiply 35 by 44.

Break up the number 35 into 30 and 5, 44 into 40 and 4 and then multiply it in parts.

So, $35 \times 40 = (30 \times 40) + (5 \times 40) + (30 \times 4) + (5 \times 4)$

$= 1200 + 200 + 120 + 20 = 1540.$ **[Conceptual Learning]**

## EXPLAIN

When we multiply a 2-digit number by another 2-digit number, we expand the multiplier. And multiply the multiplicand by the ones and tens digits of the multiplier. Find 2 partial products and add these partial products

we get to find the final answers. The same process we will follow to multiply a 3-digit number by a 2-digit number. Refer textbook pages 74–76 and solve some questions on the board.

Multiply 232 by 23.

- Expand the multiplier 23 as 20 + 3 = 2 tens + 3 ones and multiply 232 with it by using the following steps:

**Step 1:** Multiply 232 by 3 ones.
232 × 3 ones = 696

**Step 2:** Multiply 232 by 2 tens.
232 × 2 tens = 232 × 20 ones = 4640 ones
Write 4640 as the second line product.

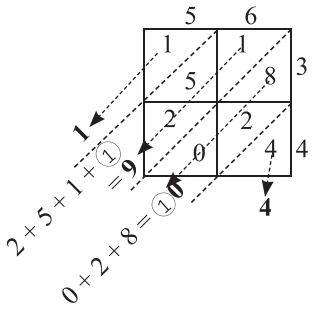
**Step 3:** Add the products.
696 + 4640 = 5336
Thus, 232 × 23 = 5336

| | Th | H | T | O | |
|---|---|---|---|---|---|
| | | 2 | 3 | 2 | |
| × | | | 2 | 3 | |
| | | 6 | 9 | 6 | ← 1st product |
| + | 4 | 6 | 4 | 0 | ← 2nd product |
| | 5 | 3 | 3 | 6 | ← Sum |

**[Conceptual Learning]**

## ELABORATE

Refer textbook pages 76–77 and demonstrate how to multiply two numbers using Lattice multiplication method.




Consider 56 × 34.

Since 56 and 34 are both 2-digit numbers.

Draw a 2 × 2 square grid and draw diagonal lines in each box.

Write the multiplicand on top and the multiplier on the right of the grid.

Multiply the corresponding numbers and write the tens place digit in the upper triangle of each box and the ones digit at the lower triangle of each box.

Add the numbers of boxes diagonally to find the product. While adding the numbers diagonally if the sum is of two digits, retain the ones and carry over the tens to the next diagonal and add with them.

Thus, 56 × 34 = 1904. **[Experiential Learning]**

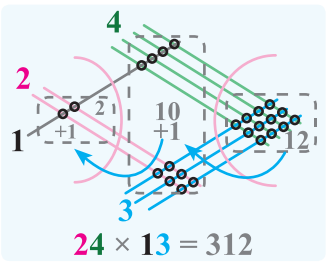
## EVALUATE

**Classwork:** Ask to solve problems Q.1 of Practice Time 4D. If the students make any error while solving the problems, the teacher will correct it and explain.

**Homework:** Ask the students to solve Q.2 and 3 of Practice Time 4D.

## ENHANCE

Present an interesting method to visualize multiplication that reduces it to simple counting!




- Draw sets of parallel lines representing each digit of the first number to be multiplied (the multiplicand)
- Draw another set of parallels, perpendicular to the first sets of parallels, corresponding to each digit of the second number (the multiplier).
- Put dots where each line crosses another line.
- Count the points in the right corner, middle and left corner.
- If the number on the right is greater than 9, carry and add the number in the tens place to the number in the middle. If the number in the middle is greater than 9, add the carry-over to the number at the hundred place. **[Experiential Learning]**

| Periods: 9–10 | Topic: Exploring multiplication and multiplying by 10, 20,….900, | Suggested extra teaching aids: Math Genius! 3 pages 77–78. |
|---|---|---|

## ENGAGE

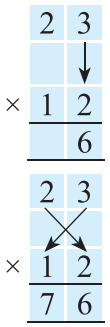
Begins with a discussion on the previously learned topic lattice multiplication. Introduce the method of multiplication by expanding the bigger number and multiplication of numbers when the multiplier contains zeros.

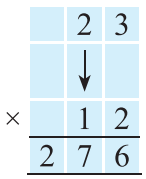
## EXPLORE

There is one more method of multiplication called the 'Criss-cross system of multiplication' of ''Vedic mathematics'' which helps in doing the calculation faster.

Let us multiply 23 by 12.

- Multiply the digits in the ones place, that is, $3 \times 2 = 6$.
  Write 6 in the ones place of the product.
- Next, cross multiply and add the products, that is, $(2 \times 2) + (3 \times 1) = 7$.
  Write the 7 in the tens place of the product.
- Next, multiply the tens digits, that is, $2 \times 1 = 2$.




Thus, $23 \times 12 = 276$.

The three steps involved in multiplying a 2-digit number by a 2-digit number are as follows:

**Step 1:**



**Step 2:**



**Step 3:**



## EXPLAIN

Explain to the students, that there is another method of multiplication where we expand the bigger number and then multiply each term of the expanded form with the multiplier and add the product thus obtained.

Next, explain how to multiply any number with 10, 20, 30, …, 90.

First, multiply the number without 0. Then, write '0' to the right of the product obtained.

Similarly, to multiply a number by 100, 200, 300, 400, ..., 900, first multiply the number without 00.

Then, write two zeros (00) to the right of the product obtained.

Refer textbook pages 77–78 for examples and more explanation.

## ELABORATE

Solve some questions on the board for demonstrating the process.

**Multiplying by Expanding the Bigger Number:**

Multiply 134 by 3.

Expand the bigger number 134: $134 = 100 + 30 + 4$

Multiply each term of expanded form by 3: $100 \times 3 + 30 \times 3 + 4 \times 3$

Add the product obtained: 300 + 90 + 12 = 402.

Thus, 134 × 3 = 402.

Next, demonstrate multiplication of numbers by 10, 20, 30, ..., 90, and 100, 200, 300, ..., 900.

- To multiply a number by 10, write a '0' to the right of the number.

  For example, 2 × 10 = 20
- To multiply a number by 20, 30, 40, ..., 90, first multiply the number without 0. Then, write a '0' to the right of the product obtained.

  For example, 15 × 40 = 600
- To multiply a number by 100, write two zeros (00) to the right of the number.

  For example, 5 × 100 = 500
- To multiply a number by 200, 300, 400, ..., 900, first multiply the number without 00. Then, write two zeros (00) to the right of the product obtained.

  For example, 12 × 400 = 4800

Motivate students to complete Think and Answer given on page 78.

## EVALUATE

**Classwork:** Ask students to solve Q.1 and 2 (*a*), (*b*), (*c*) of Practice Time 4E.

**Homework:** Ask the students to solve remaining questions of Practice Time 4E.

## ENHANCE

Ask students to download the worksheet from "www.fullmarksonline.com" and practice them.

| Periods: 11-12 | Topic: Properties of multiplication, estimating the product, word problems | Suggested extra teaching aids: Some real-life objects<br>Math Genius! 3 pages 79–80 |
|---|---|---|

## ENGAGE

Begins with a discussion on the previously learned topics. Introduce properties of multiplication, estimating product and take a real-life situation based on multiplication sentence having multiplication by 1- or 2-digit number like: If teacher brought 48 dozen pencils for her class, how many pencils did she bring in total?

Discuss how to solve the word problems.

## EXPLORE

Divide the class into groups. Distribute a paper to each student and tell them to solve this problem: "There are 58 bags of cookies in a sale. Each bag has 12 cookies. How many cookies are there in total?"

- Tell students to discuss the solution within their group.
- Point out to students how their explanation became clearer and more specific as they had more practice with using the method for multiplication.
- Appreciate the group who solved the sum accurately in minimum time.

## EXPLAIN

Write on the board that numbers can be multiplied in any order and their product will remain the same. Use any real-life object to demonstrate this property.

Like, 4 notebooks in 3 groups = 3 notebooks in 4 groups.

Similarly, explain what is the effect on product, if we multiply any number with 0 and 1.

- When a number is multiplied by 1, the product is the number itself.

  **Examples:** (*a*) $7 \times 1 = 7$ (*b*) $53 \times 1 = 53$ (*c*) $124 \times 1 = 124$

- When a number is multiplied by '0', the product is always '0'.

  **Examples:** (*a*) $5 \times 0 = 0$ (*b*) $17 \times 0 = 0$ (*c*) $142 \times 0 = 0$

Next, explain the estimation of the product and to solve real-life situations based on multiplication sentences like simple multiplication. Refer textbook pages 79–80 for explanation and examples.

## ELABORATE

Consider any real-life situation where we need estimating product. For example, chairs are being arranged for an school event. If there are 72 chairs in each of the 27 rows, about how many people can take a seat? For this, let us estimate the product $72 \times 27$.

Demonstrate estimating the product of 72 and 27 on board as follows:

- 72 rounded down to the nearest 10 is 70
- 27 rounded up to the nearest 10 is 30

  Thus, the estimated product = 2100

  That is, about 2100 people can take a seat.

| | Th | H | T | O |
|---|---|---|---|---|
| | | | 7 | 0 |
| × | | | 3 | 0 |
| | | | 0 | 0 |
| + | 2 | 1 | 0 | 0 |
| | 2 | 1 | 0 | 0 |

Also, discuss some real-life situations where we need to find the actual product. For example, "A bus can carry 52 passengers. How many passengers can be carried by 36 buses?"

Since, the number of passengers a bus can carry = 52

And, the number of buses = 36

So, the number of passengers carried by 36 buses = $52 \times 36 = 1872$

| | Th | H | T | O |
|---|---|---|---|---|
| | | | 5 | 2 |
| × | | | 3 | 6 |
| | | 3 | 1 | 2 |
| + | 1 | 5 | 6 | 0 |
| | 1 | 8 | 7 | 2 |

## EVALUATE

**Classwork:** Ask students to solve Q.1, Q.3 (*a*), (*b*) of Practice Time 4F and Q.1 of Practice Time 4G. If the students make any error, the teacher will correct it and explain.

**Homework:** Do the remaining questions of the Practice Time 4F and 4G.

## ENHANCE

Ask students to download the worksheet from the "www.fullmarksonline.com" and practice them.

| Periods: 13–14 | Topic: (Revision) Chapter Assessment | Suggested extra teaching aids: Math Genius! 3 pages 81–83 |
|---|---|---|

## ENGAGE

Make students comfortable, so they can ask any question on any previously taught topics in which they are facing problems.

## EXPLAIN

Start the revision of the exercise by using Encapsulate, Mental Math, Chapter Assessment and Brain Sizzlers. Also guide them to perform the activity in the classroom.

## ELABORATE

Discuss questions 1 to 4 in the chapter assessment and accept students answer, if any confusion or error then explain and correct it. Discuss brain sizzlers and motivate students to solve mental math. At last guide to the students to do the activity given on page 83.

## EVALUATE

**Classwork:** Discuss questions 1 to 4 of the chapter assessment in the classroom. Do the activity given on page 83.

**Homework:** Q.5 of page no.82.

## ENHANCE

Ask students to find two processes of multiplication other than those discussed in the book, with the use of the internet with the help of friends, teachers and parents.

ORANGE

# ASSIGNMENT–7

Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

**Identify the correct answer.**

1. What is the place value of hundreds place digit in the product of 409 × 20 is
   (*a*) 100 (*b*) 0
   (*c*) 10 (*d*) 80
2. On the Christmas festival a shopkeeper sold 13 packets of balloons. If a packet contains 100 balloons and he sold each balloon of ₹4. How much money did the shopkeeper earn?
   (*a*) ₹2500 (*b*) ₹5200
   (*c*) ₹400 (*d*) ₹1300
3. 215 × 45 = 9000 + ..... + 70 + 5
   (*a*) 700 (*b*) 400
   (*c*) 0 (*d*) 600
4. The sum of the digits of the product of 123 × 45 is
   (*a*) 15 (*b*) 16
   (*c*) 18 (*d*) 20
5. A express train has 18 bogies which is going to Mumbai and each bogie carrying 374 passengers, all passengers took off for Mumbai on Sunday. How many people went to Mumbai on that day?
   (*a*) 7632 (*b*) 6732
   (*c*) 3672 (*d*) 7563
6. A number whose thousands digit is twice the hundreds digit which is 3 more than the ones digit and the ones digit is the same as tens which is 1, is multiplied by 1. What is the product?
   (*a*) 8411 (*b*) 7411
   (*c*) 7401 (*d*) 8011
7. Rehana had 10 coins of ₹2, 3 coins of ₹5 and 7 coins of ₹1. How much money she had in total?
   (*a*) ₹27 (*b*) ₹72
   (*c*) ₹24 (*d*) ₹42
8. Iqra is celebrating her granny's 72th birthday. What is the age of her granny in months?
   (*a*) 684 (*b*) 864
   (*c*) 680 (*d*) 804
9. If 85 × *2 = 1870, then what is the possible digit that will replace *?
   (*a*) 1 (*b*) 2
   (*c*) 0 (*d*) 3
10. 72 is multiplied with a number, which gives 7200 as the product. The number is _____
    (*a*) 00 (*b*) 100
    (*c*) 200 (*d*) 300

ORANGE

# ASSIGNMENT–8

Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

## A. Fill in the blanks.

1. To multiply by multiples of 10, we put as many ..... at the end of the product as there are in the multiplier.
2. 4 tens 8 ones × ..... = 4 hundreds 3 tens 2 ones
3. 108 × 62 = 6000 + ..... + 90 + 6
4. To multiply a number by 10, write a '0' to the ..... of the number.
5. The face value of a digit at hundreds place in the product of 100 × 10 is ..... .

## B. Label True or False.

1. 78 × 2 tens = 780 .....
2. The place value of ones digit in 100 × 19 is 9. .....
3. 1000 + 500 + 40 + 1 = 67 × 23 .....
4. The product of face value and its place value of digit 7 in the number 4708 is 49. .....
5. The estimated product of 55 × 29 is 1800. .....

## C. Match the following.

| Column I | Column II |
|---|---|
| 1. The product of ones and tens digits in the product of 57 × 100, is | (*a*) 3 |
| 2. 458 × ..... = 4580 | (*b*) 9440 |
| 3. (2 hundreds + 3 tens + 6 ones) × 4 tens | (*c*) 10 |
| 4. 1500 × 13 = (1000 + .....) × 13 | (*d*) 0 |
| 5. Number of zeros in the product of 30 tens and 2 tens | (*e*) 500 |

## D. Utilise Your Brain.

The height of a mature oak tree is about 1m more than 2 times of bamboo tree's height. But, a forest man says "The redwood tree is taller than 5 mature oak trees. " Is he correct, if the height of a bamboo tree is 10 m and the height of redwood tree is same as 10 bamboo trees.




# Division

## Learning Objectives

**After studying this chapter, students will be able to...**

- explore division as equal distribution and repeated subtraction.
- understand the properties of division.
- know long division and its checking.
- learn division of 2 and 3-digit numbers by 1-digit number (without and with regrouping).
- divide a number by 10 and 100.
- solve word problems based on division.
- identify the mathematical operations to be used in real-life situations.

# LESSON PLAN

**Suggested number of periods:** 12

**Suggested Teaching Aids:** Book: Math Genius! 3, blackboard or whiteboard, some real-life objects like candies, sketch pens, pens, pencils, etc.

**Keywords:** Dividend, divisor, remainder, multiplication facts, division facts, etc.

**Pre-requisite knowledge:** Students must be familiar with the division of 2-digit numbers by 1-digit numbers without regrouping. Solve division stories based on single-digit numbers.

**NEP feature:** The way of teaching provides experiential learning opportunities to the students and allows them to work with the support of each other which helps in their holistic development.

| Periods: 1–3 | Topic: Division as equal distribution; Division as repeated subtraction, Relationship between division and multiplication, Properties of division and Long division. | Suggested extra teaching aids: Math Genius! 3, pages 84–91 |
|---|---|---|

## ENGAGE

Introduce the topic in the classroom with some interesting activities like placing some objects on the table and asking students to distribute them in equal groups.

Discuss the concept given in "Get Ready" and "Let's Recall" sections on pages 84 and 85.

## EXPLORE

Bring a packet of 40 pencils to the classroom and invite the students in different numbers say 2, 4, 5, and 8. Instruct the students to distribute the pencils equally among themselves. Ask how many pencils each student gets.

Accept the responses. Write it as a division sentence using the division sign.

**[Experiential and Collaborative Learning]**

After understanding the division as equal distribution, deal the concept of repeated subtraction by involving a group of students.

## EXPLAIN

- Start with the topic 'division as equal distribution' by taking the reference of real-life situation and examples given on page 86 of the book.
- Then discuss the topic 'division as repeated subtraction on board' by using the example given on page 87. Motivate the students to solve the questions given under 'Think and Answer' and 'Quick Check' before doing Practice Time 5A.
- Explain the topic 'establish the relation between division and multiplication' by using the example given on page 88.
- And demonstrate that there are two division facts corresponding to each multiplication fact. Like:

| **Multiplication fact** | **Division facts** |
|---|---|
| $2 \times 6 = 12$ | $12 \div 2 = 6$ and $12 \div 6 = 2$ |

- Demonstrate on board, how the multiplication table helps us in division by using the example of division 'divide 28 by 4'.
- Next, discuss the topic 'properties of division' by demonstrating on board that:
  - ➢ When a number is divided by 1, the quotient is the number itself.
    **Examples:** (*a*) $5 \div 1 = 5$ (*b*) $10 \div 1 = 10$
  - ➢ Division of a number by itself: When a number is divided by itself, the quotient is 1.
    **Examples:** (*a*) $12 \div 12 = 1$ (*b*) $26 \div 26 = 1$
  - ➢ Division of zero by any number: When 0 is divided by any number (except 0) gives the quotient 0.
    **Example:** $0 \div 14 = 0$

## ELABORATE

Start long division, first by revising the division of 1-digit numbers, then checking the division by the relationship "Quotient × Divisor + Remainder = Dividend".

- Demonstrate on board that in division sometimes we get remainder 0 and sometimes we get the remainder by taking reference of book. For hands-on learning, call two groups – A with 5 students and B with 6 students. Give 20 pencils to each group and tell them to share it equally. Elaborate what they observe.

**LONG DIVISION**

**Without Remainder**

Quotient
Divisor ) Dividend

**Example:**

$5 \overline{)\,20\,(\,4}$ ← Pencils each student gets
$-20$
$0$ ← Pencils left over

**With Remainder**

Quotient
Divisor ) Dividend
Remainder

**Example:**

$6 \overline{)\,20\,(\,3}$ ← Pencils each student gets
$-18$
$2$ ← Pencils left over

Also, discuss the subtopic 'checking division', the relation between the dividend, divisor, quotient and remainder. As,

**Quotient × Divisor + Remainder = Dividend**

Verify the relationship on the board as:

$4 \times 5 + 0 = 20$ ←
$3 \times 6 + 2 = 20$ ← Dividend

**[Conceptual Learning]**

## EVALUATE

**Classwork:** Ask to solve questions 1, 2 and 3 of Practice Time 5A and 5B. If students make any error, the teacher will correct it and explain.

**Homework:** Ask to solve the remaining questions of Practice Time 5A and 5B.

## ENHANCE

Ask students to list 4–5 situations from daily life where they use concept of divisions.

| Periods: 4–7 | Topic: Division by 1-digit number(without regrouping), Division by 1-digit number (with regrouping), Division by 10 and 100. | Suggested extra teaching aids: Math Genius! 3, pages 92–96 |
|---|---|---|

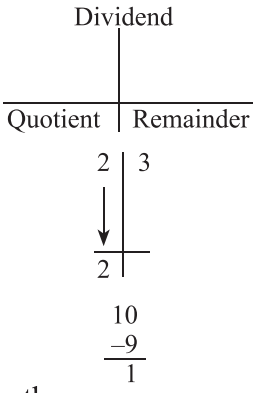
## ENGAGE

Revise the concept of division using the example of pencils distribution activity in previous period.

## EXPLORE

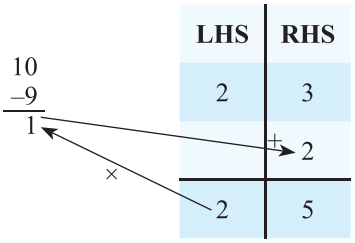
Demonstrate that division can be also done using the Vedic method. (Nikhilam Sutra)

In this method divide the dividend into two parts LHS and RHS. The RHS will contain as many digits as the number of zeros in the base.




**For example, divide 23 by 9.**

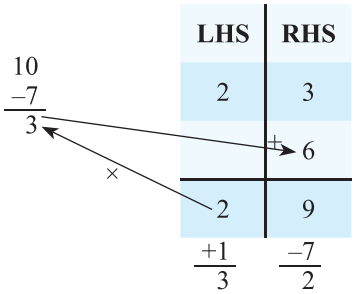
- Since 23 is a 2-digit number, so it is of base 10. And base 10 has one zero in it.
- Divide the dividend in such a way that the RHS has one digit.
- Bring down the first digit of the dividend, 2 as shown in the diagram:
- Here, the divisor is 9, the base is 10, find the difference of base and the divisor, the difference is 1.
- Multiply 2 with the difference 1 and add the answer to the next digit of the dividend as shown.
- The product of 2 and 1 (the difference) is 2, write it below 3. The sum of 3 and 2 is 5.




Thus, when 23 is divided by 9 the quotient is 2 and the remainder is 5.

The final answer obtained on the LHS is the quotient and on RHS is the remainder. **[Vedic maths Learning]**

Note: In case of the number on RHS is greater than divisor, subtract the divisor from that number and increase the quotient by 1. Consider 23 ÷ 7.




Thus, Q = 3, R = 2

## EXPLAIN

Demonstrate on board 'division by 1-digit number, without and with regrouping' and division by 10 and 100.

## ELABORATE

- Revise the division of 2-digit number by 1-digit number by starting the topic "division by 1-digit number (without regrouping)". Use the methods and examples given on page 92 and demonstrate the division on board.
  - ➢ Next, explain division of a 3-digit by 1-digit by using the examples given on page 93.
- Introduce division of 2-digit and 3-digit numbers with regrouping. Use the examples and detailed explanations given on page 94 and 95.
- Division by 10 and 100: Demonstrate on board that,
  - ➢ when we divide a number by 10, the digit at the ones place of the number is the remainder and the number formed by the remaining digits is the quotient. For example, 87 ÷ 10,

    Then, quotient = 8, remainder = 7.
  - ➢ when a number is divided by 100, the number formed with the tens and ones digits of the number is the remainder and the number formed by the remaining digits is the quotient.

    For example, 458 ÷ 100,

    Then, quotient = 4, remainder = 58.

  Use the examples given on page 96 of the book.

## EVALUATE

**Classwork:** Ask to solve questions 1, 2, 3 and 4 of Practice Time 5C and 5D. If students make any error, teacher will correct it and explain.

**Homework:** Ask to solve the remaining questions of Practice Time 5C to 5D and 5E.

## ENHANCE

- Discuss 'think and answer' given on Pages 93, 95 and 96.
- Ask to watch the video on division with regrouping on "www.fullmarksonline.com". **[Tech Connect]**

| Periods: 8–10 | Topic: Word problems, Identifying the mathematical operations. | Suggested extra teaching aids: Math Genius! 3, pages 97–99 |
|---|---|---|

## ENGAGE

Revise the important points of previously learned topics by asking a few questions in the classroom. Write any number on the board and tell the students to write any fact for that number. For example, consider number 24.

$6 \times 4 = 24$; $20 + 4 = 24$; $4 + 4 + 4 + 4 + 4 + 4 = 24$; $60 - 36 = 24$; $48 \div 2 = 24$

24 is an even number. It has 2 tens and 4 ones.

Accept the answers. Rectify if anyone have any confusion.

## EXPLORE

Divide the class into groups of 5.

Distribute 10 cut-outs (2 for each part) of stars to each group, such that there is a question on one piece of cut-out and its answer on another piece.

Ask the groups, to match the questions with answers to complete the star. **[Experiential Learning]**



## EXPLAIN

Discuss in the classroom the real-life situations, where we use the division. Lastly, in the topic 'Identifying the mathematical operations', demonstrates the process of identifying the mathematical operations involves deciding which mathematical operation (addition, subtraction, multiplication, or division) will be useful in solving a word problem. Refer textbook pages 97–98 for explanation and examples.

## ELABORATE

Consider any problem from exercise or take another one, such as: After winning the final match, a Kabaddi Team was rewarded with a prize money of ₹945. How much money would each of the 7 players get?

Total prize money = ₹945

Number of players in the team = 7

So, prize money got by each player = ₹945 ÷ 7 = ₹135 **[Conceptual Learning]**

```
7) 945 (135
  -7
   24
  -21
    35
  - 35
     0
```

## EVALUATE

**Classwork:** Ask to solve some questions of Practice Time 5F and 5G. If students make any error, the teacher will correct it and explain.

**Homework:** Ask to solve the remaining questions of Practice Time 5F.

## ENHANCE

Ask to solve Mental Maths given on page 99.

| Periods: 11–12 | Topic: Revision (Chapter assessment) | Suggested extra teaching aids: Math Genius! 3 pages 100–102 |
|---|---|---|

## ENGAGE

Make students comfortable, so they can ask any question on any previously taught topics in which they are facing problems.

## EXPLORE

Conduct the activity as suggested in Learning by Doing section on page 102.

## EXPLAIN

Start the revision of the exercise by using Encapsulate, Brain Sizzlers, Chapter Assessment and Maths Fun.

## ELABORATE

Discuss questions 1 to 2 in the Chapter Assessment and accept students answer, if any confusion or error then explain and correct it. Discuss brain sizzlers and motivate students to solve Maths Fun.

## EVALUATE

**Classwork:** Discuss questions 1 and 2 of the Chapter Assessment in the classroom.

**Homework:** Ask to solve Q.3 and 4 of Chapter Assessment and Maths Fun given on page 102.

## ENHANCE

Ask students to find two processes of division other than those discussed in the book, with the use of the internet with the help of friends, teachers and parents.

ORANGE

# ASSIGNMENT–9



Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

**Identify the correct answer.**

**1.** If $7 \times 8 = 56$, then $56 \div 7 =$ _____

(*a*) 1 (*b*) 0

(*c*) 8 (*d*) 7

**2.** Pick odd one out.

(*a*) 8 distributed between 2 is same as $8 \div 2$.

(*b*) 21 distributed among 3 is same as $21 \div 7$.

(*c*) 12 distributed among 2 is same as $12 \div 2$.

(*d*) 16 distributed among 2 is same as $16 \div 2$.

**3.** There are 8 groups of 4 items each. Which is the correct way to write this statement mathematically?

(*a*) $8 \times 4 = 32$ (*b*) $8 \div 4 = 32$

(*c*) $32 \div 8 = 4$ (*d*) $32 \div 4 = 8$

**4.** How many 8's are there in 424?

(*a*) 34 (*b*) 53

(*c*) 35 (*d*) 43

**5.** What is the dividend if Quotient = 320, Divisor = 3 and Remainder = 2?

(*a*) 972 (*b*) 792

(*c*) 692 (*d*) 962

**6.** What is the product of digits of the quotient obtained when 40 tens are divided by 8 ones?

(*a*) 4 (*b*) 5

(*c*) 8 (*d*) 6

**7.** What remainder will you get when a 3-digit even number is divided by 2?

(*a*) 1 (*b*) 2

(*c*) 0 (*d*) None of these.

**8.** Which pair is same?

(*a*) $8 \div 2, 24 \div 3$ (*b*) $12 \div 3, 18 \div 6$

(*c*) $21 \div 7, 15 \div 5$ (*d*) $14 \div 2, 16 \div 4$

**9.** How many 0's are there in the quotient when 1000 is divided by smallest 2-digit number?

(*a*) 1 (*b*) 2

(*c*) 0 (*d*) 3

**10.** How many ₹10 coins are there in ₹500 note?

(*a*) 5 (*b*) 10

(*c*) 50 (*d*) 500

ORANGE

# ASSIGNMENT–10

Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

## A. Fill in the blanks.

1. 1649 = ..... × 5 + 4
2. ..... ÷ 71 = 0
3. 576 crayons are packed in the packets of 10 each, then ..... packets are made and ..... crayons are left?
4. There ..... weeks in 105 days.
5. ..... is divided by 4 and reduced by 7 = 14.

## B. Label True or False.

1. Remainder is always greater than the dividend. .....
2. There are always two multiplication facts for a division fact. .....
3. Any number divided by 1 will give the result number itself. .....
4. 3 is the remainder of division 4563 by 100. .....
5. Quotient × Dividend + Remainder = Divisor .....

## C. Match the following.

| Column I | Column II |
|---|---|
| 1. 3813 ÷ 10 gives Q = ..... and R = 3 | (*a*) 500 |
| 2. (90 tens + 9 tens + 9 ones) ÷ 9 | (*b*) 4 |
| 3. 72 ÷ 3 = 6 × ..... | (*c*) 211 |
| 4. 633 ÷ 3 | (*d*) 381 |
| 5. Smallest 4-digit number ÷ smallest even number | (*e*) 111 |

## D. Utilise Your Brain.

What will be the sum of digits of quotient obtained when 4578 is rounded up to the nearest 10 and divided by the difference between smallest 3-digit number and greatest 2-digit number?




# Fractions

## Learning Objectives

**After studying this chapter, students will be able to...**

- understand the concept of fractions.
- know how to represent part of a whole or a collection.
- find fractions of a whole or a collection.
- identify the numerator and denominator in a given fraction.
- explore the use of fractions in real-life situations.

## LESSON PLAN

**Suggested number of periods:** 8

**Suggested Teaching Aids:** Book: Math Genius! 3, blackboard or whiteboard, some real-life objects like candies, fruits, cut-outs of different plane shapes showing fractions, sketch pens, pens, pencils, etc.

**Keywords:** Fraction, halves, one-third, one-fourth, numerator, denominator, etc.

**Pre-requisite knowledge:** Students must be familiar with fractions, part of a whole or a collection.

**NEP feature:** The way of teaching provides experiential learning opportunities to the students and allows them to work with the support of each other which helps in their holistic development.

| Periods: 1–3 | Topic: Understanding fractions, Fractions of a region, Writing fractions | Suggested extra teaching aids: Some real-life objects, like pencils, toffees, fruits etc. Math Genius! 3, Pages 103–108 |
|---|---|---|

### ENGAGE

Introduce the topic in the classroom with some interesting activities like, distribute some coloured square, rectangle and circle shaped papers in the class and ask: "How will you divide the shapes into two, three and four equal parts?" If, yes, divide them. Accept the responses.

Introduce: Division of a whole into two halves, three one-thirds and four one-fourths.

Teacher can discuss the concept given on "Get Ready" and "Let's Recall" given on pages 103 and 104.

### EXPLORE

Divide the class into pairs. Distribute squared paper sheets to them. Ask to fold the square paper into equal halves, press the crease and then unfold the sheet.

Ask: How many equal divisions are made in sheet? Accept the responses.

Now, again instruct to fold the square sheet into three equal parts. And unfold the sheet. Ask: How many equal divisions are made in the sheet in both cases? Accept the responses. **[Experiential Learning]**

## EXPLAIN

A fraction is a part of a whole when divided into equal parts. A whole can be a region or a collection. The parts of a whole of the same size are called equal parts. Explain halves, one-third, one-fourth. Show on board how to write fractions using two numbers, *i.e.*, numerator and denominator. Explain what are numerator and denominator. Refer textbook pages 104–107 for explanation and examples.

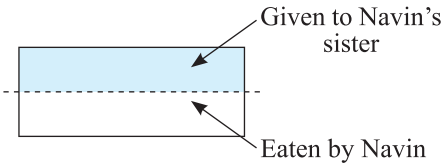
## ELABORATE

Interact with the students and encourage them to share their daily life experience when they want to distribute something among friends and family members. For example,

- Navin shares his chocolate bar with her sister equally.
- Neha cuts 4 pieces of a cake and eats with her 3 friends.

Taking their responses, describe the concept of fractions on the board.

Considering the Navin's case, we have two pieces of the chocolate. Navin gives 1 out of 2 to his sister. So, she gets $\frac{1}{2}$ (one-half) and Navin himself eats the other half of the chocolate.

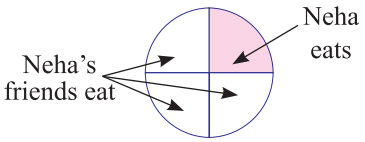



Further, demonstrate on board that fractions are the representation as follows:

$$\text{Fraction} = \frac{\text{Number of parts being talked about}}{\text{Total number of equal parts}}$$

In the above situation, Fraction = $\frac{1}{2}$ ← Numerator ← Denominator

Similarly, elaborate the Neha's case as:




Clearly, Neha eats one-quarter $\left(\frac{1}{4}\right)$ and her friends eat three-quarters $\left(\frac{3}{4}\right)$.

- Discuss the 'Think and Answer' section given on page 107. **[Logical and Critical Thinking]**

## EVALUATE

**Classwork:** Ask to solve questions 1, 2 and 4 of practice time 6A. If any student make any error, the teacher will correct it and explain.

**Homework:** Ask to solve the remaining questions of practice time 6A.

## ENHANCE

- Discuss Knowledge Desk given on page 106 and Maths Fun given on page 107. **[Cross Curricular]**
- Ask to watch the video on "www.fullmarksonline.com". **[Tech connect]**

| Periods: 4–5 | Topic: Fraction of a collection, finding fractions of a collection using division | Suggested extra teaching aids: Math Genius! 3, pages 109–112, some real-life objects like balls, pencils, etc. |
|---|---|---|

## ENGAGE

Write on board a few fractions in the form of numerator and denominator. And ask to identify the numerator and denominator of the fractions. Accept the responses. Engage the students in an activity as suggested on page 108.

## EXPLORE

Divide the class into pairs. Choose a pair of students randomly. Give a rectangular piece of card sheet having equal divisions to both the students of the pair. Instruct them to shade the parts as much as they want, and write them in fractions also identify the numerator and denominator of each fraction. Rectify if any student made any error.

## EXPLAIN

Discuss that a collection can also be taken as a whole and fractions are equal parts of a collection. For instance, instruct the students sitting in the 1st row or the students of roll numbers 1–10 stand up. Explain what fractions of these students are boys and girls. Suppose there are 6 students in the 1st row and 2 are boys. Then, $\frac{2}{6}$ of the group are boys and $\frac{4}{6}$ of the groups are girls.

Motivate them to solve the questions given under Quick Check on page 109.

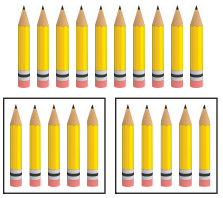
We can find fraction of a collection using division.

The teacher can take the example and explanation given on pages 109–110.

## ELABORATE

Write on board half $\left(\frac{1}{2}\right)$ of a collection.

Take some real-life objects, like 10 pencils. Distribute it in two equal parts. Ask students to observe that each group has 5 pencils. And each part represents half $\left(\frac{1}{2}\right)$ of the collection.



So, $\frac{1}{2}$ of 10 = 5 or 10 ÷ 2 = 5, i.e., half of 10 pencils is 5.

Similarly, demonstrate one-third $\left(\frac{1}{3}\right)$, one-fourth $\left(\frac{1}{4}\right)$ of a collection by using division.

**[Experiential Learning]**

## EVALUATE

**Classwork:** Ask to solve questions 1, 2, 3 and 4 of Practice Time 6B. If students make any error, teacher will correct it and explain.

**Homework:** Ask to solve the remaining questions of Practice Time 6B.

## ENHANCE

- Discuss 'Life Skills' and 'Think and Answer' given on pages 109 and 110 respectively.
- Watch the video on fractions on "www.fullmarksonline.com". **[Tech connect]**

| Periods: 6–7 | Topic: Word Problems | Suggested extra teaching aids: Math Genius! 3, pages 112–113 |
|---|---|---|

## ENGAGE

Revise the important points of previously learned topics by asking a few questions in the classroom. Accept the answers. Rectify if anyone has any confusion.

## EXPLORE

Write on board:

Total number of students: Number of students present:

Number of girls present: Number of boys present:

Call three students of the class and ask one of them to count the total number of students present. And others to count the number of boys and girls present in the classroom and write the numbers alongside the respective headings. Next, ask the class one by one to represent them in fractions. **[Experiential Learning]**

## EXPLAIN

Discuss the real-life situations, where we use fractions by using the examples and methods to solve it as given on page 112.

## ELABORATE

Write on board "Madhuri made a garland using 16 roses. 5 of them are red. What is the fraction representing?"

(*a*) red roses out of the total roses?

(*b*) not red roses out of the total roses?



(*a*) Given, total number of roses used = 16

And, number of red roses = 5

So, the fraction representing red roses = $\frac{5}{16}$

(*b*) Number of roses, which are not red = 16 – 5 = 11

So, fraction representing not red roses = $\frac{11}{16}$

Also discuss other examples given on Page no. 112 and 113 on board. **[Conceptual Learning]**

## EVALUATE

**Classwork:** Ask to solve questions 1 and 2 of Practice Time 6C. If any student makes any error, the teacher will correct and explain.

**Homework:** Ask to solve the remaining questions of Practice Time 6C.

## ENHANCE

- Discuss the 'Think and Answer' given on page 113. **[Logical Thinking]**
- Ask to watch the video on fractions on "www.fullmarksonline.com". **[Tech Connect]**

| Period: 8 | Topic: (Revision) Chapter Assessment | Suggested extra teaching aids:<br>Chart using encapsulate<br>Math Genius! 3 page 114 |
|---|---|---|

## ENGAGE

Make students comfortable, so they can ask any question on any previously taught topics in which they have doubts.

## EXPLAIN

Start the revision of the exercise by using Encapsulate, Mental Maths, Chapter Assessment and Brain Sizzlers.

## ELABORATE

Discuss questions 1 to 3 of the Chapter Assessment and accept students answer, if any confusion or error then explain and correct it. Discuss and motivate students to solve mental math.

At last guide them to perform the activity given in learning by doing on page 116. **[Art integration]**

## EVALUATE

**Classwork:** Ask to solve Q.1 to 3 of the Chapter Assessment and Brain Sizzlers given on page 116.

**Homework:** Ask to solve Q.3 to 8 of Chapter Assessment.

## ENHANCE

Ask students to prepare colourful charts on fractions, with the help of friends, teachers and parents.

ORANGE

# ASSIGNMENT–11

Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

**Identify the correct answer.**

**1.** An apple is cut into 4 equal parts. Each equal part of the apple is _____

(*a*) One-fourth (*b*) One-third (*c*) One-fifth (*d*) Half

**2.** Which of the following is the incorrect representation of shaded part to the whole?

(*a*)  $= \frac{1}{4}$ (*b*)  $= \frac{2}{4}$ (*c*)  $= \frac{5}{8}$ (*d*)  $= \frac{4}{8}$

**3.** What is the fraction of each colour in the rainbow?

(*a*) $\frac{1}{4}$ (*b*) $\frac{1}{7}$ (*c*) $\frac{7}{1}$ (*d*) $\frac{2}{7}$

**4.** Find the missing number: $\frac{3}{5}$ of $\square = 5$.

(*a*) 12 (*b*) 9 (*c*) 15 (*d*) 18

**5.** In fractions $\frac{3}{8}$, a whole is divided into ..... .

(*a*) 3 equal parts (*b*) 5 equal parts (*c*) 11 equal parts (*d*) 8 equal parts

**6.** In the word "MATHEMATICS", what fraction of letters are consonants?

(*a*) $\frac{4}{11}$ (*b*) $\frac{7}{11}$ (*c*) $\frac{3}{11}$ (*d*) $\frac{5}{11}$

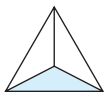
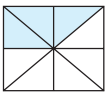
**7.** Six parts out of fifteen is ..... .

(*a*) $\frac{15}{6}$ (*b*) $\frac{6}{15}$ (*c*) $\frac{6}{21}$ (*d*) $\frac{6}{9}$

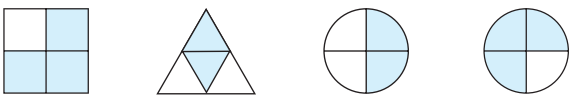
**8.** What is the fractional part of digit 5 in the series 1, 2, 3, 4, 5, 5, 4, 5, 2, 3, 4, 5, 5, 4, 3, 5, 5?

(*a*) $\frac{7}{17}$ (*b*) $\frac{5}{17}$ (*c*) $\frac{6}{17}$ (*d*) $\frac{17}{7}$

**9.** Which of the following figures is CORRECTLY match with its shaded fraction?

(*a*)  $= \frac{1}{3}$ (*b*)  $= \frac{1}{2}$ (*c*)  $= \frac{1}{2}$ (*d*)  $= \frac{2}{6}$

**10.** Which two figures have equal shaded fraction?



1 2 3 4

(*a*) 1 and 4; 2 and 3 (*b*) 1 and 2; 3 and 4 (*c*) 2 and 4; 1 and 3 (*d*) None of these

ORANGE

# ASSIGNMENT–12

Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

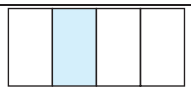
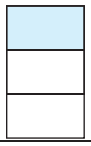
## A. Fill in the blanks.

1. In $\frac{4}{5}$, numerator = ..... and denominator = 5.
2. $\frac{5}{6}$ represents ..... parts of a whole which is divided in 6 equal parts.
3. $\frac{1}{4}$ of a dozen bananas = ..... bananas.
4. ..... part of the Earth's surface is covered with water.
5. $\frac{2}{3}$ of a circle is shaded, then ..... fraction of the circle is not shaded.

## B. Label True or False.

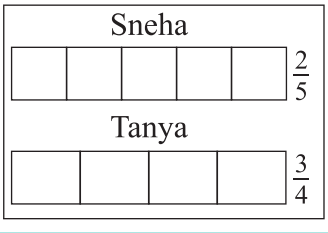
1. Two halves make a whole. .....
2. $\frac{1}{3}$ of 18 candies = 9 candies. .....
3. Numerator in the fraction three-fourths is 4. .....
4. Fraction = Numerator × Denominator. .....
5. There are 12 hours in $\frac{1}{2}$ of a day. .....

## C. Match the following.

| Column I | Column II |
|---|---|
| 1. $\frac{1}{2}$ | (a)  |
| 2. $\frac{1}{3}$ | (b)  |
| 3. $\frac{1}{4}$ | (c)  |
| 4. $\frac{1}{6}$ | (d)  |

## D. Utilise Your Brain.

In Maths activity period, Maths teacher gave two paper strips each of the same length to Sneha and Tanya and asked them to shade the strip showing $\frac{3}{5}$ and $\frac{4}{5}$ respectively. Help them in shading and find who shades longer part of the strip.






# Geometry

## Learning Objectives

**After studying this chapter, students will be able to...**

- explore simple geometrical concepts.
- recognise plane and curved surface.
- learn to measure and to draw a line segment.
- learn about solid shapes.
- recognise different views.
- understand plane shapes.
- learn about diagonals.

## LESSON PLAN

**Suggested number of periods:** 16

**Suggested Teaching Aids:** Book: Math Genius! 3, blackboard or whiteboard, some real-life objects like: Dice, birthday cap, any cuboidal shape object, cut-outs of plane shapes, circular objects, cylindrical objects, etc.

**Keywords:** Point, line, ray, horizontal line, vertical line, slanting line, line segment, triangle, rectangle, square, circle, centre, side, vertex, cube, cuboid, cylinder, cone, sphere, hemisphere, diagonal, side view, front view, top view, tangram, plane surface, curved surface, etc.

**Pre-requisite knowledge:** Students must be familiar with plane shapes rectangle, square, triangle, circle, oval, straight line, curved line, drawing a straight line, solid shapes, etc.

**NEP feature:** The way of teaching provides experiential learning opportunities to the students and allows them to work with the support of each other which helps in their holistic development.

| Periods: 1–4 | Topic: Simple geometrical concepts, measuring and drawing a line segment | Suggested extra teaching aids: Ruler, pencil, some thread, torch, etc.<br>Math Genius! 3, pages 119-123 |
|---|---|---|

### ENGAGE

Start the class with an interaction. Talk about the presence of geometrical shapes all around. Tell the students to look around and identify some shapes that you see in different objects. Next, ask them to take a sharpen lead pencil and mark a dot with the tip of pencil on a paper. Recognise it as a point. Introduce simple geometrical shapes, like: point, line, line segment, ray, etc. Discuss the concepts given in 'Get Ready' and 'Let's Recall' sections on pages 119 and 120 respectively.

## EXPLORE

Divide the class into pairs. Ask one pair to draw four pairs of points on the board. Call 2nd pair and instruct them to name the points. Call another pair to identify the shortest way from one point to another point. Ask the students, how many end-points are there in a line segment? Accept the responses.

**[Experiential Learning]**

## EXPLAIN

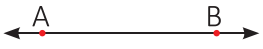
A point is represented by a tiny dot (.). To distinguish points, we name them using capitals letters, such as A, B, C, ... and read these points as point A, point B, point C and so on. Demonstrate the students five or six points on the board. Also name these points using capital letters. The straight line which joins the two points is called line segment. The line segment has two end points (say, A and B). With the help of diagrams, explain that a ray and a line segment are the parts of a straight line. Refer explanation given on pages 120–122.

Further, invite the students in small groups and demonstrate how to measure and draw a line segment using a ruler and a pencil.

## ELABORATE

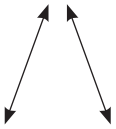
Demonstrate that a point shows an exact position and it is said to have no length, width or thickness.

A line is a one-dimensional figure, that does not have a thickness. It can extend in both direction. There are two types of lines:

1. Straight line 


2. Curved line 


There are three types of straight lines:

| (*a*) horizontal | (*b*) vertical | (*c*) slanting |
|---|---|---|
|  |  |  |

Next, demonstrate 'line segment' and 'ray' on board by taking references given on page 121. After understanding this concept, demonstrate measuring and drawing of a line segment with help of a ruler by taking the reference of the book.

**[Conceptual learning]**

## EVALUATE

**Classwork:** Ask to solve Q.3 of Practice Time 7A and Q.1 of Practice Time 7B.

**Homework:** Ask to solve the remaining questions of Practice Time 7A and 7B.

## ENHANCE

- Discuss 'Quick Check' given on page 121.
- Discuss Q.4 of Practice Time 7A and 'Think and Answer' given on page 123.

| Periods: 5–8 | Topic: Plane shapes, Diagonals, Tangram | Suggested extra teaching aids: Chart having images based on geometrical plane shapes, dot paper, cut outs of plane shapes etc.<br>Math Genius! 3 pages 124–127 |
|---|---|---|

## ENGAGE



Hang a chart of images based on plane shapes on the board as shown. Ask the students to identify the different shapes and count the number of each shapes. Accepts the answers.

## EXPLORE

Divide the class into four groups. Distribute dot papers to each group. Ask groups to construct with help of each other

- A square joining only 16 dots and colour it yellow.
- A rectangle joining only 20 dots and colour it red.
- A triangle joining only 18 dots and colour it blue.

Now try to identify the sides and vertices of the shapes drawn. Next, draw a rough sketch of a circle on a plane paper and try to find its side and vertex, if any. **[Collaborative Learning]**

## EXPLAIN

Any closed figure joining three or more points that can be drawn on a flat surface is called a plane figure or shape. Triangles, rectangles, squares, etc., are plane shapes. These shapes are also called 2-dimensional shapes because they have length and breadth.

Next, explain that when we join two vertices of a plane shape that are not next to each other is a diagonal.

Demonstrate on board with images that

- A triangle has 3 sides and 3 vertices.
- A rectangle has 4 sides and 4 vertices.
- A square also has 4 sides and 4 vertices.
- A circle has no vertex or side.

For detail explanation use the pages 124 and 125 of the book. Discuss ‘Quick Check’ ‘Note’ and ‘Activity’ given on pages 125.

## ELABORATE

Demonstrate that we can create different shapes like swan, human, bird, dog, etc. by using the plane shapes called tangram.

Distribute different cut-outs of plane shapes as given on page 126 of the book. Show the formation of shapes given in the book, and instruct the students to follow the steps. Encourage them to make some shapes using their own imagination. **[Creative Thinking]**

## EVALUATE

**Classwork:** Ask to solve questions 1, 2, 5 and 6 of Practice Time 7C. If students make any error, teacher will correct it and explain.

**Homework:** Ask to solve the remaining questions of Practice Time 7C.

## ENHANCE

- Ask to do the activity given on 'Think and Answer' and Maths Fun on pages 126 and 127 respectively.

**[Creative and Logical Thinking]**

| Periods: 9–12 | Topic: Solid shapes, Views | Suggested extra teaching aids: Some real-life 3D objects like: Ball, bowl, battery, pencil box, Christmas cap, etc.<br>Math Genius! 3 pages 127–130 |
|---|---|---|

## ENGAGE

Place some real-life objects on teacher's table and ask about its shapes, difference between 2-dimensional and 3-dimensional shapes. Accept the responses.

## EXPLORE

One day before, ask students to bring lunch based on 3-dimensional shapes, like: Sandwiches, parathas, juice tetra packs or cans, laddoos, etc.

On the next day, ask each student one by one to open the lunchbox and describe the shape of the food items in it.

Allow students to enjoy their lunch by distributing it to each other. **[Collaborative and Holistic Learning]**

## EXPLAIN

Demonstrate some solid objects in the classroom and explain that solids are not flat like plane figures. They are 3-dimensional shapes/figures. It has length, breadth (or width) and depth (or height). A solid occupies a fixed amount of space. Solid have two types of surfaces: Plane and curved. Solid shapes have faces, edges and vertices. Further explain front view, side view and top view of a 3-dimensional object.

## ELABORATE

Demonstrate some 3-dimensional objects in the classroom and explain that the part of an object which we see, touch and feel is known as the surface. The surface can be plane (or flat) or curved. Take reference of page 128 to explain it in detail.

Further demonstrate faces, edges and vertices of solid of objects: cube, cuboid, cylinder, cone, sphere and hemisphere by taking reference of pages 128 and 129. Also show real object to reinforce the concepts.

Demonstrate a cube and cuboid in the classroom and ask the differences between these two. Accept the responses.

Also, discuss the differences given between these two on page 129.

Next, demonstrate front view, side view and top view of water bottle in the classroom.

Ask students to draw front view, side view and top view of teacher table on their classwork notebook.

**[Experiential Learning]**

## EVALUATE

**Classwork:** Ask to solve 'Quick Check' given on page 129, Q.2 and 3 of Practice Time 7D. If any student makes any error, the teacher will correct and explain.

**Homework:** Ask to solve remaining questions of Practice Time 7D.

## ENHANCE

- Ask to do the activity given on page 129.
- Ask to collect and paste images of different 3-dimensional objects on a chart paper and represent shapes, number of plane faces, curved faces, edges and vertices of each in a tabular form.

**[Creative Thinking]**

| Periods: 13-14 | Topic: Maps | Suggested extra teaching aids: Chart showing maps or route between two locations.<br>Math Genius! 3 pages 131–132. |
|---|---|---|

## ENGAGE

Ask students about the route of school from their home, important landmarks come on the way. Accept the responses. Introduce the topic maps.

## EXPLORE

Divide the class into groups.

Distribute plain paper to each group. Ask to draw route map from the classroom to principal room using keys. Teacher will help if any group want it. The group whose route map is best and proper will be appreciated.

**[Experiential Learning]**

## EXPLAIN

A map is simply a drawing or picture or a landscape of a location. It shows the landscape

as it would be seen from above (top view). Also, used for guiding directions and to find out distances in a locality.

## ELABORATE

Take reference of page 131 to explain the map. Demonstrate the example on board.

## EVALUATE

**Classwork:** Ask to solve Q.1 of Practice Time 7E. If any student makes any error, the teacher will correct and explain.

**Homework:** Ask to solve Q.2 of Practice Time 7E.

## ENHANCE

- Discuss on 'maths connect's given on page 131. **[Cross Circular Learning]**

| Periods: 15–16 | Topic: (Revision) Chapter Assessment | Suggested extra teaching aids: Math Genius! 3 pages 133–135 |
|---|---|---|

## ENGAGE

Make students comfortable, so they can ask any question on any previously taught topics in which they are confused. Start the revision of the exercise.

## EXPLAIN

Start the revision of the exercise by using Encapsulate, Mental Maths, Brain Sizzlers and Chapter Assessment.

## ELABORATE

Discuss questions 1, 2 and 6 of the Chapter Assessment and accept students answer, if any confusion or error then explain and correct it. Discuss and motivate students to solve mental maths. Guide them to do the activity given on page 129.

## EVALUATE

**Classwork:** Discuss questions 3, 4 of the Chapter Assessment and Brain Sizzlers given on page 132.

**Homework:** Ask to solve Q.5 of Chapter Assessment and 'Mental Maths'.

## ENHANCE

Help the students to perform the activity given on 'Learning by Doing' on page 135. **[Art Integration]**

ORANGE

# ASSIGNMENT–13

Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

**Identify the correct answer.**

**1.** Which one has a curved edge?

(*a*) Dice (*b*) Book

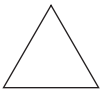
(*c*) Ring (*d*) Arrow

**2.** It has six flat faces and twelve straight edges

(*a*) Square (*b*) Cube

(*c*) Cylinder (*d*) Cone

**3.** Which one of the following is different from the other three?

(*a*)  (*b*) 

(*c*)  (*d*) 

**4.** Identify who am I? I have one plane face which is my base. I have one curved face and one vertex.

(*a*) Square (*b*) Rectangle

(*c*) Cone (*d*) Cuboid

**5.** Which of the following figure depicts a ray?

(*a*)  (*b*) 

(*c*)  (*d*) 

**6.** How many end-points are there in a 'point'?

(*a*) 0 (*b*) 1

(*c*) 2 (*d*) infinite

**7.** Which one of the following groups of objects have curved surfaces?

(*a*) Book, Blackboard (*b*) Tube light, Candle

(*c*) Cricket ball, Orange, Ring (*d*) Pencil box, Dice

**8.** Which shape is the face of a cube?

(*a*) Circle (*b*) Rectangle

(*c*) Triangle (*d*) Square

**9.** Which among the following is not an example of a plane?

(*a*) Surface of a floor (*b*) A blackboard

(*c*) Top of a table (*d*) Surface of a bottle

**10.** A line is made up of many points placed ..... .

(*a*) next to each other (*b*) far away from each other

(*c*) at short distance (*d*) at large distance

ORANGE

# ASSIGNMENT–14

Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

## A. Fill in the blanks.

1. A dice has ..... faces, ..... edges and ..... vertices.
2. A juice can is an example of ..... which has ..... curved surface.
3. ..... is the shape of the face of a cuboid.
4. Solid shapes are three dimensional because .....
5. A ...../..... has six flat faces and twelve straight edges.

## B. Label True or False.

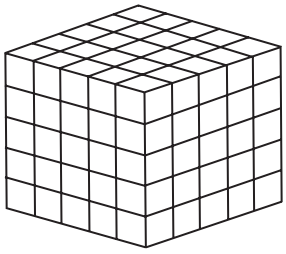
1. A circle has neither side nor vertex. .....
2. All the faces of cuboids are equal. .....
3. All the faces of a cube are curved. .....
4. The opposite faces of a cube are equal. .....
5. A cylinder has a vertex. .....

## C. Match the following.

| Column I | Column II |
|---|---|
| 1. A wooden box, a matchbox, a brick | (*a*) Cone |
| 2. Football, Globe, Tennis ball | (*b*) Cuboid |
| 3. A conical tent, Ice-cream cone | (*c*) Cube |
| 4. A juice can, pipe, wooden log, electric cell | (*d*) Sphere |
| 5. A dice, rubik cube, a chalk box | (*e*) Cylinder |

## D. Utilise Your Brain.

1. Count the number of cubes in the figure given below.



2. Ajay was going to the market to buy things for his art project. His teacher asked him to get 5 m of orange coloured ribbon. He bought this piece of ribbon. Can you say which plane figure does it represent?




# Symmetry and Patterns

## Learning Objectives

**After studying this chapter, students will be able to...**

- explore symmetry in surroundings and nature.
- identify symmetrical figures using a mirror.
- understand patterns and their types.
- recognise tiling patterns (Tessellation).

## LESSON PLAN

**Suggested number of periods:** 12

**Suggested Teaching Aids:** Book: Math Genius! 3, blackboard or whiteboard, some cut-outs of real-life objects like butterflies, monuments, etc.

**Keywords:** Identical, symmetrical shapes, asymmetrical shapes, line of symmetry, pattern, etc. etc.

**Pre-requisite knowledge:** Students must be familiar with patterns in shapes, numbers, and letters.

**NEP feature:** The way of teaching provides experiential learning opportunities to the students and allows them to work with the support of each other which helps in their holistic development.

| Periods: 1–5 | Topic: Symmetry | Suggested extra teaching aids: Math Genius! 3 pages 137–139 |
|---|---|---|

### ENGAGE

Distribute some cut-outs of monuments, human faces, or other objects. Instruct to fold the cut-outs into two identical halves and open them. Ask: Is the crease formed on the cut-out dividing the shape into two identical halves? Accept the responses. Introduce the concept of symmetry.

### EXPLORE

Distribute papers in the classroom. Instruct to make some closed shapes on it. Draw a crease line on the shapes wherever you want to make the shape into two identical halves and observe the shapes.

Ask: Which shapes divide into two identical halves by the crease line? Accept the responses. If the crease line divides the shapes into two identical halves, it is called line of symmetry and shapes are symmetrical.

**[Experiential Learning]**

## EXPLAIN

When a figure or shape can be divided into two halves by drawing a line, then they are called symmetrical figures or shapes. The line which divides the figure into two halves is called the line of symmetry or axis of symmetry.



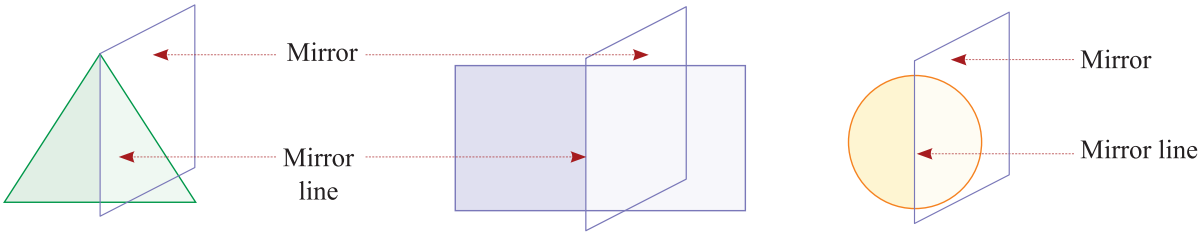


Figures that are not symmetrical are called asymmetrical figures. They do not have a line of symmetry.

## ELABORATE



Write on the board "Identifying symmetrical figures using a mirror". Demonstrate by taking a triangular, rectangular and circular piece of paper and fold them into halves. Cut them along the line of symmetry. Place a mirror along the line of symmetry on each piece.




Demonstrate that the shape viewed in the mirror is the same as the shape on the left side and the two together form the complete shape. Take help of topics described on page no. 137, 138 and 139. **[Conceptual Learning]**

## EVALUATE

**Classwork:** Ask to solve questions 1 and 2 Practice Time 8A. If any student make any error, the teacher will correct it and explain.

**Homework:** Ask to solve the remaining questions of Practice Time 8A.

## ENHANCE

- Discuss the 'Quick Check' and 'Get It Right' given on page 138. **[Critical Thinking]**
- Ask to watch the video on symmetry on the link "www.fullmarksonline.com". **[Tech Connect]**

| Periods: 6–10 | Topic: Patterns, Tiling Patterns or Tessellation | Suggested extra teaching aids: Chart paper having pictures of some pattern and tilling patterns, etc. Math Genius! 3 pages 139–143 |
|---|---|---|

## ENGAGE

Instruct the class to pay attention. Draw some object patterns on the board with some blank spaces. Instruct the students to tell the name of the next two shapes or objects to complete/continue the pattern drawn on the board. Accept the responses. Introduce the concept of different kinds of patterns and tessellation.

## EXPLORE

Divide the class into pairs. Give them some cut-outs of different shapes.

Instruct to make their own pattern using these cut-outs of shapes.

Ask a student of the other pairs to identify and tell the name of the next two cut-outs of the shapes to continue the pattern. Accept the responses. Discuss some other kinds of patterns.

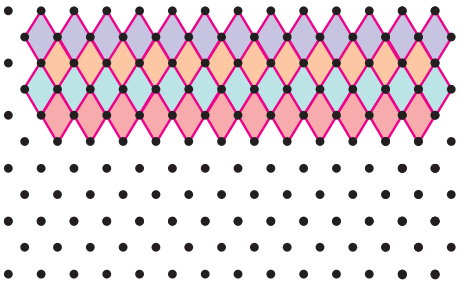
## EXPLAIN

A pattern is a set of shapes, numbers or letters that can be repeated according to a rule so that a sequence is formed. Patterns are found everywhere around us. The pattern is formed when different shapes are drawn repeatedly. We can find beautiful patterns on saris, carpets, rangolis, tiles, and in nature. Different colours can be used to create different patterns with the same shapes.

Also use page no. 139 and 140 of the book for discussion. **[Conceptual Learning]**

## ELABORATE

Divide the class into small groups. Provide each group an isometric/ square dot/grid paper. Instruct each student to take a crayon/coloured pencil of any colour but not same. Then shade the square/diamond/ triangle shape in order and observe the tiling pattern/tessellation so formed.



Discuss with other groups. **[Collaborative Learning]**

You can organise a competition for 'Diya decoration' as given in Life Skills on page 142.

## EVALUATE

**Classwork:** Ask to solve Q.1 and 2 of Practice Time 8B and Q.1 of 8C. If students make any error, the teacher will correct it and explain.

**Homework:** Ask to solve the remaining questions of Practice Time 8B and 8C.

## ENHANCE

- Motivate students to do 'Think and Answer' and 'Project' given on page 140.
- Discuss 'maths fun' and 'quick check' given on pages 141 and 142 respectively. **[Critical Thinking]**
- Watch the video on symmetry and pattern on "www.fullmarksonline.com". **[Tech Connect]**

| Periods: 11-12 | Topic: (Revision) Chapter Assessment | Suggested extra teaching aids:<br>Chart using encapsulate<br>Math Genius! 3 pages 143-145 |
|---|---|---|

## ENGAGE

Make students comfortable, so they can ask any question on any previously taught topics in which they have problems.

## EXPLAIN

Start the revision of the exercise by using Encapsulate, Mental Maths, Chapter Assessment, and Brain Sizzlers of the chapter.

## ELABORATE

Discuss Mental Maths, Brain Sizzlers in the classroom, Q.1 to 3 of the Chapter Assessment and accept students' answers. If any confusion or error then explain and correct it.

## EVALUATE

**Classwork:** Discuss questions 1 to 3 of the Chapter Assessment in the classroom.

**Homework:** Q.4 to 6 of the Chapter Assessment.

## ENHANCE

- Ask students to perform the activity given in 'Learning by Doing' on page 145.
- Take a chart paper and paste images of five symmetrical monuments on it. **[Art Integration]**

ORANGE

# ASSIGNMENT–15

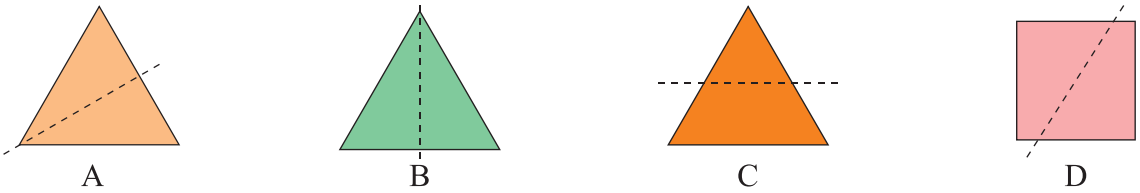
Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

**Identify the correct answer.**

**1.** Look at the pictures given below. Which of the following pictures make mirror halves?

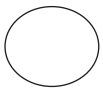
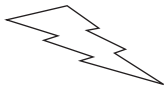



(*a*) A and B (*b*) Only B (*c*) B and C (*d*) D and A

**2.** Which of the following English alphabet has two lines of symmetry?

(*a*) A (*b*) T (*c*) H (*d*) V

**3.** Which one of the following is asymmetrical?

(*a*)  (*b*)  (*c*)  (*d*) 

**4.** Complete the pattern: 110, 120, 130, 140, ....., .....

(*a*) 150, 106 (*b*) 150, 120 (*c*) 150, 160 (*d*) 150, 120

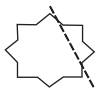
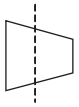
**5.** How many line(s) of symmetry does numeral 'Zero' has?

(*a*) 0 (*b*) 1 (*c*) 2 (*d*) infinite

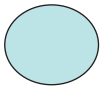
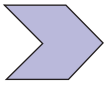
**6.** Which one of the following is the next term in the series: AB2, CD4, EF6, .....

(*a*) FG8 (*b*) GH8 (*c*) GH9 (*d*) HG8

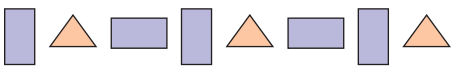
**7.** In which of the following options, the dotted line is the correct line of symmetry of the figure?

(*a*)  (*b*)  (*c*)  (*d*) 

**8.** Which one of the following shapes cannot be used in tiling?

(*a*)  (*b*)  (*c*)  (*d*) 

**9.** What comes next in the pattern?



(*a*)  (*b*)  (*c*)  (*d*) 

**10.** What is rule of the pattern given here? 2, 5, 11, 23, 47, ...

(*a*) Multiply the number by 2 and add 1 (*b*) Add 3

(*c*) Multiply by 2 (*d*) Add 6

ORANGE

# ASSIGNMENT–16

Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

## A. Fill in the blanks.

1. A ..... which divides an object or a picture into two exactly halves, is called a line of symmetry.
2. Numeral '2' has ..... line(s) of symmetry.
3. AB, 12, CD, 34, ....., .....
4.  .....
5. 101, 111, 121, 131, ....., .....

## B. Label True or False.

1. A circle has 2 lines of symmetry. .....
2. In the number pattern: 3, 6, 12, 24, …, the next term will be 48. .....
3. Letter 'Z' has one horizontal line of symmetry. .....
4.  is a symmetrical object. .....
5. A square has two lines of symmetry. .....

## C. Match the following.

| Column I | Column II |
|---|---|
| 1. 21, 31, 41, 51, ... | (*a*) Add 5 |
| 2. 4, 8, 16, 32, ... | (*b*) Multiply 2 |
| 3. 23, 20, 17, 14, ... | (*c*) Add 3 |
| 4. 6, 9, 12, 15, ... | (*d*) Subtract 3 |
| 5. 2, 7, 12, 17, ... | (*e*) Add 10 |

## D. Utilise Your Brain.

Dinesh planted a seed in his garden. He watered the plant daily. The seed grew 3 cm every week. The table below shows the details.

| Week | 1 | 1 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Height (in cm) | 3 | 6 | 9 | 12 | 15 |

How tall will the plant be after the 8th week?



# 9 Measurement

## Learning Objectives

**After studying this chapter, students will be able to...**

- measure length and distance using standard units like centimetre, metre and kilometre.
- understand the conversion of units of length.
- measure weight using standard units like milligram, gram and kilogram.
- understand the conversion of units of weight.
- learn to make equal weights.
- measure capacity using standard units like millilitre and litre.
- understand the conversion of units of capacities.
- learn to make equal volumes.
- learn to add the lengths, weights and capacities.
- learn to subtract the lengths, weights and capacities.

# LESSON PLAN

**Suggested number of periods:** 18

**Suggested Teaching Aids:** Book: Math Genius! 3, blackboard or whiteboard, some chits on which different measurement are written, bowl, ruler, some weights, some containers of different capacities, etc.

**Keywords:** Metre, centimetre, millimetre, gram, kilogram, litre, millilitre, etc.

**Pre-requisite knowledge:** Students must be familiar with units of measurement, conversion, addition and subtraction of numbers.

**NEP feature:** The way of teaching provides experiential learning opportunities to the students and allows them to work with the support of each other which helps in their holistic development.

| Periods: 1–3 | Topic: Measuring length, conversion | Suggested extra teaching aids: Math Genius! 3, pages 148–150 |
|---|---|---|

## ENGAGE

Divide the class into pairs. Help students in measuring the length of various objects in cm using a ruler. Ask: What is the length of the pencil? Is cm a standard unit of length? Is any other standard units of length? Accept the responses. Use 'Get Ready' and 'Let's Recall ' given on page 146 and 147 to revise the previous concept.

## EXPLORE

Divide the class into pairs and give them a measuring tape having markings in cm and m. Instruct students, using the measuring tape measure the length of their desk, the length of their classroom, and the height of their partner within the pair.

Ask: what is the length of the desk? Or What is the length of the classroom? What is the height of their partner in m? How many cm are there in 1 metre? In what unit do we measure the distance between the school and their home? Accept the responses. **[Experiential Learning]**

## EXPLAIN

Introduce standard units of length and how to convert them into others. There are three standard units of length, centimetre (cm), metre (m), and, kilometre (km). A centimetre is used to measure small lengths, like the length of a pencil, twig, pencil box, etc. A metre is used to measure big objects, like the length of a garden, room, cloth, etc., and the large lengths like the distance between two cities is measured in kilometres. There are 100 cm in 1 m, *i.e.*, 1 m = 100 cm, and there are 1000 m in 1 km, *i.e.*, 1 km = 1000 m.

## ELABORATE

Write some measurements in cm, m, and km on the board, such as: 200 cm, 5 m, 3 km, 5000 m, etc. Take a bowl and put some chits having units metres, centimetres, or kilometres written on them. Choose a pair randomly.

Instruct: Read aloud the measurement written on the board, pick out a chit, and convert the measurement into the units written on the chit. Repeat this activity with more pairs till time permits. Accept the responses. Also, discuss the topic of measuring length given on page 148. Demonstrate the conversion of units on the board with examples. (Take reference of the page149 and 150 to explain the conversion of units.)

**[Experiential Learning]**

## EVALUATE

**Classwork:** Ask to solve Q. 1 and 2 of Practice Time 9A, if any student makes any error, the teacher will correct it and explain.

**Homework:** Ask to solve the remaining questions of Practice Time 9A.

## ENHANCE

- Discuss the ‘maths fun’ given on page 149. **[Logical thinking]**
- Ask to watch the video on measurement on the link “www.fullmarksonline.com”.

| Periods: 4–6 | Topic: Measuring mass(weight), conversion | Suggested extra teaching aids: Weighing scale and some weights of 50 g, 100 g, 250 g, 500 g, etc.<br>Math Genius! 3, pages 151–154 |
|---|---|---|

## ENGAGE

Place a weighing machine on the table. Take some objects, like a book, school bag, water bottle, eraser, etc. Instruct the class to hold the objects one by one, guess their weights and then, verify their weight by using the weighing machine.

Ask: Which is heavier? Which objects have their weight in kg and g? Accept the responses.

## EXPLORE

Divide the class into groups. Give them a set of all weights including gram and kg weight (up to 2 kg). Instruct: Measure the weight of their school bags, first by using kilogram weight and after that by using gram weight only and note down their weights in both units.

Ask: What is the weight of your school bag in kg and g respectively? If the weight of your school bag is 5 kg, then how many grams are there in 5 kg? Accept the responses and discuss the conversion of kg into grams.

## EXPLAIN

Introduce standard units of weight and their conversions. Gram is used to measure the weight of small or lighter objects, while 'kilogram' is used to measure the weight of big or heavier objects. There are 1000 g in 1 kg, *i.e.*, 1 kg = 1000 g.

To convert the kg into grams, multiply by 1000 or simply add three zeros to the right of weight in kg.

To convert grams into kilograms, we divide the number of grams by 1000. Similarly, to convert kilograms and grams into grams, we multiply the number of kilograms by 1000 and add the product to the number of grams and to convert grams into kilograms and grams, we divide the number of grams by 1000. Here, we get the quotient (in kg) and remainder (in g).

## ELABORATE

Write some measurements of weights in g on the blackboard.

Instruct: Convert them into kg. Accept the responses and on that basis explain that on converting measurements of weights from g into kg, divide by 1000 or simply remove the last three zeros, if the weight is exactly divisible by 1000. And, when the measure in grams is not exactly divisible by 1000, then the quotient is written in kg, and the remainder is written in g. Or simply write last three digits in grams and the remaining digits in kilograms from the right. Demonstrate conversion of kg into g on the board.

- Convert 6 kg to g.

  As, 1 kg = 1000 g

  So, 6 kg = (6 × 1000) g = 6000 g
- Convert 9000 g into kg.

  Remove the last three zeros from the right to convert g to kg.

  Or, 9000 g = (9000 ÷ 1000) kg = 9 kg
- Convert 3 kg 150 g to g.

  3 kg 150 g = (3 × 1000) g + 150 g = 3000 g + 150 g = 3150 g
- Convert 4640 g into kg and g.

  4640 ÷ 1000, Q = 4 and R = 640

  So, 4640 g = 4 kg 640 g

Also, take reference of the pages 152 to 154 to explain the conversion of units.

Demonstrates the making of equal weights by taking the reference of the table given on page 154.

**[Conceptual Learning]**

## EVALUATE

**Classwork:** Ask to solve Q.1 and 3 of Practice Time 9B. If students make any error, the teacher will correct it and explain.

**Homework:** Ask to solve the remaining questions of practice time 9B.

## ENHANCE

- Ask to solve 'Maths Fun' and 'Life Skills' given on pages 153 and 154 respectively. **[Logical Thinking]**
- Watch the video on the measurement on "www.fullmarksonline.com". **[Tech Connect]**

| Periods: 7–9 | Topic: Measuring capacity, conversion, making equal volumes(capacity) | Suggested extra teaching aids: Some containers of different measurements, some liquids for measurement. Math Genius! 3 pages 155–158 |
|---|---|---|

## ENGAGE

Recall the concept of capacity. Put some containers of different measurements on the table. Ask: Which container will contain more liquid? Which containers have their capacity in litres and in millilitres respectively? Accept the responses. Introduce conversion of capacities.

## EXPLORE

Divide the class into 5 groups. Distribute measuring jars (with 50 mL, 100 mL, 200 mL, 300 mL, 400 mL and 500 mL marking), a small measuring cup (1, 2, 3, 4, 5 mL marking), a 1 L water bottle, and an empty 5 L bucket. Instruct each group to fill 1 L of bottle with liquid using measuring jars/cups in different capacities and write on the board.

1 L = ___ (100 mL)

1 L = ___ (200 mL) …and so on.

Accept the responses and summarise the conversion of capacities to them.

## EXPLAIN

The quantity of a liquid that a container or vessel can hold is called its capacity or volume. Vessels of different sizes are used to measure different quantities of liquid. To measure the capacity of a small quantity of liquid mL is used, while 'litre' is used to measure the capacity of a large amount of liquid. There are 1000 mL in 1 L, i.e., 1 L = 1000 mL.

- To convert the L into mL, multiply by 1000 or simply add three zeros to the right of capacity in L.
- To convert litres and millilitres into millilitres, we multiply the number of litres by 1000 and add it to the number of millilitres.
- To convert millilitres into litres, we divide the number of millilitres by 1000.
- To convert millilitres into litres and millilitres, we divide number of millilitres by 1000. We get the quotient (in litres) and the remainder (in millilitres).

## ELABORATE

Demonstrate with the help of book page 155, that small quantities of liquids are measured in millilitre. It is denoted by 'mL'.

Like:

|  |  |  |
|---|---|---|
| 200 mL | 5 mL | 150 mL |

Large quantities of liquids are measured in litres. It is denoted by 'L'.

Like:

| | | |
|---|---|---|
|  |  |   |
| 20 L | 150 L | 225 L |

Write some measurements of capacities in mL on the blackboard.

Demonstrate conversion of L into mL on the board. As,

- Convert the 5 L into mL.

  5 L = (5 × 1000) mL = 5000 mL
- Convert 4 L 328 mL into mL.

  4 L 328 mL = (4 × 1000) mL + 328 mL = 4000 mL + 328 mL = 4328 mL
- Convert 6000 mL into L.

  6000 mL = (6000 ÷ 1000) L = 6 L
- Convert 9950 into L and mL.

  9950 mL = (9950 ÷ 1000) L = 9 L 950 mL

Or 9950 mL = 9000 mL + 950 mL = 9 L + 950 mL = 9 L 950 mL.

Also discuss examples of pages 155 to 157 of the book.

Discuss making equal volumes by using the reference given on page 157.

## EVALUATE

**Classwork:** Ask students to solve Q.1 and 2 of Practice Time 9C.

**Homework:** Ask students to solve Q.3 to 5 of Practice Time 9C.

## ENHANCE:

- Ask students to perform the activity given in 'project' on page 157.

| Periods: 10–12 | Topic: Addition of lengths, addition of weights, addition of capacity | Suggested extra teaching aids: Math Genius! 3, pages 158–162. |
|---|---|---|

## ENGAGE

Write some measurements in different standard units on the board.

Instruct: Convert them into m and cm, km and m, g and kg, L and mL. Ask to add any two measurements written on the board. Accept the responses. Introduce addition of different measurements to the class.

## EXPLORE

Divide the class into pairs. Take three bowls with tags, length, weight and capacity and put some chits having measurements of lengths, weight and capacity written on them. Choose a pair of students randomly. Instruct them to pick out one chit from each bowl, read aloud and write the measurements on the board and then add them. (Both students of the pair will choose one-one chit).

Ask to find the sum of length, weight and capacity written on chits. Accept the response. Rectify if any error. Repeat this with more pairs of students till time permits.

## EXPLAIN

To add different units of lengths, follow these steps.

- Write length in km, m and cm in their respective columns.
- Add centimetres, metres, and then kilometres, as you add ordinary numbers and get the result.

Similarly, to add measurements of weights, write the weights in kg and g columns respectively, then add grams and then add kilograms.

To add measurements of capacities, write the capacities in L and mL columns respectively, then add mL and then add L. Demonstrate the addition of units of lengths on the board.

Also, discuss the other examples given on pages 158–161.

## ELABORATE

Divide the class into small groups. Keep a set of instruments for measuring height/length and weight, such as measuring tape, weighing machine. Invite a group in front of the class and instruct them to measure their heights and weights. Tell them to write the measurement on the board. Consider the measurements of any two members and demonstrate how to add them. Ask the class to add the weights of the heaviest and the lightest students of the group.

For instance,

| kg | | g | | |
|---|---|---|---|---|
| (1) | (1) | (1) | | |
| 3 | 2 | 5 | 4 | 0 |
| 2 | 9 | 6 | 9 | 0 |
| 6 | 2 | 2 | 3 | 0 |

Similarly, invite other groups and give opportunity to perform the activity.

Encourage students to solve Think and Answer given on pages 160–161.

## EVALUATE

**Classwork:** Instruct to solve Q.1 of Practice Time 9D.

**Homework:** Ask to solve Q.2 and 3 of Practice Time 9D.

## ENHANCE

Ask to solve worksheets on the measurement given on the "www.fullmarksonline.com". **[Tech Connect]**

| Periods: 13–14 | Topic: Subtraction of lengths, subtraction of weights, subtraction of capacity | Suggested extra teaching aids: Math Genius! 3 pages 162–166. |
|---|---|---|

## ENGAGE

Write some measurements in different standard units on the board.

Instruct: Convert them into m and cm, km and m, kg and g, L and mL.

Ask to find the difference between any two measurements written on the board. Accept the responses. Introduce subtraction of different measurements to the class.

## EXPLORE

Divide the class into pairs. Take three bowls with tags, length, weight and capacity and put some chits having measurements of lengths, weights and capacity written on them. Choose a pair of students randomly. Instruct them to pick out one chit from each bowl, read aloud and write the measurements on the board. (Both the students will choose one-one chit).

Ask to find the difference of measurements written on chits. Accept the response. Rectify if any error. Repeat this with more pairs of students till time permits.

## EXPLAIN

To find the difference between different units of measurement, follow these steps.

Write larger measurement of length, weight or capacity in upper row.

Subtract corresponding units and get the result.

Explain some examples on the board to understand the concept. Refer textbook pages 162–166 for more examples. **[Conceptual Understanding]**

## ELABORATE

Talk about some real life situations where we need to subtract measurement of length, weight and capacity. For example, a street vendor left home with 60 kg 500 g tomatoes on his cart in the morning. Till noon he could sell 35 kg 750 g tomatoes. How much tomatoes was left with him to sell/

**Subtract 35 kg 750 g from 60 kg 500 g.**

| | kg | | | g | | |
|---|---|---|---|---|---|---|
| | | 9 | | 14 | | |
| | 5 | 10 | | 4 | 10 | |
| | 6 | 0 | | 5 | 0 | 0 |
| – | 3 | 5 | | 7 | 5 | 0 |
| | 2 | 4 | | 7 | 5 | 0 |

Thus, 60 kg 500 g – 35 kg 750 g = 24 kg 750 g.

Encourage students to attempt 'Think and Answer' given on page 164.

## EVALUATE

**Classwork:** Instruct to solve Q.1 of Practice Time 9E.

**Homework:** Ask to solve Q.2 of of Practice Time 9E.

## ENHANCE

Ask to solve worksheets on the measurement given on the "www.fullmarksonline.com". **[Tech Connect]**

| Periods: 15-16 | Topic: Word Problems | Suggested extra teaching aids: Math Genius! 3 pages 167–168 |
|---|---|---|

## ENGAGE

Discuss a real-life problem based on addition and subtraction of length, weight or capacity in the classroom. Write a question on the board. Instruct to read aloud the problem and try to solve it. Accept the responses. Then explain in detail.

## EXPLORE

Divide the class into groups. Write some simple real-life problem based on addition and subtraction of length, weight and capacity on paper chits and mix them in a bowl.

Call one group and ask them to pick one chit from the ball and instruct them to read aloud the problem and solve it on the board. Accept the responses. For any error rectify them.

## EXPLAIN

Understand the problem written on the board, and after that devise a plan for how to solve the problem, then work out the solution and at last check the solution.

## ELABORATE

Demonstrate the solution of word problems on the board (take the reference of examples given on pages 167 and 168). **[Conceptual Learning]**

## EVALUATE

**Classwork:** Instruct to solve Q.1 and 2 of Practice Time 9F.

**Homework:** Ask to solve Q.3 to 6 of Practice Time 9F.

## ENHANCE

Ask to solve worksheets on the measurement given on the "www.fullmarksonline.com". **[Tech Connect]**

| Periods: 17–18 | Topic: (Revision) Chapter Assessment | Suggested extra teaching aids: Math Genius! 3 pages 169–172 |
|---|---|---|

## ENGAGE

Make students comfortable, so they can ask any question on any previously taught topics in which they are facing problems.

## EXPLAIN

Start the revision of the exercise by using Encapsulate, Mental Maths, Chapter Assessment, and Brain Sizzlers of the chapter.

## ELABORATE

Discuss mental maths, brain sizzlers in the classroom, Q. 1 to 6 of the chapter assessment and accept students' answers. If any confusion or error, then explain and correct it.

## EVALUATE

**Classwork:** Discuss questions 1 to 6 of Chapter Assessment in the classroom.

**Homework:** Q.7 to 13 of the Chapter Assessment given on page 171 as homework assignment.

## ENHANCE

- Ask students to perform the activity given in 'Learning by Doing' on page 172.

**[Experiential Learning]**

ORANGE

# ASSIGNMENT–17

Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

**Identify the correct answer.**

**1.** Which among the following cannot be measured in metre?

(*a*) length (*b*) height (*c*) weight (*d*) width

**2.** 16 kg + 3864 g ≠ .....

(*a*) 19 kg + 86 g (*b*) 19864 g (*c*) 19 kg + 864 g (*d*) 18 kg + 1864 g

**3.** What should be added in 640 mL to get a litre?

(*a*) 260 mL (*b*) 320 mL (*c*) 360 mL (*d*) 460 mL

**4.** Which is the smallest?

(*a*) 300 m (*b*) 200 m (*c*) 200 cm (*d*) 300 cm

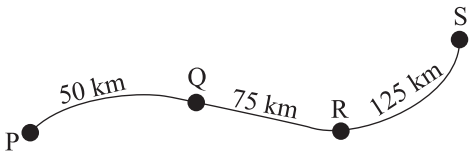
**5.** The weight of a ₹50-note is about 1 mg. How many notes will be there in a pile of 50-rupee notes that weighs 1 gram?

(*a*) 1000 notes (*b*) 500 notes (*c*) 100 notes (*d*) 200 notes

**6.** Which is the most appropriate tool to measure 1000 mL of milk?

(*a*) a ruler (*b*) a weighing scale (*c*) a meter rod (*d*) a measuring jug

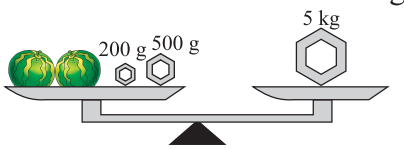
**7.** A train travels from P to S as shown below:




What is the total distance from P to S?

(*a*) 125 km (*b*) 200 km (*c*) 250 km (*d*) 325 km

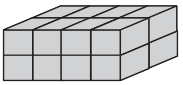
**8.** Anurag buys two watermelons from the market which are weighed by the seller as shown below.




How much did the two watermelons weigh together?

(*a*) 5 kg (*b*) 4 kg 300 g (*c*) 700 g (*d*) 5 kg 700 g

**9.** Each  weighs 1 kg. How much does the following figure weigh?



(*a*) 20 kg (*b*) 16 kg (*c*) 12 kg (*d*) 10 kg

**10.** Which of the following shows 2 m, 50 cm, 100 mm in ascending order?

(*a*) 2 m, 50 cm, 100 mm (*b*) 100 mm, 2 m, 50 cm

(*c*) 100 mm, 50 cm, 2 m (*d*) 50 cm, 100 mm, 2 m

ORANGE

# ASSIGNMENT–18

Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

## A. Fill in the blanks.

1. 1 kg is ..... times of a gram.
2. 7725 m = ..... km and ..... m.
3. The quantity of matter in an object is called its ..... .
4. Lemon soda in a glass = 300 ..... .
5. 15222 m – 4780 m = ..... km ..... m.

## B. Label True or False.

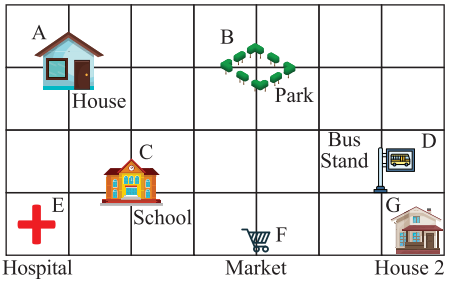
1. L is an appropriate unit to measure a tea spoon of cough syrup. .....
2. mL is an appropriate unit to measure the capacity of a petrol tank in a car. .....
3. Kilograms is an appropriate unit to measure weight of a piece of paper. .....
4. Metre is an appropriate unit to measure the length of a pencil. .....
5. To convert litres and millilitres into millilitres, we divide the number of litres by 1000. .....

## C. Match the following.

| Column I | Column II |
|---|---|
| 1. 4547 g + 2 kg 300 g = _____ g | (*a*) 1545 |
| 2. 9 L 950 mL = _____ mL | (*b*) 9009 |
| 3. 90 m + 9 cm = _____ cm | (*c*) 641 |
| 4. 3 kg 455 g + _____ g = 5 kg | (*d*) 6847 |
| 5. 6 m 40 cm + 10 mm = _____ cm | (*e*) 9950 |

## D. Utilise Your Brain.

Read the map below to answer the question.




Swastik is walking from school to the bus stand, what will be the shortest distance he covers if 1 unit block distance = 250 m?




# Time

## Learning Objectives

**After studying this chapter, students will be able to...**

- explore about clock.
- read the time to 5 minutes intervals.
- estimate the time.
- learn to read time in seconds.
- learn to write dates.
- understand the sequence of the events occurring over longer periods.
- read the time correctly using a clock.
- understand the use of a.m. and p.m.
- learn between times (before and after).
- identify a particular day and date on a calendar.
- understand the conversion of units of time.

# LESSON PLAN

**Suggested number of periods:** 10

**Suggested Teaching Aids:** Book: Math Genius! 3, blackboard or whiteboard, wall clock/table clock, calendar, etc.

**Keywords:** A.M., P.M., ante meridiem, post meridiem, minutes, seconds, quarter past, quarter to, conversion, leap year, etc.

**Pre-requisite knowledge:** Students must be familiar with a.m., p.m., reading time when minute hand is at half past the hour, quarter the hour, days of the week, etc.

**NEP feature:** The way of teaching provides experiential learning opportunities to the students and allows them to work with the support of each other which helps in their holistic development.

| Periods: 1–3 | Topic: Clock, reading the time on the clocks, reading time to 5 minutes intervals | Suggested extra teaching aids: Wall clock or table clock<br>Math Genius! 3 pages 173–179 |
|---|---|---|

## ENGAGE

After the introduction, start with a discussion like: At what time do you wake up? At what time do you come to school? At what time do you leave the school? At what time do you sleep? Accept the responses.

Discuss the concepts given on "Get Ready" and "Let's Recall" sections on pages 173 and 174.

## EXPLORE

Divide the class into two groups A and B. Give a cardboard clock with minute and hour hand to them. Instruct group A to display the time at 5 minutes interval and the group B will read the time. If group B identifies the time shown on the clock correctly, then group B will get 1 point. In the similar way, there will be five rounds for each group. Group who will identify the more correct time will win the game. **[Experiential Learning]**

## EXPLAIN

A clock has two hands; one is shorter than the other. The shorter hand is hour hand and the longer hand is the minute hand. These hands move in a clockwise direction. The dial of the clock is divided into 12 big divisions, numbered from 1 to 12. The gap between every pair of consecutive numbers are divided into 5 equal small divisions. There are 60 small divisions on the whole dial. The minute hand (longer hand) moves from one small division to the next small division in 1 minute. It goes once around the dial in 1 hour. So, the minute hand covers 60 small divisions in 1 hour.

So, 1 hour = 60 minutes.

The hour hand moves from one number to the next number in 1 hour. So, it takes 12 hours to complete one round. The hour hand takes 2 complete rounds in a day. So, 1 day = 24 hours.

The time is in full hours when the minute hand is at twelve. The time is half an hour when it is on 6, quarter past the hour when it is on 3, and quarter to the hour when it is on 9.

The minute hand moves from one number to the next number in 5 minutes.

Any time can be read and written using 'past the hour' as well as 'to the next hour'.

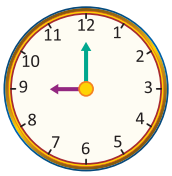
- When the minute hand is in the left half, the time is read as to.
- When the minute hand is in the right half, the time is read as past.

## ELABORATE

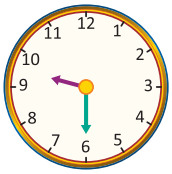
Involve the students to make a clock using paper plate as suggested on page 175. Then demonstrate how to read time by setting the hands for different times.

Demonstrate that the hour hand is on 9 and the minute hand is on 12.

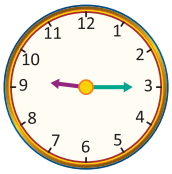
So, the time is 9:00 or 9 o'clock.



Again demonstrate half past time on the clock. As in the given clock, the hour hand is between 9 and 10 and the minute hand is on 6. So, the time is 9:30 or half past 9.



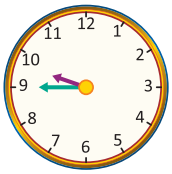
Similarly, demonstrate the time in quarter past and quarter to in the clock. As, the minute hand in the clock is at 3. It shows 15 minutes, as 3 × 5 = 15. The hour hand is slightly past 9. The time by the clock is 'quarter past nine' or 9:15.



Again, show a quarter to an hour. As in the given clock

The hour hand is near 10. And the minute hand is on 9.

The time is 9:45 or quarter to 10.



Further, demonstrates the complete dial is divided into 12 × 5 = 60 small equal divisions. i.e., 1 small division = 1 minute, 5 small divisions = 5 minutes. And 1 hour = 12 × 5 = 60 minutes.

The minute hand moves from one number to the next number in 5 minutes.

When the minute hand is on 1, it means 1 × 5 = 5 minutes have passed.

When the minute hand is on 2, it means 2 × 5 = 10 minutes have passed.

When the minute hand is on 3, it means 3 × 5 = 15 minutes have passed, and so on.

Next, explain reading time when the minute hand is in the left half or in the right half by using references given on page 178. **[Experiential Learning]**

## EVALUATE

**Classwork:** Ask to solve Q.1, 2 and 3 of Practice Time 10A, Q.1 and 2 of Practice Time 10B. If any student makes any error, the teacher will correct it and explain.

**Homework:** Ask to solve the remaining questions of Practice Time 10A and 10B.

## ENHANCE

- Ask to do 'Maths Fun' given on page 176. **[Experiential Learning]**
- Discuss 'Quick Check' given on page 178. **[Logical Thinking]**

| Periods: 4–5 | Topic: A.M. and P.M., Time in seconds, Estimating the Time, Between Time (Before and After) | Suggested extra teaching aids: Wall clock or table clock, cut-outs of images showing daily activities of a child<br>Math Genius! 3 pages 180–183 |
|---|---|---|

## ENGAGE

After the introduction, ask the students about the time when they wake up. What time they come to school? At what time they take their dinner? Accept the responses. Suppose they came to school at 8 o'clock and take the dinner at 8 o'clock. Ask: how is it possible? Accept the responses.

Introduce: the time in a.m. and p.m.

## EXPLORE

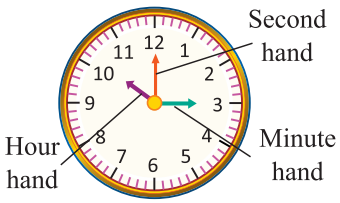
Divide the class into two groups. Show some cut-outs of daily activities done by a kid. Ask students to observe the activities and tell the time in a.m. or in p.m. when the activities are performed. The group who will tell the correct time for more number of activities will win the game.

## EXPLAIN

There are 24 hours in a day. We write the time between 12 midnight and 12 noon using a.m. (ante meridian). The time before noon is a.m. We write the time between 12 noon and 12 midnight using p.m. (post meridian). The time after noon is p.m. Teacher can also take reference of page 180 to explain the concept.

## ELABORATE

Use the references given on page 180 to talk about the second hand.




Explain that, there is another hand, i.e., the third hand in a clock.

It is very thin and long hand. It is called the second hand. It moves faster than the minute hand.

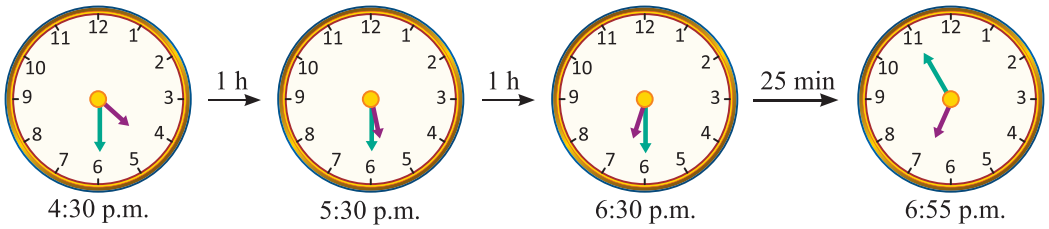
It completes one round in 1 minute or 60 seconds. So, 1 minute = 60 seconds.

Further, demonstrate the cut out of child activities where the estimating time is in seconds.

Next move on to page 182, explain the between time (Before and after) i.e., elapsed time between two activities.

Write on board: Shweta started playing making puzzles at 4:30 p.m. She stopped playing at 6:55 p.m. For how long did she play?

Demonstrate with clock as follows:




She played for 2 hours 25 minutes. **[Experiential Learning]**

## EVALUATE

**Classwork:** Ask to solve Q. 1 and 2 of Practice Time 10C and Q.1, 2 and 3 of Practice Time 10D. If students make any error, teacher will correct it and explain.

**Homework:** Ask to solve the remaining questions of Practice Time 10C and 10D.

## ENHANCE

- Discuss 'Quick Check' and 'Think and Answer' given on pages 179 and 180 respectively.

**[Logical and Critical Thinking]**

| Periods: 6–7 | Topic: Calendar, Writing Dates | Suggested extra teaching aids:<br>Calendar of current year<br>Math Genius! 3 pages 184–186 |
|---|---|---|

## ENGAGE

Start the class with an interaction from students. Ask some questions, such as: which year is going on? What day was yesterday? What day is today? At what day of a week, the school is closed? Tell the name of the days of the week. How many months are there in a year? What is the name of the month? Accept the responses.

## EXPLORE

Hang a calendar on the board.

Instruct students, to come one by one and mark their birthday on calendar.

Ask from the other students of the class to identify month and day of birthday? Accept the responses.

**[Experiential Learning]**

## EXPLAIN

A calendar is a chart, which shows days, dates, weeks and months in a year. One year has twelve months. There are 365 days in a year. Each month has 4 weeks. There are 7 days in a week. After every three years, a leap year comes, that has 366 days. In a leap year February has 29 days.

Further, explain that while writing dates, specify the number of the day in a month (that is, date), the name of the month and then the year.

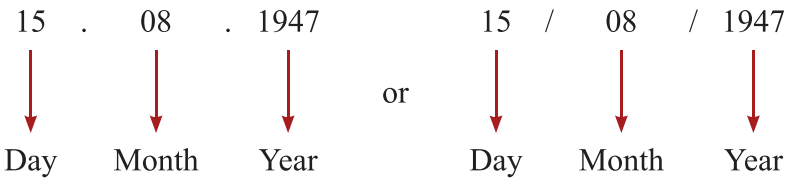
## ELABORATE

Demonstrate calendar of current year in the class, or show it on smartboard and present that

- A year is divided into 12 months; that is, a year has 365 days.
- January is the first month and December is the last month of the year.
- Some months have 30 days and some months have 31 days.
- February is a special month having only 28 or 29 days.
- January, March, May, July, August, October and December have 31 days.
- April, June, September and November has 30 days.
- Each month is divided into weeks and a week has seven days, namely, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday and Saturday.
- A leap year is the year in which the month of February has 29 days. It comes after every four years and has 366 days.

Also explain rules of a leap year.

Further demonstrate on board that we write a date as a group of three numbers separated by two dots (.) or slashes (/). The first number stands for the day, the second number for the month and the third number is the year. For example,




**[Conceptual Learning]**

## EVALUATE

**Classwork:** Ask to solve Q1 of Practice Time 10E, and Q1 of Practice Time 10F. If any student makes any error, the teacher will correct and explain.

**Homework:** Ask to solve Q2 of Practice Time 10E.

## ENHANCE

- Discuss the 'Maths Connect' given on page 186. **[Cross Circular Learning]**
- Ask to collect and paste images of calendar of current year, previous year and following year on a chart paper. Make a table to represent, number of days like Monday, Tuesday, … in each months of the year.

**[Experiential Learning]**

| Periods: 8–9 | Topic: Conversion of Units of Time, Timeline | Suggested extra teaching aids: A chart having cutout/images of some festivals<br>Math Genius! 3 pages 186–190 |
|---|---|---|

## ENGAGE

Ask from students what is the duration of your maths class in minutes? How many days they come to school? How many hours they spent on school? Accept the responses.

Introduce conversion of units of time and timeline.

## EXPLORE

Teacher will revise the topic calendar and motivate students toward timeline by using the following activity:

Distribute the class into 12 groups.

Either hang a chart having cut-outs/images of festivals or present it on smartboard.

Call one group, and ask them to write the date of festivals that comes in the first month of the year by using the calendar.

Next call another group and ask them to write the date of festivals that comes in the second month of the year by using the calendar.

The process will continue till all the months are covered. Now, name any five-six festivals randomly and instruct the groups to arrange them in order as per their time of celebration in the year. The group who will do their task in minimum time will be the winner. **[Experiential Learning]**

## EXPLAIN

Demonstrate on board the relationships between the units of time as follows:

1 hour = 60 minutes; 1 month = 30 days; 1 day = 24 hours; 1 year = 12 months

1 week = 7 days and 1 year = 365 days.

And use of these relationship in conversion of units of time.

In further period, discuss that a timeline shows the order or sequence in which some events happened. This helps us in understanding the sequence of events.

## ELABORATE

Demonstrate on board the examples in details given on page 187 of the book.

In further period, explain 'timeline' by using example of presidents of India given on pages 188 and 189.

Guide students to complete it. **[Conceptual Learning]**

## EVALUATE

**Classwork:** Ask to solve Q3 of Practice Time 10F. If any student makes any error, the teacher will correct and explain.

**Homework:** Ask to solve Q2 of Practice Time 10F and Q1 of Practice Time 10G.

## ENHANCE

- Discuss the 'Think and Answer' given on page 187. **[Critical Thinking]**

| Period: 10 | Topic: (Revision) Chapter Assessment | Suggested extra teaching aids: Math Genius! 3 pages 190–194 |
|---|---|---|

## ENGAGE

Make students comfortable, so they can ask any question on any previously taught topics in which they have any doubts or query. Have them engage in the activity as suggested in 'Learning by Doing' section.

## EXPLAIN

Start the revision of the exercise by using Encapsulate, Mental Maths, Chapter Assessment, Project and Brain Sizzlers.

## ELABORATE

Discuss questions 1 to 3 in the chapter assessment and accept students answer, if any confusion or error then explain and correct it. Discuss and motivate students to solve Mental Maths. Guide them to do the Project given on page 193.

## EVALUATE

**Classwork:** Discuss questions 4 to 6 of the Chapter Assessment and Brain Sizzlers.

**Homework:** Ask to solve Q.7 to 11 of Chapter Assessment.

## ENHANCE

Ask students to prepare a chart on 'timeline' on Prime Ministers of India, with the help of friends, teachers and parents. **[Cross Curricular Learning]**

ORANGE

# ASSIGNMENT–19

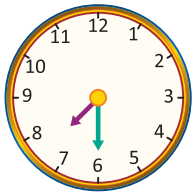
Marks Obtained: _____

Student's Name: _____ Section: _____

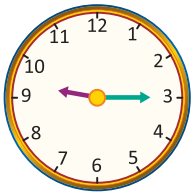
Roll Number: _____ Date: _____

**Identify the correct answer.**

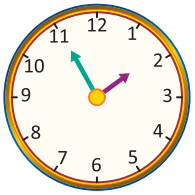
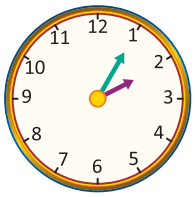
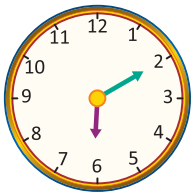
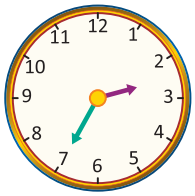
1. Sanjana went for shopping at 12:00 noon. She came back at 4:00 pm. How much time did Sanjana spend in shopping?
   (*a*) 3 hours (*b*) 2 hours (*c*) 4 hours (*d*) 1 hour
2. Ajay had been waiting at the railway station for 45 minutes. The train arrived at 5:00 pm. At what time did Ajay arrive at the railway station?
   (*a*) 4:30 p.m. (*b*) 5:45 p.m. (*c*) 4:45 p.m. (*d*) 4:15 p.m.
3. Amit is 6 years old on 13/12/2023. When was he born?
   (*a*) 13th Dec 2018 (*b*) 13th Dec 2019 (*c*) 13th Dec 2017 (*d*) 13th Dec 2016
4. Today is Sunday. What will be the day after 6 days from today?
   (*a*) Monday (*b*) Saturday (*c*) Tuesday (*d*) Wednesday
5. One and half hour in seconds is
   (*a*) 5400 seconds (*b*) 5500 seconds (*c*) 5000 seconds (*d*) 4800 seconds
6. Time shown by a clock is 1:15. It is also read as _____
   (*a*) Quarter past 1 (*b*) 45 minutes to 2 (*c*) 15 minutes to 1 (*d*) either (*a*) or (*b*)
7. The given clocks show the time in the evening at which Rohan starts and finishes his homework.



Starts homework



Finishes homework

   How long does he take to complete his homework?
   (*a*) 1 h 25 min (*b*) 1 h 30 min (*c*) 1 h 45 min (*d*) 2 h
8. Diya spent 28 days at summer camp. What is the total number of weeks she spent?
   (*a*) 4 (*b*) 2 (*c*) 5 (*d*) 8
9. Which clock shows a time between 2:15 P.M. and 3:00 P.M.?
   (*a*) 
   (*b*) 
   (*c*) 
   (*d*) 
10. The minute hand takes _____ minutes to move from 3 to 9.
    (*a*) 6 (*b*) 10 (*c*) 20 (*d*) 30

ORANGE

# ASSIGNMENT–20

Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

## A. Fill in the blanks.

1. The duration between 9:30 am and 11:00 am is ..... .
2. A quarter of an hour = ..... minutes.
3. The..... hand moves fastest in a clock.
4. The minute hand takes ..... minutes to move from 10 to 2.
5. The month with neither 31 days nor 30 days is ..... .

## B. Label True or False.

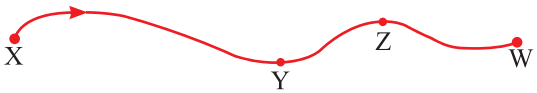
1. The minute hand moves 12 times round the clock in one day. .....
2. School opens at 7:30 a.m. every day except Sunday. .....
3. If today is Thursday, then Monday was the day before yesterday. .....
4. Avya was born on 29th February. Her birthday comes after every two years. .....
5. The second half of the day from moon to midnight is called p.m. .....

## C. Match the following.

| Column I | Column II |
|---|---|
| 1. Forty minutes to 11 in the morning | (*a*) 7:45 p.m. |
| 2. Forty-five minutes past 7 in the evening | (*b*) 10:20 a.m. |
| 3. Mid-day | (*c*) 7:45 a.m. |
| 4. Fifteen minutes to eight in the morning | (*d*) 9:20 p.m. |
| 5. Twenty minutes past 9 in the evening | (*e*) 12:00 noon |

## D. Utilise Your Brain.

At 11:00 a.m., Akshay boarded a train from Town X. The train took 2 hours 45 minutes to reach Town Y. The train took another 2 hours 15 minutes to travel from Town Y to Town Z. Akshay finally reached to Town W at 6:55 p.m.




How long did he take to travel from Town Z to Town W?



# 11 Money

## Learning Objectives

**After studying this chapter, students will be able to...**

- explore Indian coins and notes.
- understand conversion of rupees and paise.
- multiply and divide money.
- write money in words and figures.
- add and subtract money.
- know about bills.

# LESSON PLAN

**Suggested number of periods:** 8

**Suggested Teaching Aids:** Book: Math Genius! 3, blackboard or whiteboard, some dummy notes and coins of different denominations.

**Keywords:** Currency, notes, coins, rupees, paise, addition, subtraction, total amount, balance etc.

**Pre-requisite knowledge:** Students must be familiar with what currencies are used for, Indian currencies and its symbol, conversion of money, addition and subtraction of numbers, multiplication and division of numbers, etc.

**NEP feature:** The way of teaching provides experiential learning opportunities to the students and allows them to work with the support of each other which helps in their holistic development.

| Periods: 1–2 | Topic: Writing Money in Words and Figures, Conversion of Rupees and Paise | Suggested extra teaching aids: Some dummy notes and coins of different denominations. Math Genius! 3 pages 195–199 |
|---|---|---|

### ENGAGE

Show currency notes and coins of different denominations in the classroom. Instruct to identify them and write their values. Ask: How to write money into rupees and paise. Accept the responses. Discuss the concepts given on 'Get Ready' and 'Let's Recall' sections on pages 195 and 196.

### EXPLORE

Divide the class into pairs. Choose a pair of students randomly. Give few dummy currency notes and coins. Instruct each pair to take a currency of fixed denomination and collect coins of paise for the same amount. (one student will show the notes and the other student convert the value of currency note into paise by collecting the coins). Accept the responses. Observe them and help them if any pair want it. **[Experiential learning]**

### EXPLAIN

Money can be expressed in figures and words. We use a point (.) for separating rupees and paise. The number on the left side of the point shows rupees and the number on the right side of the point shows paise.

Further explain conversion of rupees and paise. To convert rupees into paise, we multiply the amount in rupees by 100. To convert rupees and paise into paise, we multiply the amount in rupees by 100 and then add paise to it. To convert paise into rupees and paise, we divide the number of paise by 100.

## ELABORATE

Demonstrate on board how to write amount in word and figure by taking references given on page 196 and 197.

Further explain on board 'conversion of rupees and paise' by taking references given on 197 and 198.

**[Conceptual learning]**

## EVALUATE

**Classwork:** Ask to solve Q1, 2 and 3 of Practice Time 11A.

**Homework:** Ask to solve the remaining questions of Practice Time 11A.

## ENHANCE

- Discuss 'Maths Connect' given on page 198.

| Periods: 3–4 | Topic: Addition and Subtraction of Money | Suggested extra teaching aids: Some Dummy Currency Notes and some Coins<br>Math Genius! 3 pages 200–202 |
|---|---|---|

## ENGAGE

Show some currency note of fixed denomination in the class, then add some more money to it. Instruct to class to count the total amount of money we have now. Also, remove a few amount from it and ask: How much amount we have now? Accept the responses.

Introduce addition and subtraction of money.

## EXPLORE

Divide the class into pairs. Choose a pair of students randomly. Give some dummy currency notes and coins to each of the student of the pair.

Instruct: Write the amount of money that you have on the board and add them.

Also, ask to find the difference of money they have. Accept the responses. Guide them in doing the sum.

**[Collaborative learning]**

## EXPLAIN

Addition and subtraction of money are carried out as usual addition and subtraction of numbers. Keep in mind, the value for rupees and paise differs by a '.' between them.

## ELABORATE

Demonstrate on board examples based on 'addition and subtraction of money' by taking references given on pages 201 and 202. **[Conceptual Learning]**

## EVALUATE

**Classwork:** Ask to solve Q1 and 2 of Practice Time 11B. If students make any error, teacher will correct it and explain.

**Homework:** Ask to solve Q3, 4, 5 and 6 of Practice Time 11B.

## ENHANCE

- Discuss and motivate to solve 'Think and Answer' given on page 201. **[Logical Thinking]**
- Ask to do Project work given on page 202. **[Creative Thinking]**

| Periods: 5–6 | Topic: Multiplication and division of money | Suggested extra teaching aids: Math Genius! 3 pages 202–204 |
|---|---|---|

## ENGAGE

Take a pencil and 10 notebooks of fixed amount. Ask: If cost of 1 pencil is ₹ 4, how much is cost of similar 11 pencils? If cost of 10 notebooks is ₹ 320, then how much is the cost of 1 notebook? Accept the responses. Introduce them about multiplication and division of money.

## EXPLORE

Divide the class into pairs. Choose a pair of students randomly. Instruct: pick out the maths book from the bag. Ask: To check the M.R.P of the book. What will be the cost of such 11 maths book? Similarly, ask to check M.R.P of crayon box, and cost of one crayon. Accept the responses and observe and guide them if students have any confusion. **[Collaborative Learning]**

## EXPLAIN

Multiplication and division of money are carried out as usual multiplication and division of numbers. For multiplication of decimal notation of money, remove decimal point and multiply and then replace the decimal point after two places from right. Similarly, in division divide the given amount by the given number, ignoring dot (.). Then, put a dot after the second digit counting from the right in the quotient.

## ELABORATE

Demonstrate on board examples based on 'multiplication and division of money' by taking references given on page 202 to 204. **[Conceptual Learning]**

## EVALUATE

**Classwork:** Solve Q1 (*a*), (*b*); Q2 (*a*), (*b*) and Q3 (*b*), (*c*) of Practice Time 11C. If any student makes any error, the teacher will correct and explain.

**Homework:** Ask to solve remaining questions of Practice Time 11C.

## ENHANCE

- Discuss and solve 'think and answer' given on page 203.
- Discuss 'Maths Connect' given on page 204.

| Period: 7 | Topic: Bills | Suggested extra teaching aids: Pieces of chart paper having images and price of some kid's items Math Genius! 3 page 205 |
|---|---|---|

## ENGAGE

Ask students, "When they go to market for shopping what they experience?" Accept the responses. Introduce the topic bills.

## EXPLORE

Divide the class into groups.

Distribute chart papers having images and price of some kid's items to each group. Ask to prepare a bill for items they want. Teacher will help the students in preparing the bill. **[Experiential Learning]**

## EXPLAIN

We go to market to buy various items like fruits, vegetables, clothes, toys, etc. in different quantity. The shopkeeper gives us articles and we make the payment to him for the total cost of these articles. The slip of paper on which the shopkeeper notes down or prints the requirements of customers or buyer and calculates the total cost of items purchased is called a BILL. In our daily life, we receive a variety of bills, for example telephone bill, cooking gas bill, water bill etc.

## ELABORATE

Take reference of page 205 to explain bills. Demonstrate the example on board.

## EVALUATE

**Classwork:** Discuss and solve question given in 11D in the classroom. If any student makes any error, the teacher will correct and explain.

**Homework:** Ask to do the activity given in 'Life Skills' on page 205 as a homework assignment.

## ENHANCE

- Ask students to collect all bills for all of their expenses for 1 week and discuss with their parents to control the unnecessary expenses and calculate how much money they can save weekly.

**[Social Emotional Learning]**

| Period: 8 | Topic: (Revision) Chapter Assessment | Suggested extra teaching aids: Math Genius! 3 pages 206–209 |
|---|---|---|

## ENGAGE

Make students comfortable, so they can ask any question on any previously taught topics in which they have confusion.

## EXPLAIN

Start the revision of the exercise by using Encapsulate, Maths Fun, Chapter Assessment, Mental Maths and Brain Sizzlers.

## ELABORATE

Ask to solve questions 1, 2 and 6 of the Chapter Assessment and accept students answer, if any confusion or error then explain and correct it. Discuss and motivate students to solve Mental Maths. Guide them to solve Brain Sizzler given on page 208.

## EVALUATE

**Classwork:** Ask to solve Q.3, 4, 5 of the Chapter Assessment.

**Homework:** Q.6 to 11 of Chapter Assessment and 'Mental Maths'.

## ENHANCE

Ask and guide students to do activity given on 'Learning by Doing' given on page 209.

**[Experiential and Collaborative Learning]**

ORANGE

# ASSIGNMENT–21

Marks Obtained: _____

Student's Name: _____ Section: _____

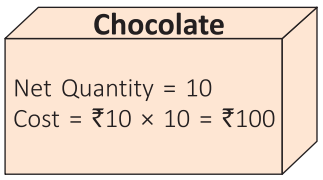
Roll Number: _____ Date: _____

**Identify the correct answer.**

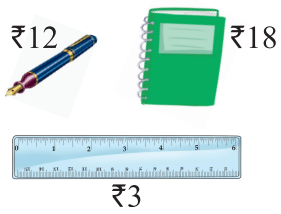
1. Peter has ₹19 more than what Tom has. If Peter has ₹74, then find the amount which Tom has?
   (*a*) ₹65 (*b*) ₹55 (*c*) ₹45 (*d*) ₹58
2. How many 25 p coins make ₹17.50?
   (*a*) 68 (*b*) 70 (*c*) 35 (*d*) 38
3. Which is more, eighteen 50 p coins or thirty-two 25 p coins and by how much?
   (*a*) eighteen 50 p coins, by ₹1
   (*b*) eighteen 50 p coins, by ₹1 and 50 p
   (*c*) thirty-two 25 p coins, by ₹1
   (*d*) thirty-two 25 p coins, by ₹1 and 50 p
4. The cost of 15 erasers is ₹45, the cost of 11 pencils is ₹55 and the cost of 5 pens is ₹65. Which one of the following is correct?
   (*a*) Cost of a pencil > cost of an eraser > cost of a pen
   (*b*) Cost of an eraser > cost of a pen > cost of a pencil
   (*c*) Cost of a pen > cost of a pencil > cost of an eraser
   (*d*) All of the above
5. What is the total cost of the following items?
   (*a*) ₹9350
   (*b*) ₹1310
   (*c*) ₹1450
   (*d*) ₹2131

| Item | Cost per kg | Bought |
|---|---|---|
| Apple | ₹45 | 5 kg |
| Orange | ₹35 | 7 kg |
| Rice | ₹84 | 10 kg |

6. Sumona buys 3 toys for ₹480. The cost of each toy is .....
   (*a*) ₹140 (*b*) ₹160 (*c*) ₹180 (*d*) ₹150
7. Given is the box of chocolates. Which of these can be found out from the information on it?




   (*a*) It contains 10 chocolates
   (*b*) Each chocolate costs ₹10.
   (*c*) Cost of 10 chocolates is ₹10.
   (*d*) Both (*a*) and (*b*)
8. Nani goes to the market with ₹20 and buys two of the following items. How much money will he be left with?




   (*a*) ₹2
   (*b*) ₹5
   (*c*) ₹10
   (*d*) ₹13
9. Raju bought five 75 paise stamps. How much did they cost him?
   (*a*) 2 rupees 25 paise (*b*) 1 rupee 50 paise (*c*) 3 rupees 75 paise (*d*) 4 rupees 50 paise
10. 650 p + ₹3 + 50 p = ..... p
    (*a*) 6535 (*b*) 1000 (*c*) 9500 (*d*) 1100

ORANGE

# ASSIGNMENT–22

Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

## A. Fill in the blanks.

1. 5 coins of ₹2 = one ₹..... note.
2. Six thousand eight hundred two rupees in numerals = ..... .
3. ₹20 – ₹13 and 75 p = ₹..... .
4. If the cost of 5 balls is ₹480, the cost of each ball is ..... .
5. ₹30 + ₹80 + ₹25 + ..... = ₹150.50.

## B. Label True or False.

1. ₹33.75 = ₹3 and 750 p ..... 
2. ₹94.50 = Ninety-four rupees five paise. .....
3. To convert rupees and paise into paise, we divide the amount in rupees by 100 and then add paise to it. .....
4. ₹102.75 + ₹225.25 = ₹328.00 .....
5. Five coins of one-rupee together = One ten-rupee coin. .....

## C. Match the following.

| Column I | Column II |
|---|---|
| 1. ₹5.50 + 25 paise | (*a*) ₹5.25 |
| 2. ₹5.75 – 50 paise | (*b*) ₹5.75 |
| 3. ₹5.25 + 75 paise | (*c*) ₹6 |
| 4. ₹5.75 + 10 paise | (*d*) ₹5.80 |
| 5. ₹5.90 – 10 paise | (*e*) ₹5.85 |

## D. Utilise Your Brain.

Nikhil went to watch a cricket match in the stadium. He had ₹800 with him and he paid ₹200 for the ticket and a cap for ₹50. Inside the stadium he bought a cold drink for ₹20. At the end of match, he donated ₹50 to the charity club maintained by stadium officials. How much money is left with Nikhil now?




# Data Handling

## Learning Objectives

**After studying this chapter, students will be able to...**

- understand tally marks.
- read, interpret and draw pictographs.
- Bar graph (interpret)

# LESSON PLAN

**Suggested number of periods:** 8

**Suggested Teaching Aids:** Book: Math Genius! 3, blackboard or whiteboard, etc.

**Keywords:** Data, collection, tally marks, pictograph, bar graph.

**Pre-requisite knowledge:** Students must be familiar with data and its collection to gather the information. Tabular form of data.

**NEP feature:** The way of teaching provides experiential learning opportunities to the students and allows them to work with the support of each other which helps in their holistic development.

| Periods: 1–2 | Topic: Tally Marks | Suggested extra teaching aids: Math Genius! 3 pages 210–212 |
|---|---|---|

## ENGAGE

Discuss the concept given on "Get Ready" and Introduce the topic by using the Q.1 and 2 of Let's Recall given on page 211. Introduce tally marks.

## EXPLORE

Write name of 5 favourite ice-cream flavours on board in a tabular form as follows:

| Favourite ice cream flavour | Tally marks | Number of students |
|---|---|---|
| Vanilla | | |
| Chocolate | | |
| Raspberry | | |
| Mango | | |
| Black currant | | |

Ask students one-by-one to come on board and mark a vertical line (|) in front of their favourite flavour. The teacher will introduce the rules for tally marks. Ask: How many of them like mango ice cream? Which flavour is liked by the most? Which flavour is liked by the least? Accept the responses. **[Experiential Learning]**

## EXPLAIN

When the data is represented in a tabular form with tally marks, that table is known as a tally chart. The general way of writing tally marks is as a group or set of five lines. The first four lines are drawn vertically and each of the fifth line runs diagonally over the previous four vertical lines, i.e. from the top of the first line to the bottom of the fourth line, such as 𝍸.

## ELABORATE

Demonstrate the example on board by using the references given on pages 211 and 212 of the book.

**[Conceptual Learning]**

## EVALUATE

**Classwork:** Ask to solve question 1 of Practice Time 12A. If any student make any error, the teacher will correct it and explain.

**Homework:** Ask to create a tally mark chart on data given on Q.2 of Let's Recall and answer the questions.

## ENHANCE

- Ask to do the Project given on page 212.

| Periods: 3–4 | Topic: Pictograph | Suggested extra teaching aids: Math Genius! 3 pages 212–216 |
|---|---|---|

## ENGAGE

Introduce that we can also represent data by using a pictorial representation. Use the data given under the topic 'Tally Marks' and present it as pictograph.

## EXPLORE

Divide the class into groups. Instruct them to collect information about the favourite games of their classmates and draw a pictograph under the guidance of the teacher on the board for the collected data.

Ask question based on pictograph like: How many children like football? Which game do they like least? Which game do they like most? Accept the responses.

## EXPLAIN

When we use pictures or symbols to represent information, we call it pictorial representation or pictograph of the given information.

A pictograph helps us to compare information.

Every pictograph must have the following:

- **Title:** The title tells us what information the pictograph gives.
- **Key:** The key tells us the meaning and the value of the picture or symbol.

## ELABORATE

Demonstrate examples of drawing, reading and interpreting pictographs on board using the references given in pages 212–214. **[Conceptual Learning]**

## EVALUATE

**Classwork:** Ask to do Q. 2 and 4 of Practice Time 12A. If students make any error, teacher will correct it and explain.

**Homework:** Ask to solve the remaining questions of Practice Time 12A.

## ENHANCE

- Discuss and motivate to solve 'Maths Fun' and 'Brain Sizzlers' given on pages 214 and 219 respectively.

**[Critical Thinking]**

| Periods: 5–6 | Topic: Bar Graph | Suggested extra teaching aids: Math Genius! 3 pages 216–218 |
|---|---|---|

## ENGAGE

Call two students from the class and ask them to collect the data within the class about favourite fruits of all students. Accept the responses. Introduce bar graph.

## EXPLORE

Divide the class into groups. Instruct each group to collect the data within the class about favourite fruits, favourite sweets or favourite subjects, etc. of each student. Accept the responses and instruct each group to represent the collected data in tally chart/pictograph/ bar graph on a paper sheet/board.

Ask: How many children like a particular fruit/sweet/subject the most? Which fruit/sweet/subject do they like least? Accept the responses. **[Experimental Learning]**

## EXPLAIN

We can also represent data using rectangular bars of equal width. This visual representation is called the bar graph. A bar graph also helps us to compare information.

## ELABORATE

Demonstrate interpretation of bar graph using the example given on pages no. 216 and 217 of the book.

**[Conceptual Learning]**

## EVALUATE

**Classwork:** Ask to do Q.1 of Practice Time 12B. If any student makes any error, the teacher will correct and explain.

**Homework:** Ask to do the remaining questions of Practice Time 12B.

## ENHANCE

- Ask to do the question given in 'Mental Maths' given on page 218. **[Creative Thinking]**

| Periods: 7–8 | Topic: (Revision) Chapter Assessment | Suggested extra teaching aids: Math Genius! 3 pages 219–222 |
|---|---|---|

## ENGAGE

Make students comfortable, so they can ask any question on any previously taught topics in which they have any confusion.

## EXPLAIN

Start the revision of the exercise by using Encapsulate and Chapter Assessment.

## ELABORATE

Discuss and ask to do questions 1 and 2 of the Chapter Assessment and accept students answer. If any confusion or error then explain and correct it. Guide them to perform the activity given in Learning by Doing on page 222.

## EVALUATE

**Classwork:** Discuss questions 1 to 3 of the chapter assessment in the classroom.

**Homework:** Ask to solve Q.4 of Chapter Assessment given.

## ENHANCE

- Ask to watch the video on data handling on "www.fullmarksonline.com". **[Tech Connect]**

ORANGE

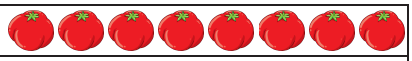
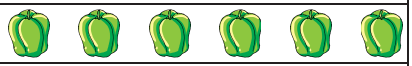
# ASSIGNMENT–23

Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

**A. The given pictograph shows the vegetables grown in a farm. Study the graph and analyse the answer to identify the correct option.**

| | |
|---|---|
| Tomato |  |
| Brinjal |  |
| Capsicum |  |
| Carrot |  |
| Potato |  |

**1.** Which kind of vegetable is maximum in number?

(*a*) Carrot (*b*) Brinjal

(*c*) Capsicum (*d*) Tomato

**2.** What is the total number of vegetables?

(*a*) 32 (*b*) 35

(*c*) 33 (*d*) 34

**3.** How many more tomatoes are there than brinjals?

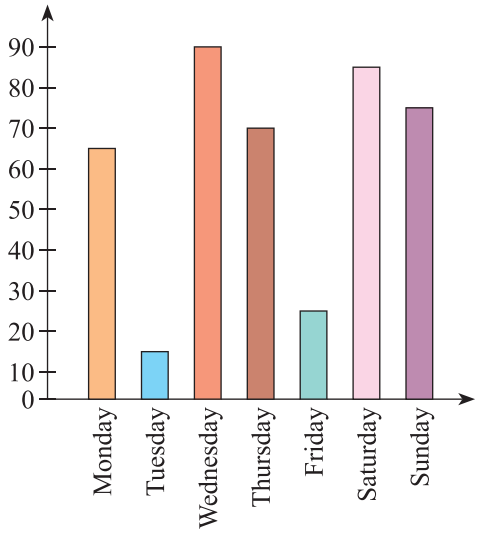
(*a*) 2 (*b*) 5

(*c*) 3 (*d*) 4

**4.** How many capsicums are there?

(*a*) 6 (*b*) 7 (*c*) 8 (*d*) 9

**B. The given bar graph shows the amount of money spent by Amit in a week. Study the graph and analyse the answer to identify the correct option.**



**5.** How much more amount Amit spent on Thursday than on Tuesday?

(*a*) ₹50 (*b*) ₹55

(*c*) ₹60 (*d*) ₹70

**6.** On which day Amit spent ₹65?

(*a*) Monday (*b*) Thursday

(*c*) Saturday (*d*) Wednesday

**7.** Find the amount of money spent by Amit on Sunday.

(*a*) ₹70 (*b*) ₹85

(*c*) ₹75 (*d*) ₹80

**8.** How much less amount Amit spent on Friday than on Wednesday?

(*a*) ₹65 (*b*) ₹60

(*c*) ₹70 (*d*) ₹75

**9.** Find the total number of tigers in the given figure. [if 1  = 6 tigers]



(*a*) 24 (*b*) 80

(*c*) 48 (*d*) 40

**10.** If Symbol 𝍸 represents 5 number of observations then 𝍸 𝍸 𝍸 𝍸 𝍸 will represent _____

(*a*) 25 (*b*) 20

(*c*) 5 (*d*) 30

ORANGE

# ASSIGNMENT–24

Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

**A. The given pictograph shows the number of students who were absent in a day of a particular week. Study the graph and analyse the answer to identify the correct option.**

| | |
|---|---|
| Monday | ☺☺☺ |
| Tuesday | ☺☺☺☺ |
| Wednesday | ☺☺ |
| Thursday | ☺☺☺☺ |
| Friday | ☺☺☺☺☺ |
| Saturday | — |
| Each ☺ means 2 students | |

**1.** On which day no student was absent?

(*a*) Saturday (*b*) Friday (*c*) Monday (*d*) Tuesday

**2.** On which day maximum number of students were absent and how many?

(*a*) Thursday, 10 (*b*) Friday, 10 (*c*) Monday, 10 (*d*) Wednesday, 10

**3.** What is the total number of students who were absent in the week?

(*a*) 34 (*b*) 36 (*c*) 38 (*d*) 33

**B. Sonam went to a bird sanctuary and saw the different types of birds. Study the graph and analyse the answer to identify the correct option.**

| Type of Birds | Number of Birds Sonam saw |
|---|---|
| Blue tit | 🐦🐦🐦🐦 |
| Blackbird | 🐦🐦🐦🐦🐦 |
| Sparrow | 🐦🐦🐦🐦🐦🐦🐦🐦 |
| Starling | 🐦🐦🐦🐦🐦 |
| Seagull | 🐦🐦🐦🐦🐦🐦🐦 |
| Pigeon | 🐦🐦🐦 |
| Each 🐦 = 5 birds | |

**4.** How many sparrows did Sonam saw?

(*a*) 35

(*b*) 40

(*c*) 50

(*d*) 45

**5.** How many blue tits and pigeons were seen by Sonam?

(*a*) 40 (*b*) 30

(*c*) 35 (*d*) 42

**6.** How many more seagulls were seen by Sonam than the blackbirds?

(*a*) 2 (*b*) 8

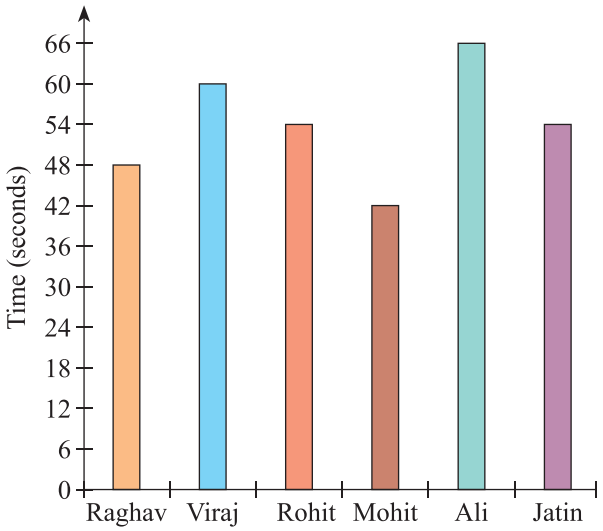
(*c*) 10 (*d*) 12

**7.** How many starlings were seen by Sonam?

(*a*) 5 (*b*) 15

(*c*) 20 (*d*) 25

**C. The given bar graph shows the time taken by 6 competitors to run a 200 m race. Study the graph and analyse the answer to identify the correct option.**




**8.** Who completed the race before Ali but after Jatin?

(*a*) Raghav (*b*) Rohit

(*c*) Viraj (*d*) Jatin

**9.** Who took time more than 42 seconds but less than 50 seconds?

(*a*) Raghav (*b*) Ali

(*c*) Jatin (*d*) Mohit

**10.** What is the difference between the maximum time and minimum time taken by runners to complete the race?

(*a*) 22 seconds (*b*) 24 seconds

(*c*) 26 seconds (*d*) 20 seconds

# ANSWERS OF THE ASSIGNMENTS

## ASSIGNMENT-1

**1.** (*b*) **2.** (*a*) **3.** (*a*) **4.** (*c*) **5.** (*a*)
**6.** (*d*) **7.** (*b*) **8.** (*b*) **9.** (*c*) **10.** (*d*)
**11.** (*c*) **12.** (*b*)

## ASSIGNMENT-2

**A. 1.** 2, 1 **2.** even **3.** abacus, 9 **4.** odd **5.** 3,838
**B. 1.** False **2.** False **3.** True **4.** False **5.** False
**C. 1.** (*e*) **2.** (*c*) **3.** (*d*) **4.** (*b*) **5.** (*a*)
**D. 1.** (*e*) **2.** (*d*) **3.** (*a*) **4.** (*b*) **5.** (*c*)
**E.** 7211

## ASSIGNMENT-3

**1.** (*c*) **2.** (*a*) **3.** (*d*) **4.** (*a*) **5.** (*d*)
**6.** (*b*) **7.** (*d*) **8.** (*c*) **9.** (*d*) **10.** (*c*)

## ASSIGNMENT-4

**A. 1.** 201 **2.** 6741 **3.** 9709 **4.** 624 **5.** 371
**B. 1.** False **2.** True **3.** True **4.** True **5.** False
**C. 1.** (*b*) **2.** (*e*) **3.** (*a*) **4.** (*c*) **5.** (*d*)
**D.** 4500

## ASSIGNMENT-5

**1.** (*b*) **2.** (*d*) **3.** (*a*) **4.** (*b*) **5.** (*c*)
**6.** (*a*) **7.** (*a*) **8.** (*b*) **9.** (*c*) **10.** (*d*)

## ASSIGNMENT-6

**A. 1.** 6690 **2.** 756 **3.** 1244 **4.** 3100 **5.** 4
**B. 1.** False **2.** False **3.** True **4.** False **5.** True
**C. 1.** (*e*) **2.** (*c*) **3.** (*d*) **4.** (*a*) **5.** (*b*)
**D.** 57

## ASSIGNMENT-7

**1.** (*a*) **2.** (*b*) **3.** (*d*) **4.** (*c*) **5.** (*b*)
**6.** (a) **7.** (*d*) **8.** (*b*) **9.** (*b*) **10.** (*b*)

## ASSIGNMENT-8

**A. 1.** zeros **2.** 9 **3.** 600 **4.** end **5.** 0
**B. 1.** False **2.** False **3.** True **4.** False **5.** True
**C. 1.** (*d*) **2.** (*c*) **3.** (*b*) **4.** (*e*) **5.** (*a*)
**D.** Weight of a mature oak tree = $2 \times 10 + 1 = 21$ m
and that of redwood tree = $10 \times 10 = 100$ m
Clearly, $21 \times 5 = 105 \neq 100$. No

## ASSIGNMENT-9

**1.** (*c*) **2.** (*b*) **3.** (*a*) **4.** (*b*) **5.** (*d*)
**6.** (*b*) **7.** (*c*) **8.** (*c*) **9.** (*b*) **10.** (*c*)

## ASSIGNMENT-10

**A. 1.** 329 **2.** 0 **3.** 57, 6 **4.** 15 **5.** 84
**B. 1.** False **2.** False **3.** True **4.** False **5.** False
**C. 1.** (*d*) **2.** (*e*) **3.** (*b*) **4.** (*c*) **5.** (*a*)
**D.** 17

## ASSIGNMENT-11

**1.** (*a*) **2.** (*c*) **3.** (*b*) **4.** (*c*) **5.** (*d*)
**6.** (*b*) **7.** (*b*) **8.** (*a*) **9.** (*a*) **10.** (*a*)

## ASSIGNMENT-12

**A. 1.** 4 **2.** 5 **3.** 3 **4.** $\frac{3}{4}$ **5.** $\frac{1}{3}$
**B. 1.** True **2.** False **3.** False **4.** False **5.** True
**C. 1.** (*b*) **2.** (*d*) **3.** (*a*) **4.** (*c*)
**D.** Tanya

## ASSIGNMENT-13

**1.** (*c*) **2.** (*b*) **3.** (*d*) **4.** (*c*) **5.** (*c*)
**6.** (*a*) **7.** (*c*) **8.** (*d*) **9.** (*d*) **10.** (*a*)

## ASSIGNMENT-14

**A. 1.** 6, 12, 8 **2.** cylinder, one
**3.** Rectangle
**4.** It has 3 dimensions – length, breadth and height
**5.** cube/cuboid
**B. 1.** True **2.** False **3.** False **4.** True **5.** False
**C. 1.** (*b*) **2.** (*d*) **3.** (*a*) **4.** (*e*) **5.** (*c*)
**D.** 1. 125 **2.** Line segment

## ASSIGNMENT-15

**1.** (*a*) **2.** (*c*) **3.** (*b*) **4.** (*c*) **5.** (*c*)
**6.** (*b*) **7.** (*c*) **8.** (*b*) **9.** (*b*) **10.** (*a*)

## ASSIGNMENT-16

**A. 1.** line **2.** no 3. EF, 56 **4.**  **5.** 141,151
**B. 1.** False **2.** True **3.** False **4.** False **5.** False
**C. 1.** (*e*) **2.** (*b*) **3.** (*d*) **4.** (*c*) **5.** (*a*)
**D.** 24 cm

## ASSIGNMENT-17

**1.** (*c*) **2.** (*a*) **3.** (*c*) **4.** (*c*) **5.** (*a*)
**6.** (*d*) **7.** (*c*) **8.** (*b*) **9.** (*b*) **10.** (*c*)

## ASSIGNMENT-18

**A. 1.** 1000 **2.** 7, 725 **3.** mass **4.** mL **5.** 10, 442
**B. 1.** False **2.** False **3.** False **4.** False **5.** False
**C. 1.** (*d*) **2.** (*e*) **3.** (*b*) **4.** (*a*) **5.** (*c*)
**D.** 800 m

## ASSIGNMENT-19

**1.** (*c*) **2.** (*d*) **3.** (*c*) **4.** (*b*) **5.** (*a*)
**6.** (*d*) **7.** (*c*) **8.** (*a*) **9.** (*d*) **10.** (*d*)

## ASSIGNMENT-20

**A. 1.** 1 h 30 min **2.** 15 **3.** second **4.** 20
**5.** February
**B. 1.** False **2.** True **3.** False **4.** False **5.** True
**C. 1.** (*b*) **2.** (*a*) **3.** (*e*) **4.** (*c*) **5.** (*d*)
**D.** 2 h 55 min

## ASSIGNMENT-21

**1.** (*b*) **2.** (*b*) **3.** (*a*) **4.** (*c*) **5.** (*b*)
**6.** (*b*) **7.** (*d*) **8.** (*b*) **9.** (*c*) **10.** (*b*)

## ASSIGNMENT-22

**A. 1.** 10 **2.** ₹6802 **3.** ₹6.25 **4.** ₹96 **5.** ₹15.50
**B. 1.** False **2.** False **3.** False **4.** True **5.** False
**C. 1.** (*b*) **2.** (*a*) **3.** (*c*) **4.** (*e*) **5.** (*d*)
**D.** ₹480

## ASSIGNMENT-23

**1.** (*a*) **2.** (*b*) **3.** (*c*) **4.** (*a*) **5.** (*b*)
**6.** (*a*) **7.** (*c*) **8.** (*a*) **9.** (*c*) **10.** (*a*)

## ASSIGNMENT-24

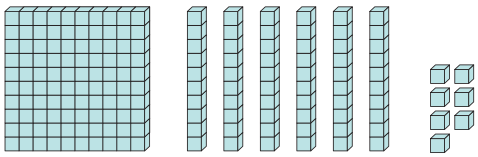
**1.** (*a*) **2.** (*b*) **3.** (*b*) **4.** (*b*) **5.** (*c*)
**6.** (*c*) **7.** (*d*) **8.** (*c*) **9.** (*a*) **10.** (*b*)

# DETAILED SOLUTIONS

## CHAPTER 1 : NUMBERS UP TO 9999

### Let's Recall

**1.**



100 + 60 + 7 = 1 6 7 (H T O)

**2.** 998 = Nine hundred ninety-eight.

**3.** 768 = 7 hundreds and 6 tens.

**4.** (*a*) 10 ones = 1 ten (*b*) 10 tens = 1 hundred

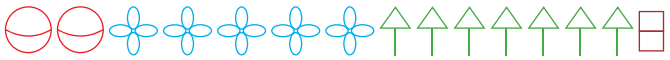
(*c*) 1 hundred = 100 ones.

(*d*) The smallest 3-digit number is 100.

(*e*) Smallest three digit number = 100

Predecessor of 100 = 100 – 1 = 99

### Think and Answer (Page 11)



### Practice Time 1A

**1.** (*a*)

| Th | H | T | O |
|---|---|---|---|
| 1 | 4 | 5 | 5 |

(*b*)

| Th | H | T | O |
|---|---|---|---|
| 2 | 0 | 3 | 3 |

(*c*)

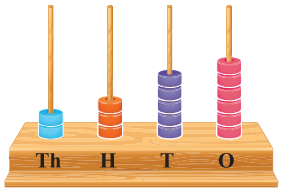
| Th | H | T | O |
|---|---|---|---|
| 3 | 2 | 1 | 4 |

(*d*)

| Th | H | T | O |
|---|---|---|---|
| 6 | 4 | 8 | 0 |

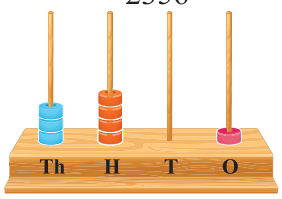
**2.** (*a*) 5057 (*b*) 4102 (*c*) 3676

**3.** (*a*)



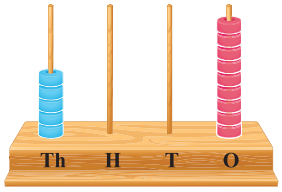

2356

(*b*)




3401

(*c*)




5009

**4.** (*a*) 1,358 = One thousand three hundred fifty-eight.

(*b*) 2,643 = Two thousand six hundred forty-three.

(*c*) 7,005 = Seven thousand five.

(*d*) 9,700 = Nine thousand seven hundred.

**5.** (*a*) Two thousand one hundred sixty-eight = 2,168

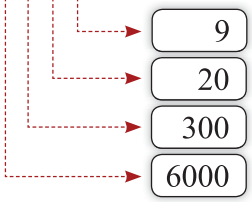
(*b*) Four thousand ninety-nine = 4,099

(*c*) Six thousand four hundred eleven = 6,411

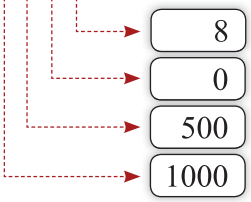
(*d*) Five thousand six hundred = 5,600

### Practice Time 1B

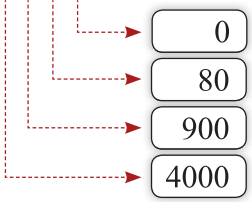
**1.** (*a*) 6 3 2 9




(*b*) 1 5 0 8




(*c*) 4 9 8 0




**2.** (*a*) 1234

Face value: 3

Place value: 30

(*b*) 7851

Face value: 8

Place value: 800

(*c*) 9802

Face value: 9

Place value: 9000

**3.** (*a*) 6,375 = 6000 + 300 + 70 + 5

(*b*) 5,082 = 5000 + 0 + 80 + 2

(*c*) 8,421 = 8 thousands + 4 hundreds + 2 tens + 1 one

(*d*) 4,095 = 4 thousands + 0 hundreds + 9 tens + 5 ones

**4.** (*a*) 3914 = 3000 + 900 + 10 + 4

(*b*) 4590 = 4000 + 500 + 90 + 0

(*c*) 2605 = 2000 + 600 + 0 + 5

(*d*) 7002 = 7000 + 0 + 0 + 2

**5.** (*a*) 4000 + 800 + 30 + 2 = 4,832

(*b*) 7000 + 500 + 4 = 7,504

(*c*) 5 thousands + 6 hundreds + 1 ten + 7 ones = 5,617

(*d*) 9 thousands + 6 tens + 3 ones = 9,063

## Practice Time 1C

**1.** (*a*) 524 < 2,193 (*b*) 7,329 > 3,279
(*c*) 8,028 < 8,208 (*d*) 2,613 < 2,631
(*e*) 9,162 > 9,126 (*f*) 9,325 = 9,325

**2.** (*a*) Smallest number = 2,513
Greatest number = 7,346
(*b*) Smallest number = 2,015
Greatest number = 7,116
(*c*) Smallest number = 5,039
Greatest number = 8,611
(*d*) Smallest number = 5,001
Greatest number = 5,101

**3.** (*a*) 6873 > 6738 > 6387 > 6378
(*b*) 8132 > 7093 > 3506 > 239
(*c*) 3548 > 3458 > 1320 > 1023
(*d*) 6985 > 6895 > 6598 > 6589

4. (*a*) 5146 < 5346 < 5446 < 5846
(*b*) 857 < 8275 < 8725 < 9814
(*c*) 9037 < 9073 < 9307 < 9703
(*d*) 267 < 967 < 2679 < 9672

## Practice Time 1D

**1.**

| | Digits | Greatest 4-digit number | Smallest 4-digit number |
|---|---|---|---|
| (*a*) | 3, 7, 1, 9 | 9,731 | 1,379 |
| (*b*) | 9, 8, 4, 2 | 9,842 | 2,489 |
| (*c*) | 5, 7, 1, 0 | 7,510 | 1,057 |
| (*d*) | 4, 7, 9, 7 | 9,774 | 4,779 |
| (*e*) | 0, 3, 6, 2 | 6,320 | 2,036 |

**2.** (*a*) 4 thousands + 8 hundreds + 5 tens + 2 ones = 4,852
(*b*) 9 thousands + 1 hundred + 0 tens + 6 ones = 9,106

## Practice Time 1E

**1.**

| | Predecessor | Number | Successor |
|---|---|---|---|
| (*a*) | 5,671 | 5,672 | 5,673 |
| (*b*) | 8,790 | 8,791 | 8,792 |
| (*c*) | 998 | 999 | 1,000 |
| (*d*) | 4,039 | 4,040 | 4,041 |
| (*e*) | 4,989 | 4,990 | 4,991 |

**2.** Even numbers = 4628, 7132, 6000, 3784, 5828, 1116, 1358, 1000
Odd numbers = 2371, 8903, 3925, 8143, 9465, 2047, 9999

**3.** (*a*) Even numbers between 402 and 409 = 404, 406, 408
(*b*) Even numbers between 1,023 and 1,029 = 1,024, 1,026, 1,028
(*c*) Even numbers between 2,448 and 2,456 = 2,450, 2,452, 2,454

**4.** (*a*) Odd numbers between 111 and 119 = 113, 115, 117
(*b*) Odd numbers between 1,031 and 1,038 = 1,033, 1,035, 1,037
(*c*) Odd numbers between 4,444 and 4,450 = 4,445, 4,447, 4,449

## Practice Time 1F

**1.** (*a*) 50 56 60. (*b*) 70 72 80. (*c*) 40 44 50.
(*d*) 80 89 90. (*e*) 100 106 110.

**2.** (*a*) 17 $\xrightarrow{\text{nearest tens}}$ 20
(*b*) 36 $\xrightarrow{\text{nearest tens}}$ 40
(*c*) 93 $\xrightarrow{\text{nearest tens}}$ 90
(*d*) 26 $\xrightarrow{\text{nearest tens}}$ 30
(*e*) 45 $\xrightarrow{\text{nearest tens}}$ 50
(*f*) 51 $\xrightarrow{\text{nearest tens}}$ 50
(*g*) 39 $\xrightarrow{\text{nearest tens}}$ 40
(*h*) 64 $\xrightarrow{\text{nearest tens}}$ 60
(*i*) 78 $\xrightarrow{\text{nearest tens}}$ 80
(*j*) 82 $\xrightarrow{\text{nearest tens}}$ 80

**3.** 4 numbers round up to 80 = 76, 77, 78 and 79

**4.** 4 numbers round down to 100 = 101, 102, 103 and 104

## Practice Time 1G

**1.** (*a*) 16 = XVI (*b*) 25 = XXV
(*c*) 39 = XXXIX (*d*) 27 = XXVII

**2.** (*a*) XVIII = 18 (*b*) XXIX = 29
(*c*) XXXVII = 37 (*d*) XXXIV = 34

**3.** (*a*) The Roman numeral for 26 is XXVI.
(*b*) The successor of XXX is XXXI.
(*c*) The predecessor of 20 in Roman numeral is XIX.
(*d*) The greatest 1-digit number in Roman numeral is IX.
(*e*) When we add V to X and then subtract I from the number, we get XIV.
V + X – I = 5 + 10 – 1= 15 – 1 = 14, *i.e.*, XIV

## Chapter Assessment

**1.** (*a*) — (*iv*) The place value of the digit 8 in 5869 is 800.
Hence, option (*iv*) is correct.
(*b*) — (*iii*) 4739 because its tens place digit is 3 which is greater than 2.
Hence, option (*iii*) is correct.
(*c*) — (*iv*) The greatest 3-digit number formed using the digit 0, 1 and 2 is 210.
Hence, option (*iv*) is correct.
(*d*) — (*i*) Number = 4507, Face value = 7, Place value = 7
The face value of coloured digit = Place Value of coloured digit.
$\therefore$ 7 = 7
Hence, option (*i*) is correct.
(*e*) — (*iii*) Smallest 4-digit number = 1000
Predecessor of 1000 = 1000 – 1 = 999
Hence, option (*iii*) is correct.
(*f*) — (*ii*) Arrange the numbers in place value chart.
5000 + 700 + 10 + 3 = 5713
Hence, option (*ii*) is correct.
(*g*) — (*ii*) 7304 = 7000 + 300 + 4
Hence, option (*ii*) is correct.

**2.** (*a*) The even number after four thousand fourteen is 4016.
(*b*) The smallest 4-digit number using all the digits 9, 3, 0 and 2 is 2039.
(*c*) The successor of 1999 is 2000.
(*d*) The odd number just after the successor of 3019 is 3021.
(*e*) The greatest 4-digit even number is 9998.
(*f*) 8 thousands + 5 tens + 4 ones = 8054.
(*g*) 14 tens = 14 × 10 = 140 ones.

**3.** (*a*) 1213 = One thousand two hundred thirteen.
(*b*) 8925 = Eight thousand nine hundred twenty-five.
(*c*) 8888 = Eight thousand eight hundred eighty-eight.
(*d*) 2023 = Two thousand twenty-three.

**4.** (*a*) Eight thousand five hundred thirty-eight = 8,538
(*b*) Nine thousand eight hundred = 9,800

**5.** (*a*) The number is 7652.
Place value of coloured digit = 600
(*b*) The number is 8945.
Place value of coloured digit = 8000
(*c*) The number is 5076.
Place value of coloured digit = 70

**6.** (*a*) 3860 [ > ] 3680 (*b*) 4885 [ > ] 4566
(*c*) 8088 [ < ] 8808

**7.** (*a*) Ascending order = 5008 < 5080 < 5088 < 5800
Descending order = 5800 > 5088 > 5080 > 5008
(*b*) Ascending order = 7071 < 7107 < 7170 < 7701
Descending order = 7701 > 7170 > 7107 > 7071

**8.** The place value and face value of 0 is always the same.

**9.** (*a*) 259 and 89 are the numbers with 9 in the ones place.
(*b*) 619 and 19 are the numbers with 1 in the tens place.
(*c*) 8561 and 3572 are the numbers with 5 in the hundreds place.

**10.** Thousands place is between 6 and 8 = 7
Hundreds place is successor of 2 = 3
Tens place is 3 less than the hundreds place = 0
Ones place is predecessor of 5 = 4
Hence, the number is 7304.

**11.**

| | Predecessor | Number | Successor |
|---|---|---|---|
| (*a*) | XXIII | XXIV | XXV |
| (*b*) | XXXVI | XXXVII | XXXVIII |
| (*c*) | IX | X | XI |
| (*d*) | XIV | XV | XVI |

## Brain Sizzlers (Page 27)

Tens digit is an even number between 3 and 6 = 4
Hundreds place is greatest 1-digit even number = 8
Thousands place is smallest 1-digit = 1
Ones place is half of hundreds place = 4
The four digit number is 1,844.

## Mental Maths (Page 27)

**1.** The four digit number = 5555
The place value of all the digits is 5.

**2.** Predecessor of the odd number just before 7088 = 7088 – 1 = 7087
The number before 7087 is 7086.

**3.** Place value of 6 in the number 2065 = 60
Face value of 6 in the number 2065 = 6
Difference between place value and face value = 60 – 6 = 54

**4.** Odd numbers between 3,110 and 3,120 = 3111, 3113, 3115, 3117, 3119

# CHAPTER 2 : ADDITION

## Let's Recall

**1.** (*a*)

| H | T | O |
|---|---|---|
| (1) | | |
| | 8 | 5 |
| + | 4 | 3 |
| 1 | 2 | 8 |

(*b*)

| H | T | O |
|---|---|---|
| (1) | | |
| 6 | 4 | 6 |
| + 2 | 7 | 1 |
| 9 | 1 | 7 |

(*c*)

| H | T | O |
|---|---|---|
| 4 | 2 | 1 |
| + | 6 | 4 |
| 4 | 8 | 5 |

(*d*)

| H | T | O |
|---|---|---|
| (1) | | |
| | 8 | 0 |
| + 2 | 5 | 9 |
| 3 | 3 | 9 |

**2.** Total number of plants planted by the school this year = 452 + 89 = 541.

## Practice Time 2A

**1.** (*a*)

| H | T | O |
|---|---|---|
| 2 | 1 | 7 |
| + 3 | 4 | 2 |
| 5 | 5 | 9 |

(*b*)

| H | T | O |
|---|---|---|
| 4 | 8 | 7 |
| + 1 | 1 | 1 |
| 5 | 9 | 8 |

(*c*)

| H | T | O |
|---|---|---|
| 5 | 5 | 5 |
| + 1 | 3 | 1 |
| 6 | 8 | 6 |

(*d*)

| H | T | O |
|---|---|---|
| 2 | 3 | 4 |
| + 5 | 1 | 1 |
| 7 | 4 | 5 |

**2.** (*a*) 217 + 562
Arrange the numbers in columns.

| H | T | O |
|---|---|---|
| 2 | 1 | 7 |
| + 5 | 6 | 2 |
| 7 | 7 | 9 |

(*b*) 481 + 318
Arrange the numbers in columns.

| H | T | O |
|---|---|---|
| 4 | 8 | 1 |
| + 3 | 1 | 8 |
| 7 | 9 | 9 |

(*c*) 645 + 152
Arrange the numbers in columns.

| H | T | O |
|---|---|---|
| 6 | 4 | 5 |
| + 1 | 5 | 2 |
| 7 | 9 | 7 |

(*d*) 516 + 273
Arrange the numbers in columns.

| H | T | O |
|---|---|---|
| 5 | 1 | 6 |
| + 2 | 7 | 3 |
| 7 | 8 | 9 |

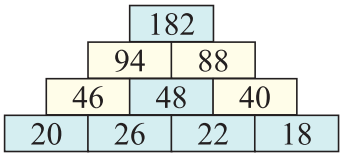
(*e*) 424 + 263
Arrange the numbers in columns.

| H | T | O |
|---|---|---|
| 4 | 2 | 4 |
| + 2 | 6 | 3 |
| 6 | 8 | 7 |

(*f*) 385 + 512
Arrange the numbers in columns.

| H | T | O |
|---|---|---|
| 3 | 8 | 5 |
| + 5 | 1 | 2 |
| 8 | 9 | 7 |

## Think and Answer (Page 35)




## Practice Time 2B

**1.** (*a*) Grouping = ones place

| H | T | O |
|---|---|---|
| | (1) | |
| 7 | 0 | 9 |
| + 1 | 0 | 4 |
| 8 | 1 | 3 |

(*b*) Regrouping = tens place

| H | T | O |
|---|---|---|
| (1) | | |
| 5 | 2 | 3 |
| + 1 | 8 | 3 |
| 7 | 0 | 6 |

(*c*) Regrouping = ones and tens places

| H | T | O |
|---|---|---|
| (1) | (1) | |
| 7 | 8 | 5 |
| + 1 | 1 | 5 |
| 9 | 0 | 0 |

**2.** (*a*)

| H | T | O |
|---|---|---|
| | (1) | |
| 2 | 4 | 7 |
| + 3 | 3 | 5 |
| 5 | 8 | 2 |

(*b*)

| H | T | O |
|---|---|---|
| (1) | (1) | |
| 5 | 4 | 9 |
| + 3 | 6 | 4 |
| 9 | 1 | 3 |

(*c*)

| H | T | O |
|---|---|---|
| (1) | | |
| 3 | 5 | 8 |
| + 2 | 7 | 0 |
| 6 | 2 | 8 |

(*d*)

| Th | H | T | O |
|---|---|---|---|
| (1) | (1) | (1) | |
| | 5 | 6 | 4 |
| + | 4 | 4 | 8 |
| 1 | 0 | 1 | 2 |

(*e*)

| Th | H | T | O |
|---|---|---|---|
| (1) | | | |
| | 8 | 0 | 8 |
| + | 8 | 8 | 0 |
| 1 | 6 | 8 | 8 |

(*f*)

| Th | H | T | O |
|---|---|---|---|
| (1) | (1) | (1) | |
| | 7 | 9 | 6 |
| | 3 | 4 | 8 |
| + | 4 | 2 | 2 |
| 1 | 5 | 6 | 6 |

**3.** (*a*) 622 + 297

Arrange the numbers in columns.

| | H | T | O |
|---|---|---|---|
| | (1) | | |
| | 6 | 2 | 2 |
| + | 2 | 9 | 7 |
| | 9 | 1 | 9 |

(*b*) 636 + 243

Arrange the numbers in columns.

| | H | T | O |
|---|---|---|---|
| | 6 | 3 | 6 |
| + | 2 | 4 | 3 |
| | 8 | 7 | 9 |

(*c*) 399 + 455

Arrange the numbers in columns.

| | H | T | O |
|---|---|---|---|
| | (1) | (1) | |
| | 3 | 9 | 9 |
| + | 4 | 5 | 5 |
| | 8 | 5 | 4 |

(*d*) 632 + 398

Arrange the numbers in columns.

| | Th | H | T | O |
|---|---|---|---|---|
| | (1) | (1) | (1) | |
| | | 6 | 3 | 2 |
| + | | 3 | 9 | 8 |
| | 1 | 0 | 3 | 0 |

(*e*) 424 + 263 + 364

Arrange the numbers in columns.

| | Th | H | T | O |
|---|---|---|---|---|
| | (1) | (1) | (1) | |
| | | 4 | 3 | 6 |
| | | 2 | 4 | 3 |
| + | | 3 | 6 | 4 |
| | 1 | 0 | 4 | 3 |

(*f*) 326 + 836 + 248

Arrange the numbers in columns.

| | Th | H | T | O |
|---|---|---|---|---|
| | (1) | (1) | (2) | |
| | | 3 | 2 | 6 |
| | | 8 | 3 | 6 |
| + | | 2 | 4 | 8 |
| | 1 | 4 | 1 | 0 |

## Practice Time 2C

**1.** (*a*)

| | Th | H | T | O |
|---|---|---|---|---|
| | 4 | 4 | 2 | 1 |
| + | 2 | 5 | 1 | 7 |
| | 6 | 9 | 3 | 8 |

(*b*)

| | Th | H | T | O |
|---|---|---|---|---|
| | 5 | 6 | 0 | 4 |
| + | 4 | 0 | 4 | 0 |
| | 9 | 6 | 4 | 4 |

(*c*)

| | Th | H | T | O |
|---|---|---|---|---|
| | 5 | 4 | 2 | 7 |
| + | 3 | 5 | 4 | 0 |
| | 8 | 9 | 6 | 7 |

(*d*)

| | Th | H | T | O |
|---|---|---|---|---|
| | 2 | 4 | 3 | 5 |
| | 1 | 0 | 5 | 0 |
| + | 2 | 4 | 1 | 0 |
| | 5 | 8 | 9 | 5 |

(*e*)

| | Th | H | T | O |
|---|---|---|---|---|
| | 4 | 2 | 0 | 8 |
| | 1 | 0 | 2 | 1 |
| + | 1 | 0 | 3 | 0 |
| | 6 | 2 | 5 | 9 |

(*f*)

| | Th | H | T | O |
|---|---|---|---|---|
| | 1 | 0 | 2 | 1 |
| | 3 | 0 | 5 | 3 |
| + | 4 | 0 | 0 | 3 |
| | 8 | 0 | 7 | 7 |

**2.** (*a*) 2415 + 3120

Write the numbers in the place value columns and add using the following steps:

**Step 1.** Add the ones.

5 + 0 = 5 ones.

**Step 2.** Add the tens.

1 + 2 = 3 tens.

**Step 3.** Add the hundreds.

4 + 1 = 5 hundreds

**Step 4.** Add the thousands.

2 + 3 = 5 thousands.

| | Th | H | T | O |
|---|---|---|---|---|
| | 2 | 4 | 1 | 5 |
| + | 3 | 1 | 2 | 0 |
| | 5 | 5 | 3 | 5 |

Thus, the sum of 2415 and 3120 is 5535.

(*b*) 4345 + 2632.

Write the numbers in the place value columns and add using the following steps:

**Step 1.** Add the ones.

5 + 2 = 7 ones.

**Step 2.** Add the tens.

4 + 3 = 7 tens.

**Step 3.** Add the hundreds.

3 + 6 = 9 hundreds.

**Step 4.** Add the thousands.

4 + 2 = 6 thousands.

| | Th | H | T | O |
|---|---|---|---|---|
| | 4 | 3 | 4 | 5 |
| + | 2 | 6 | 3 | 2 |
| | 6 | 9 | 7 | 7 |

Thus, the sum of 4345 and 2632 is 6977.

(*c*) 6302 + 2475.

Write the numbers in the place value columns and add using the following steps:

**Step 1.** Add the ones.

2 + 5 = 7 tens.

**Step 2.** Add the tens.

0 + 7 = 7 ones.

**Step 3.** Add the hundreds.

**Step 4.** Add the thousands.

3 + 4 = 7 hundreds.

6 + 2 = 8 thousands.

| | Th | H | T | O |
|---|---|---|---|---|
| | 6 | 3 | 0 | 2 |
| + | 2 | 4 | 7 | 5 |
| | 8 | 7 | 7 | 7 |

Thus, the sum of 6302 and 2475 is 8777.

(*d*) 6473 + 3515.

Write the numbers in the place value columns and add using the following steps:

**Step 1.** Add the ones.

3 + 5 = 8 ones.

**Step 2.** Add the tens.

7 + 1 = 8 tens.

| | Th | H | T | O |
|---|---|---|---|---|
| | 6 | 4 | 7 | 3 |
| + | 3 | 5 | 1 | 5 |
| | 9 | 9 | 8 | 8 |

**Step 3.** Add the hundreds.

4 + 5 = 9 hundreds.

**Step 4.** Add the thousands.

6 + 3 = 9 thousands.

Thus, the sum of 6473 and 3515 is 9988.

(*e*) 1243 + 4535 + 1201.

Write the numbers in the place value columns and add using the following steps:

**Step 1.** Add the ones.

3 + 5 + 1 = 9 ones.

**Step 2.** Add the tens.

4 + 3 + 0 = 7 tens.

**Step 3.** Add the hundreds.

2 + 5 + 2 = 9 hundreds

**Step 4.** Add the thousands.

1 + 4 + 1 = 1 thousand.

| Th | H | T | O |
|---|---|---|---|
| 1 | 2 | 4 | 3 |
| 4 | 5 | 3 | 5 |
| + 1 | 2 | 0 | 1 |
| 6 | 9 | 7 | 9 |

Thus, the sum of 1243, 4535 and 1201 is 6979.

(*f*) 2345 + 1023 + 4001.

Write the numbers in the place value columns and add using the following steps:

**Step 1.** Add the ones.

5 + 3 + 1 = 9 ones.

**Step 2.** Add the tens.

4 + 2 + 0 = 6 tens.

**Step 3.** Add the hundreds.

3 + 0 + 0 = 3 hundreds.

**Step 4.** Add the thousands.

2 + 1 + 4 = 7 thousands.

| Th | H | T | O |
|---|---|---|---|
| 2 | 3 | 4 | 65 |
| 1 | 0 | 2 | 3 |
| + 4 | 0 | 0 | 1 |
| 7 | 3 | 6 | 9 |

Thus, the sum of 2345, 1023 and 4001 is 7369.

## Practice Time 2D

**1.** (*a*)

| Th | H | T | O |
|---|---|---|---|
| | | (1) | |
| 3 | 4 | 3 | 5 |
| + 2 | 5 | 5 | 9 |
| 5 | 9 | 9 | 4 |

(*b*)

| Th | H | T | O |
|---|---|---|---|
| | (1) | (1) | |
| 4 | 6 | 7 | 9 |
| + 3 | 2 | 8 | 7 |
| 7 | 9 | 6 | 6 |

(*c*)

| Th | H | T | O |
|---|---|---|---|
| (1) | | (1) | |
| 2 | 6 | 1 | 6 |
| + 3 | 5 | 4 | 8 |
| 6 | 1 | 6 | 4 |

(*d*)

| Th | H | T | O |
|---|---|---|---|
| (1) | (1) | (1) | |
| 2 | 4 | 7 | 5 |
| 3 | 5 | 6 | 2 |
| + 2 | 1 | 0 | 3 |
| 8 | 1 | 4 | 0 |

(*e*)

| Th | H | T | O |
|---|---|---|---|
| (1) | (1) | (1) | |
| 2 | 0 | 4 | 8 |
| 1 | 8 | 5 | 9 |
| + 3 | 2 | 2 | 0 |
| 7 | 1 | 2 | 7 |

(*f*)

| Th | H | T | O |
|---|---|---|---|
| (1) | (1) | (1) | |
| 5 | 7 | 8 | 3 |
| | 1 | 4 | 7 |
| + | 9 | 0 | 3 |
| 6 | 8 | 3 | 3 |

**2.** (*a*) 890 + 619

Arrange the numbers in the place value columns and add using the following steps:

**Step 1.** Add the ones.

0 + 9 = 9 ones.

**Step 2.** Add the tens.

9 + 1 = 10 tens

= 1 hundred + 0 tens.

Write 0 tens in the tens column and carry over.

1 hundred in the hundreds column.

**Step 3.** Add the hundreds.

1 (carried over) + 8 + 6 = 15 hundreds.

= 1 thousand + 5 hundreds.

Write 5 hundreds in the hundreds column and carry over.

1 thousand in the thousands column.

**Step 4.** Add the thousands.

1 + 0 = 1 thousand.

Write 1 in the thousands column.

Thus, the sum of 890 and 619 is 1509.

| Th | H | T | O |
|---|---|---|---|
| (1) | (1) | | |
| | 8 | 9 | 0 |
| + | 6 | 1 | 9 |
| 1 | 5 | 0 | 9 |

(*b*) 7613 + 1387.

Arrange the numbers in the place value columns and add using the following steps:

**Step 1.** Add the ones.

3 + 7 = 10 ones.

= 1 ten + 0 ones.

Write 0 ones in the ones column and carry over.

1 ten in the tens column.

**Step 2.** Add the tens.

1 (carried over) + 1 + 8 = 10 tens.

= 1 hundred + 0 tens.

Write 0 tens in the tens column and carry over

1 hundred in the hundreds column.

**Step 3.** Add the hundreds.

1 (carried over) + 6 + 3 = 10 hundreds

= 1 thousand + 0 hundreds

| Th | H | T | O |
|---|---|---|---|
| (1) | (1) | (1) | |
| 7 | 6 | 1 | 3 |
| + 1 | 3 | 8 | 7 |
| 9 | 0 | 0 | 0 |

Write 0 hundreds in the hundreds column and carry over 1 thousand in the thousands column.

**Step 4.** Add the thousands.

1 (carried over) + 7 + 1 = 9 thousands.

Write 9 in the thousands column.

Thus, the sum of 7613 and 1387 is 9000.

(*c*) 6401 + 3299

Arrange the numbers in the place value columns and add using the following steps:

| | Th | H | T | O |
|---|---|---|---|---|
| | | (1) | (1) | |
| | 6 | 4 | 0 | 1 |
| + | 3 | 2 | 9 | 9 |
| | 9 | 7 | 0 | 0 |

**Step 1.** Add the ones.

1 + 9 = 10 ones

= 1 ten + 0 ones

Write 0 ones in the ones column and carry over 1 ten to the tens column.

**Step 2.** Add the tens.

1 (carried over) + 0 + 9 = 10 tens

= 1 hundred + 0 tens

Write 0 tens in the tens column and carry over 1 hundred in the hundreds column.

**Step 3.** Add the hundreds.

1 (carried over) + 4 + 2 = 7 hundreds.

Write 7 in the hundreds column.

**Step 4.** Add the thousands.

6 + 3 = 9 thousands.

Write 9 in the thousands column.

Thus, the sum of 6401 and 3299 is 9700.

(*d*) 7395 + 1608.

Arrange the numbers in the place value columns and add using the following steps:

| | Th | H | T | O |
|---|---|---|---|---|
| | (1) | (1) | (1) | |
| | 7 | 3 | 9 | 5 |
| + | 1 | 6 | 0 | 8 |
| | 9 | 0 | 0 | 3 |

**Step 1.** Add the ones.

5 + 8 = 13 ones

= 10 ones + 3 ones

= 1 ten + 3 ones

Write 3 in the ones column and carry over 1 ten to the tens column.

**Step 2.** Add the tens.

1 (carried over) + 9 + 0 = 10 tens

= 1 hundred + 0 tens

Write 0 tens in the tens column and carry over 1 hundred to the hundreds column.

**Step 3.** Add the hundreds.

1 (carried over) + 3 + 6 = 10 hundreds

= 1 thousand + 0 hundreds

Write 0 in the hundreds column and carry over 1 thousand to the thousands column.

**Step 4.** Add the thousands.

1 (carried over) + 7 + 1 = 9 thousands

Write 9 in the thousands column.

Thus, the sum of 7395 + 1608 is 9003.

(*e*) 4373 + 1023 + 532

Arrange the numbers in the place value columns and add using the following steps:

| | Th | H | T | O |
|---|---|---|---|---|
| | | (1) | | |
| | 4 | 3 | 7 | 3 |
| | 1 | 0 | 2 | 3 |
| + | | 5 | 3 | 2 |
| | 5 | 9 | 2 | 8 |

**Step 1.** Add the ones.

3 + 3 + 2 = 8 ones.

Write 8 in the ones column.

**Step 2.** Add the tens.

7 + 2 + 3 = 12 tens

= 10 tens + 2 tens

= 1 hundred + 2 tens

Write 2 in the tens column and carry over 1 hundred in the hundreds column.

**Step 3.** Add the hundreds.

1 (carried over) + 3 + 0 + 5 = 9 hundreds

Write 9 in the hundreds column.

**Step 4.** Add the thousands.

4 + 1 = 5 thousands

Write 5 in the thousands column.

Thus, the sum of 4373, 3299 and 532 is 5928.

(*f*) 2020 + 3030 + 460

Arrange the numbers in the place value columns and add using the following steps:

| | Th | H | T | O |
|---|---|---|---|---|
| | | (1) | | |
| | 2 | 0 | 2 | 0 |
| | 3 | 0 | 3 | 0 |
| + | | 4 | 6 | 0 |
| | 5 | 5 | 1 | 0 |

**Step 1.** Add the ones.

0 + 0 + 0 = 0 ones

Write 0 in the ones column.

**Step 2.** Add the tens.

2 + 3 + 6 = 11 tens

= 10 tens + 1 ten

= 1 hundred + 1 ten

Write 1 ten in the tens column and carry over 1 hundred to the hundreds column.

**Step 3.** Add the hundreds.

1 (carried over) + 0 + 0 + 0 = 5 hundreds

Write 5 in the hundreds column.

**Step 4.** Add the thousands.

2 + 3 = 5 thousands

Write 5 in the thousands column.

Thus, the sum of 2020, 3030 and 460 is 5510.

(*g*) 4576 + 2748 + 1652

| | Th | H | T | O |
|---|---|---|---|---|
| | (1) | (1) | (1) | |
| | 4 | 5 | 7 | 6 |
| | 2 | 7 | 4 | 8 |
| + | 1 | 6 | 5 | 2 |
| | 8 | 9 | 7 | 6 |

Arrange the numbers in the place value column and add using the following steps:

**Step 1.** Add the ones.

6 + 8 + 2 = 16 ones

= 1 ten + 6 ones

Write 6 in the ones column and carry over 1 ten to the tens column.

**Step 2.** Add the tens.

1 (carried over) + 7 + 4 + 5 = 17 tens

= 10 tens + 7 tens

= 1 hundred + 7 tens

Write 7 in the tens column and carry over 1 hundred to the hundreds column.

**Step 3.** Add the hundreds.

1 (carried over) + 5 + 7 + 6 = 19 hundreds

= 10 hundreds + 9 hundreds

= 1 thousand + 9 hundreds

Write 9 in the hundreds column and carry over 1 thousand to the thousands column.

**Step 4.** Add the thousands.

1 (carried over) + 4 + 2 + 1 = 8 thousands

Write 8 in the thousands column.

Thus, the sum of 4576, 2748 and 1562 is 8976.

(*h*) and (*i*) — Same as above parts.

## Practice Time 2E

**1.** First, add the numbers downwards.

| | H | T | O |
|---|---|---|---|
| | 8 | 7 | 2 |
| + | 1 | 2 | 7 |
| | 9 | 9 | 9 |

Down

Now, check your answer by adding upwards.

**Check:**

| | 9 | 9 | 9 |
|---|---|---|---|
| | H | T | O |
| | 8 | 7 | 2 |
| + | 1 | 2 | 7 |
| | 9 | 9 | 9 |

Up

∴ The answer is correct.

**2.** Same as 1.

**3.** First, add the numbers downwards.

| | Th | H | T | O |
|---|---|---|---|---|
| | 3 | 0 | 9 | 0 |
| + | 6 | 3 | 0 | 7 |
| | 9 | 3 | 9 | 7 |

Down

Now, check your answer by adding upwards.

**Check:**

| | 9 | 3 | 9 | 7 |
|---|---|---|---|---|
| | Th | H | T | O |
| | 3 | 0 | 9 | 0 |
| + | 6 | 3 | 0 | 7 |
| | 9 | 3 | 9 | 7 |

Up

∴ The answer is correct.

## Practice Time 2F

**1.** (*a*) 124 + 0 = 124 (*b*) 675 + 0 = 675

(*c*) 8926 + 0 = 8926 (*d*) 4678 + 1 = 4679

(*e*) 3564 + 1 = 3565 (*f*) 4575 + 1 = 4576

**2.** (*a*) 74 + 10 = 84 (*b*) 10 + 55 = 65

(*c*) 4362 + 100 = 4462 (*d*) 100 + 5346 = 5446

(*e*) 3040 + 100 = 3140 (*f*) 1000 + 1736 = 2736

**3.** (*a*) 542 + 10 = 552 (*b*) 789 + 100 = 889

(*c*) 10 + 7235 = 7245 (*d*) 4178 + 100 = 4278

(*e*) 6965 + 100 = 7065 (*f*) 6743 + 100 = 6843

(*g*) 100 + 3144 = 3244 (*h*) 612 + 1000 = 1612

(*i*) 6283 + 1000 = 7283

**4.** (*a*) 635 + 298

| | H | T | O |
|---|---|---|---|
| | (1) | (1) | |
| | 6 | 3 | 5 |
| + | 2 | 9 | 8 |
| | 9 | 3 | 3 |

| | H | T | O |
|---|---|---|---|
| | (1) | (1) | |
| | 2 | 9 | 8 |
| + | 6 | 3 | 5 |
| | 9 | 3 | 3 |

We observe that in both the cases, we get the same answer.

(*b*) 563 + 375

| | H | T | O |
|---|---|---|---|
| | (1) | | |
| | 5 | 6 | 3 |
| + | 3 | 7 | 5 |
| | 9 | 3 | 8 |

| | H | T | O |
|---|---|---|---|
| | 3 | 7 | 5 |
| + | 5 | 6 | 3 |
| | 9 | 3 | 8 |

We observe that in both the cases, we get the same answer.

**5.** (*c*) and (*d*) — Same as 4.

## Maths Fun (Page 43)

(*a*) 2875 + 10 = 2885 (*b*) 4438 + 10 = 4448

(*c*) 7547 + 100 = 7647 (*d*) 6399 + 10 = 6409

(*e*) 8930 + 100 = 9030 (*f*) 8913 + 1000 = 9913

(*g*) 9398 + 100 = 9498 (*h*) 7843 + 1000 = 8843

(*i*) 4538 + 1000 = 5538 (*j*) 6464 + 10 = 6474

**Secret message:** I LOVE MATHS

## Practice Time 2G

**1.**

| | T | O |
|---|---|---|
| | 3 | 4 |
| + | 6 | 5 |
| | 9 | 9 |

round off → 30; round off → 70

| | H | T | O |
|---|---|---|---|
| | (1) | | |
| | | 3 | 0 |
| + | | 7 | 0 |
| | 1 | 0 | 0 |

Actual Sum ≤ Estimated Sum

**2.**

| | H | T | O |
|---|---|---|---|
| | (1) | | |
| | | 2 | 2 |
| + | | 8 | 7 |
| | 1 | 0 | 9 |

round off → 200; round off → 90

| | H | T | O |
|---|---|---|---|
| | (1) | | |
| | | 2 | 0 |
| + | | 9 | 0 |
| | 1 | 1 | 0 |

Actual Sum ≤ Estimated Sum

**3.**

| | T | O |
|---|---|---|
| | (1) | |
| | 4 | 6 |
| + | 3 | 7 |
| | 8 | 3 |

round off → 50; round off → 40

| | T | O |
|---|---|---|
| | | |
| | 5 | 0 |
| + | 4 | 0 |
| | 9 | 0 |

Actual Sum ≤ Estimated Sum

**4.**

| | T | O |
|---|---|---|
| | (1) | |
| | 2 | 5 |
| + | 6 | 9 |
| | 9 | 4 |

round off → 300; round off → 70

| | H | T | O |
|---|---|---|---|
| | (1) | | |
| | | 3 | 0 |
| + | | 7 | 0 |
| | 1 | 0 | 0 |

Actual Sum ≤ Estimated Sum

**5.** and **6.** — Same as above parts.

## Practice Time 2H

**1.**

| | Th | H | T | O |
|---|---|---|---|---|
| | | (1) | (1) | |
| Number of storybooks of Hindi = | 1 | 2 | 3 | 4 |
| Number of storybooks of English = | 2 | 3 | 5 | 6 |
| Number of books of art and craft = + | 2 | 2 | 2 | 0 |
| | 5 | 8 | 1 | 0 |

Thus, total number of books in the school library is 5810.

**2.**

| | Th | H | T | O |
|---|---|---|---|---|
| | (1) | | | |
| Number of bicycles manufactured in a year = | 4 | 6 | 1 | 7 |
| Number of more bicycles manufactured in next year = + | 2 | 5 | 0 | 0 |
| Total number of bicycles in both the years = | 7 | 1 | 1 | 7 |

Thus, total number of bicycles manufactured in both the years is 7117.

**3.**

| | Th | H | T | O |
|---|---|---|---|---|
| | | (2) | (1) | |
| Number of men in the village = | 4 | 2 | 6 | 5 |
| Number of women in the village = | 4 | 0 | 7 | 5 |
| Number of more children in the village = + | 1 | 5 | 7 | 0 |
| Total number of people living in the village = | 9 | 9 | 1 | 0 |

Thus, total number of people living in a village is 9910.

**4.**

| | | H | T | O |
|---|---|---|---|---|
| Contribution of Radha in the gift = | ₹ | 1 | 2 | 5 |
| Contribution of Rishi in the gift = + | ₹ | 1 | 7 | 0 |
| Total cost of the gift = | ₹ | 2 | 9 | 5 |

Thus, total cost of the gift is ₹295.

**5.**

| | H | T | O |
|---|---|---|---|
| Number of red balloons = | 2 | 4 | 8 |
| Number of green balloons = + | 1 | 7 | 3 |
| | 4 | 2 | 1 |

Rounded to nearest 10 →

| | H | T | O |
|---|---|---|---|
| | 2 | 5 | 0 |
| + | 1 | 7 | 0 |
| | 4 | 2 | 0 |

Answer is 420, more than 400.

**6.** Same as above.

## Chapter Assessment

**1.** (*a*) – (*i*) $740 + 260 = 1000$.

$\because$ $1000 = 100$ tens.

Hence, option (*i*) is correct.

(*b*) – (*iv*)

| | H | T | O |
|---|---|---|---|
| | 5 | 1 | A |
| + | | 2 | B |
| | | | |

→

| | H | T | O |
|---|---|---|---|
| | | (1) | |
| | 5 | 1 | 8 |
| + | | 2 | 9 |
| | 5 | 4 | 7 |

$\therefore$ A = 8, B = 9

Hence, option (*iv*) is correct.

(*c*) – (*iv*) $1673 < 673 + 1100$

$1673 < 1773$

Hence, option (*iv*) is correct.

(*d*) – (*ii*) 4 tens = $4 \times 10 = 40$,

5 hundreds = $5 \times 100$,

6 tens = $6 \times 1 = 6$

The number is = $500 + 40 + 6 = 546$

Add 3867 and 546

| | Th | H | T | O |
|---|---|---|---|---|
| | (1) | (1) | (1) | |
| | 3 | 8 | 6 | 7 |
| + | | 5 | 4 | 6 |
| | 4 | 4 | 1 | 3 |

Hence, option (*ii*) is correct.

(*e*) – (*iii*) The greatest 3-digit number = 999

According to question,

$999 + 12 = 1011$

Hence, option (*iii*) is correct.

(*f*) – (*iii*) $2000 + 100 = 2100$

(*g*) – (*i*) $3452 + 6278 = 9730$

**2.**

| | Th | H | T | O |
|---|---|---|---|---|
| | (1) | (1) | | |
| Number of passengers in a train = | 1 | 1 | 5 | 0 |
| Number of passengers board at the next station = + | | 8 | 9 | 0 |
| Number of passengers travelling on train now = | 2 | 0 | 4 | 0 |

Thus, 2040 passengers are travelling on the train now.

**3.**

| | Th | H | T | O |
|---|---|---|---|---|
| | (1) | | | |
| The price of the dress = | ₹ 2 | 5 | 5 | 0 |
| The price of pair of shoes (2550 + 250 = 2800) = + | ₹ 2 | 8 | 0 | 0 |
| Total price of shoes and dress together = | ₹ 5 | 3 | 5 | 0 |

Thus, total price of dress and shoes are ₹5350.

**4.**

| | Th | H | T | O |
|---|---|---|---|---|
| | | | (1) | |
| Number of toys in stock = | 1 | 2 | 1 | 7 |
| Number of toys he ordered = + | 4 | 5 | 2 | 8 |
| Total number of toys = | 5 | 7 | 4 | 5 |

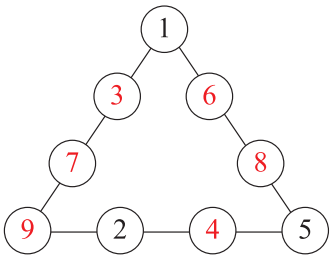
Thus, the shop have 5745 toys in all.

**5.**

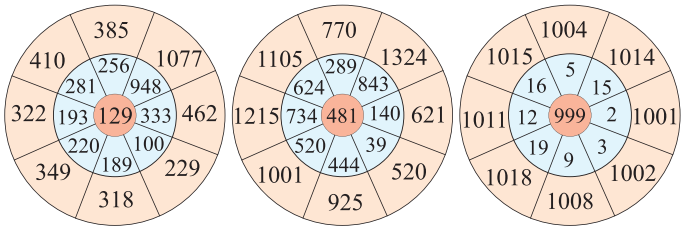
| | | Th | H | T | O |
|---|---|---|---|---|---|
| | | (2) | (1) | (1) | |
| Neeru saved in a month = | ₹ | 1 | 4 | 0 | 0 |
| Tarun saved in a month = | ₹ | 1 | 6 | 7 | 8 |
| Sandhya saved in a month + | ₹ | 0 | 9 | 4 | 5 |
| Total money saved = | ₹ | 4 | 0 | 2 | 3 |

Thus, ₹4023 saved in that month altogether.

## Brain Sizzlers (Page 47)




## Mental Maths (Page 48)




# CHAPTER 3 : SUBTRACTION

## Let's Recall

**1.** (*a*)

| | T | O |
|---|---|---|
| | 9 | 7 |
| – | 7 | 5 |
| | 2 | 2 |

(*b*)

| | T | O |
|---|---|---|
| | (6) | (15) |
| | ~~7~~ | ~~5~~ |
| – | 6 | 6 |
| | 0 | 9 |

(*c*)

| | H | T | O |
|---|---|---|---|
| | 5 | 7 | 2 |
| – | 1 | 2 | 1 |
| | 4 | 5 | 1 |

(*d*)

| | H | T | O |
|---|---|---|---|
| | | (16) | |
| | (0) | ~~(6)~~ | (13) |
| | ~~1~~ | ~~7~~ | ~~3~~ |
| – | | 9 | 7 |
| | 0 | 7 | 6 |

**2.** Subtraction statements

(*a*) 79 – 40 = 39, 79 – 39 = 40

(*b*) 275 – 143 = 132, 275 – 132 = 143

**3.** (*a*) 285 – 1 = 284 (*b*) 305 – 0 = 305

(*c*) 206 – 100 = 106 (*d*) 699 – 699 = 0

**4.** 182 – 54 = 128 metres.

## Practice Time 3A

**1.** (*a*)

| | H | T | O |
|---|---|---|---|
| | 9 | 3 | 7 |
| – | 4 | 3 | 2 |
| | 5 | 0 | 5 |

(*b*)

| | H | T | O |
|---|---|---|---|
| | 8 | 6 | 9 |
| – | 5 | 0 | 2 |
| | 3 | 6 | 7 |

(*c*)

| | H | T | O |
|---|---|---|---|
| | 6 | 4 | 3 |
| – | 3 | 1 | 1 |
| | 3 | 3 | 2 |

(*d*)

| | H | T | O |
|---|---|---|---|
| | | (12) | |
| | (8) | ~~(2)~~ | (14) |
| | ~~9~~ | ~~3~~ | ~~4~~ |
| – | 6 | 4 | 6 |
| | 2 | 8 | 8 |

(*e*)

| | H | T | O |
|---|---|---|---|
| | | (9) | |
| | (4) | ~~(10)~~ | (14) |
| | ~~5~~ | ~~0~~ | ~~4~~ |
| – | 2 | 4 | 8 |
| | 2 | 5 | 6 |

(*f*)

| | H | T | O |
|---|---|---|---|
| | (7) | (14) | |
| | ~~8~~ | ~~4~~ | 6 |
| – | 4 | 8 | 3 |
| | 3 | 6 | 3 |

(*g*)

| | H | T | O |
|---|---|---|---|
| | | (9) | |
| | (8) | ~~(10)~~ | (10) |
| | ~~9~~ | ~~0~~ | ~~0~~ |
| – | 4 | 8 | 8 |
| | 4 | 1 | 2 |

(*h*)

| | H | T | O |
|---|---|---|---|
| | | (11) | |
| | (8) | ~~(1)~~ | (10) |
| | ~~6~~ | ~~2~~ | ~~0~~ |
| – | 3 | 8 | 9 |
| | 2 | 3 | 1 |

**2.** (*a*) 628 – 436

Write the numbers in columns and follow the given steps:

**Step 1.** Subtract the ones.

8 ones – 6 ones = 2 ones

| | H | T | O |
|---|---|---|---|
| | 6 | 2 | 8 |
| – | 4 | 3 | 6 |
| | | | 2 |

**Step 2.** Subtract the tens.
3 tens cannot be subtracted from 2 tens.
So, regroup hundreds and tens, that is; borrow 1 hundred to tens.
So, 6 hundreds 2 tens = 5 hundreds 12 tens.
Now, 12 tens – 3 tens = 9 tens.

| | H | T | O |
|---|---|---|---|
| | ⑤ | ⑫ | |
| | ~~6~~ | ~~2~~ | 8 |
| – | 4 | 3 | 6 |
| | | 9 | 2 |

**Step 3.** Subtract the hundreds.
5 hundreds – 4 hundreds = 1 hundred
Thus, 628 – 436 = 192.

| | H | T | O |
|---|---|---|---|
| | ⑤ | ⑫ | |
| | ~~6~~ | ~~2~~ | 8 |
| – | 4 | 3 | 6 |
| | 1 | 9 | 2 |

(*b*) 843 – 257
Write the numbers in columns and follow the given steps:
**Step 1.** Subtract the ones.
Since 3 < 7. So, regroup tens and ones.
4 tens 3 ones = 3 tens 13 ones.
Now, 13 ones – 7 ones = 6 ones

| | H | T | O |
|---|---|---|---|
| | | ③ | ⑬ |
| | 8 | ~~4~~ | ~~3~~ |
| – | 2 | 5 | 7 |
| | | | 6 |

**Step 2.** Subtract the tens.
Since 3 < 5. So, regroup hundreds and tens.
8 hundreds 3 tens = 7 hundreds 13 tens
13 tens – 5 tens = 8 tens

| | H | T | O |
|---|---|---|---|
| | | ⑬ | |
| | ⑦ | ~~3~~ | ⑬ |
| | ~~8~~ | ~~4~~ | ~~3~~ |
| – | 2 | 5 | 7 |
| | | 8 | 6 |

**Step 3.** Subtract the hundreds.
7 hundreds – 2 hundreds = 5 hundreds.
Thus, 843 – 257 = 586.

| | H | T | O |
|---|---|---|---|
| | | ⑬ | |
| | ⑦ | ~~3~~ | ⑬ |
| | ~~8~~ | ~~4~~ | ~~3~~ |
| – | 2 | 5 | 7 |
| | 5 | 8 | 6 |

(*c*) to (*h*) — Same as (*a*) and (*b*)

## Quick Check (Page 57)

| | Th | H | T | O |
|---|---|---|---|---|
| | | ⑪ | ⑫ | |
| | ⑤ | ~~1~~ | ~~2~~ | ⑪ |
| | ~~6~~ | ~~2~~ | ~~3~~ | ~~1~~ |
| – | 2 | 4 | 4 | 8 |
| | 3 | 7 | 8 | 3 |

## Practice Time 3B

**1.** (*a*)

| | Th | H | T | O |
|---|---|---|---|---|
| | 6 | 9 | 9 | 5 |
| – | 4 | 8 | 9 | 4 |
| | 2 | 1 | 0 | 1 |

(*b*)

| | Th | H | T | O |
|---|---|---|---|---|
| | 8 | 4 | 5 | 6 |
| – | 8 | 4 | 5 | 5 |
| | 0 | 0 | 0 | 1 |

(*c*)

| | Th | H | T | O |
|---|---|---|---|---|
| | 9 | 9 | 4 | 9 |
| – | 7 | 8 | 3 | 1 |
| | 2 | 1 | 1 | 8 |

(*d*)

| | Th | H | T | O |
|---|---|---|---|---|
| | ③ | ⑯ | ⑥ | ⑮ |
| | ~~4~~ | ~~6~~ | ~~7~~ | ~~5~~ |
| – | 3 | 8 | 4 | 6 |
| | 0 | 8 | 2 | 9 |

(*e*)

| | Th | H | T | O |
|---|---|---|---|---|
| | | ⑬ | ⑨ | |
| | ⑤ | ~~3~~ | ~~10~~ | ⑩ |
| | ~~6~~ | ~~4~~ | ~~0~~ | ~~0~~ |
| – | 3 | 9 | 9 | 9 |
| | 2 | 4 | 0 | 1 |

(*f*)

| | Th | H | T | O |
|---|---|---|---|---|
| | | ⑫ | ⑬ | |
| | ③ | ~~2~~ | ~~3~~ | ⑭ |
| | ~~4~~ | ~~3~~ | ~~4~~ | ~~4~~ |
| – | 2 | 6 | 5 | 5 |
| | 1 | 6 | 8 | 9 |

(*g*)

| | Th | H | T | O |
|---|---|---|---|---|
| | | ⑮ | ⑭ | |
| | ⑦ | ~~5~~ | ~~4~~ | ⑫ |
| | ~~8~~ | ~~6~~ | ~~5~~ | ~~2~~ |
| – | 5 | 9 | 7 | 6 |
| | 2 | 6 | 7 | 6 |

(*h*)

| | Th | H | T | O |
|---|---|---|---|---|
| | | ⑨ | ⑭ | |
| | ⑥ | ~~10~~ | ~~4~~ | ⑭ |
| | ~~7~~ | ~~0~~ | ~~5~~ | ~~4~~ |
| – | 3 | 9 | 6 | 7 |
| | 3 | 0 | 8 | 7 |

**2.** (*a*) 5667 – 3994

Write the numbers in columns and follow the given steps:

| | Th | H | T | O |
|---|---|---|---|---|
| | | (15) | | |
| | (4) | ~~(5)~~ | (16) | |
| | ~~5~~ | ~~6~~ | ~~6~~ | 7 |
| – | 3 | 9 | 9 | 4 |
| | 1 | 6 | 7 | 3 |

**Step 1.** 7 ones – 4 ones = 3 ones.
Write 3 in ones column.

**Step 2.** Since 6 < 9, so, regroup the hundreds into tens to subtract the tens.
6 hundreds 6 tens = 5 hundreds 16 tens.
16 tens – 9 tens = 7 tens.

**Step 3.** Again, 6 < 9, so, regroup the thousands into hundreds to subtract the hundreds.
15 hundreds – 9 hundreds = 6 hundreds.

**Step 4.** Subtract the thousands.
4 thousands – 3 thousands = 1 thousand.

Thus, 5667 – 3994 = 1673.

(*b*) 8777 – 4997.

Write the numbers in columns and follow the given steps:

| | Th | H | T | O |
|---|---|---|---|---|
| | | (16) | | |
| | (7) | ~~(6)~~ | (17) | |
| | ~~8~~ | ~~7~~ | ~~7~~ | 7 |
| – | 4 | 9 | 9 | 7 |
| | 3 | 7 | 8 | 0 |

**Step 1.** Subtract the ones.
7 ones – 7 ones = 0 ones.
Write 0 in ones columns.

**Step 2.** Since 7 < 9, so, regroup the hundreds into tens to subtract the tens.
7 hundreds 7 tens = 6 hundreds 17 tens
17 tens – 9 tens = 8 tens.

**Step 3.** Again, 7 < 9, so, regroup the thousands into hundreds to subtract the hundreds.
8 thousands 6 hundreds = 7 thousands 16 hundreds.
16 hundreds – 9 hundreds = 7 hundreds.

**Step 4.** Subtract the thousands.
7 thousands – 4 thousands = 3 thousands.

Thus, 8777 – 4997 = 3780.

(*c*) to (*h*) — Same as (*a*) and (*b*)

## Think and Answer (Page 58)

**1.** Since, 1000 – 9 = 991.
Then, 9000 – 9 = 8991.

**2.** 723 tens = 7 thousands 23 tens.
∴ 7 thousands 23 tens – 7 thousands 23 tens = 0.

## Practice Time 3C

**1.** (*a*) 273 – 0 = 273 (*b*) 564 – 0 = 564
(*c*) 7364 – 0 = 7364 (*d*) 575 – 1 = 574
(*e*) 649 – 1 = 648 (*f*) 277 – 1 = 276

**2.** (*a*) 425 – 10 = 415 (*b*) 896 – 10 = 886
(*c*) 567 – 100 = 467 (*d*) 4364 – 100 = 4264
(*e*) 2645 – 1000 = 1645 (*f*) 5730 – 1000 = 4730

## Practice Time 3D

**1.** Actual difference Estimated difference

| | T | O | | | T | O |
|---|---|---|---|---|---|---|
| | 8 | 7 | round off → | | 9 | 0 |
| – | 2 | 3 | round off → | – | 2 | 0 |
| | 6 | 4 | | | 7 | 0 |

Actual difference < Estimated difference

**2.** Actual difference Estimated difference

| | T | O | | | T | O |
|---|---|---|---|---|---|---|
| | (8) | (14) | | | | |
| | ~~9~~ | ~~4~~ | round off → | | 9 | 0 |
| – | 6 | 5 | round off → | – | 7 | 0 |
| | 2 | 9 | | | 2 | 0 |

Actual difference > Estimated difference

**3.** Actual difference Estimated difference

| | H | T | O | | | H | T | O |
|---|---|---|---|---|---|---|---|---|
| | (0) | (16) | | | | (0) | (17) | |
| | ~~X~~ | ~~6~~ | 7 | round off → | | ~~X~~ | ~~7~~ | 0 |
| – | | 9 | 4 | round off → | – | | 9 | 0 |
| | 0 | 7 | 3 | | | 0 | 8 | 0 |

Actual difference < Estimated difference

**4.** Actual difference Estimated difference

| | H | T | O | | | H | T | O |
|---|---|---|---|---|---|---|---|---|
| | | (15) | | | | | | |
| | (1) | ~~(5)~~ | (14) | | | (1) | (16) | |
| | ~~2~~ | ~~6~~ | ~~4~~ | round off → | | ~~2~~ | ~~6~~ | 0 |
| – | 1 | 8 | 5 | round off → | – | 1 | 9 | 0 |
| | 0 | 7 | 9 | | | 0 | 7 | 0 |

Actual difference > Estimated difference

## Think and Answer (Page 61)

**1.** (*a*)

| | H | T | O |
|---|---|---|---|
| | 4 | 4 | 7 |
| – | 3 | 5 | 8 |
| | 0 | 8 | 9 |

(*b*)

| | H | T | O |
|---|---|---|---|
| | 5 | 2 | 6 |
| + | 4 | 1 | 8 |
| | 9 | 4 | 4 |

(*c*)

| | H | T | O |
|---|---|---|---|
| | 6 | 9 | 1 |
| – | 4 | 7 | 8 |
| | 2 | 1 | 3 |

## Practice Time 3E

**1.** (*a*) 3231 – 1965 + 987.

Firstly, subtract 1965 from 3231 and then add 987 to the difference obtained.

| | Th | H | T | O |
|---|---|---|---|---|
| | | (11) | (12) | |
| | (3) | ~~(1)~~ | ~~(2)~~ | (11) |
| | ~~3~~ | ~~2~~ | ~~3~~ | ~~1~~ |
| – | 1 | 9 | 6 | 5 |
| | 1 | 2 | 6 | 6 |

| | Th | H | T | O |
|---|---|---|---|---|
| | (1) | (1) | (1) | |
| | 1 | 2 | 6 | 6 |
| + | | 9 | 8 | 7 |
| | 2 | 2 | 5 | 3 |

(*b*) 4589 – 3256 + 1634.

Firstly, subtract 3256 from 4589 and then add 1634 to the difference obtained.

| | Th | H | T | O |
|---|---|---|---|---|
| | 4 | 5 | 8 | 9 |
| – | 3 | 2 | 5 | 6 |
| | 1 | 3 | 3 | 3 |

| | Th | H | T | O |
|---|---|---|---|---|
| | 1 | 3 | 3 | 3 |
| + | 1 | 6 | 3 | 4 |
| | 2 | 9 | 6 | 7 |

(*d*) 8532 – 1986 + 3756 – 5288.

Firstly, subtract 1986 from 8532. Then add 3756 to the difference obtained and subtract 5288 from the sum to get the answer.

| | Th | H | T | O |
|---|---|---|---|---|
| | | (14) | (12) | |
| | (7) | ~~(4)~~ | ~~(2)~~ | (12) |
| | ~~8~~ | ~~5~~ | ~~3~~ | ~~2~~ |
| – | 1 | 9 | 8 | 6 |
| | 6 | 5 | 4 | 6 |

| | TTh | Th | H | T | O |
|---|---|---|---|---|---|
| | | (1) | (1) | (1) | |
| | | 6 | 5 | 4 | 6 |
| + | | 3 | 7 | 5 | 6 |
| | 1 | 0 | 3 | 0 | 2 |

| | TTh | Th | H | T | O |
|---|---|---|---|---|---|
| | | | | (9) | |
| | | (10) | (2) | ~~(10)~~ | (12) |
| | 1 | ~~0~~ | ~~3~~ | ~~0~~ | ~~2~~ |
| – | | 5 | 2 | 8 | 8 |
| | 0 | 5 | 0 | 1 | 4 |

(*c*), (*e*), (*f*), (*g*) and (*h*) — Same as above.

**2.** (*a*) 574 – 283.

**Subtraction**

| | H | T | O | |
|---|---|---|---|---|
| | (4) | (17) | | |
| | ~~5~~ | ~~7~~ | 4 | ---→ Minuend |
| – | 2 | 8 | 3 | ---→ Subtrahend |
| | 2 | 9 | 1 | ---→ Difference |

**Checking**

| | H | T | O | |
|---|---|---|---|---|
| | (1) | | | |
| | 2 | 9 | 1 | ---→ Minuend |
| + | 2 | 8 | 3 | ---→ Subtrahend |
| | 5 | 7 | 4 | ---→ Difference |

Clearly, the sum of the 'difference' and 'subtrahend' is equal to the 'minuend'.

Thus, the difference is correct.

(*b*) same as part (*a*)
(*c*) 4326 – 1564.

**Subtraction**

| | Th | H | T | O | |
|---|---|---|---|---|---|
| | | (12) | | | |
| | (3) | ~~(2)~~ | (12) | | |
| | ~~4~~ | ~~3~~ | ~~2~~ | 6 | ---→ Minuend |
| – | 1 | 5 | 6 | 4 | ---→ Subtrahend |
| | 2 | 7 | 6 | 2 | ---→ Difference |

**Checking**

| | Th | H | T | O | |
|---|---|---|---|---|---|
| | (1) | (1) | | | |
| | 2 | 7 | 6 | 2 | ---→ Minuend |
| + | 1 | 5 | 6 | 4 | ---→ Subtrahend |
| | 4 | 3 | 2 | 6 | ---→ Difference |

Clearly, the sum of the 'difference' and 'subtrahend' is equal to the 'minuend'.
Thus, the difference is correct.
(*d*) same as part (*c*)

**3.** Sum of 2370 and 4599

| | Th | H | T | O |
|---|---|---|---|---|
| | | (1) | | |
| | 2 | 3 | 7 | 0 |
| + | 4 | 5 | 9 | 9 |
| | 6 | 9 | 6 | 9 |

Subtracting 6969 from 8220

| | Th | H | T | O |
|---|---|---|---|---|
| | (7) | (11) | (11) | (10) |
| | ~~8~~ | ~~2~~ | ~~2~~ | ~~0~~ |
| – | 6 | 9 | 6 | 9 |
| | 1 | 2 | 5 | 1 |

**4.** Difference of 4980 and 3895.

| | Th | H | T | O |
|---|---|---|---|---|
| | | | (17) | |
| | | (8) | ~~(7)~~ | (10) |
| | ~~4~~ | ~~9~~ | ~~8~~ | ~~0~~ |
| – | 3 | 8 | 9 | 5 |
| | 1 | 0 | 8 | 5 |

Subtracting 1085 from 6910.

| | Th | H | T | O |
|---|---|---|---|---|
| | | | (10) | |
| | | (8) | ~~(0)~~ | (10) |
| | 6 | ~~9~~ | ~~1~~ | ~~0~~ |
| – | 1 | 0 | 8 | 5 |
| | 5 | 8 | 2 | 5 |

**5.** Sum of 5334 and 4653

| | Th | H | T | O |
|---|---|---|---|---|
| | | (1) | | |
| | 5 | 3 | 3 | 4 |
| + | 4 | 6 | 5 | 3 |
| | 9 | 9 | 8 | 7 |

Subtracting 6998 from 9987

| | Th | H | T | O |
|---|---|---|---|---|
| | | (18) | (17) | |
| | (8) | ~~(8)~~ | ~~(7)~~ | (17) |
| | ~~9~~ | ~~9~~ | ~~8~~ | ~~7~~ |
| – | 6 | 9 | 9 | 8 |
| | 2 | 9 | 8 | 9 |

## Practice Time 3F

**1.**

| | H | T | O |
|---|---|---|---|
| | | (10) | |
| | (4) | ~~(0)~~ | (10) |
| Number of seats in a theater = | ~~5~~ | ~~1~~ | ~~0~~ |
| Number of persons saw the show = – | 3 | 9 | 3 |
| Number of seats remained vacant = | 1 | 1 | 7 |

Thus, 117 seats are remained vacant.

**2.**

| | H | T | O |
|---|---|---|---|
| | | (7) | (11) |
| | 9 | ~~8~~ | ~~1~~ |
| – | 7 | 6 | 9 |
| | 2 | 1 | 2 |

Thus, 212 should be subtracted from 981 to get 769.

**3.** Subtract 6054 from 9040.

| | Th | H | T | O |
|---|---|---|---|---|
| | | (9) | (13) | |
| | (8) | ~~(10)~~ | ~~(3)~~ | (10) |
| | ~~9~~ | ~~0~~ | ~~4~~ | ~~0~~ |
| – | 6 | 0 | 5 | 4 |
| | 2 | 9 | 8 | 6 |

Thus, 2986 should be added to 6054 to get 9040.

**4.**

| | H | T | O |
|---|---|---|---|
| | | (13) | |
| | (7) | ~~(3)~~ | (10) |
| Number of sweets packets purchased = | ~~8~~ | ~~4~~ | ~~0~~ |
| Number of packets distributed = – | 6 | 8 | 1 |
| Number of packets left = | 1 | 5 | 9 |

Thus, 159 packets are left.

**5.**

| | Th | H | T | O | |
|---|---|---|---|---|---|
| Capacity of tank = | 1 | 1 | 0 | 0 | L |
| Quantity of water already in the tank = – | | 5 | 0 | 5 | L |
| Water needed to fill the tank completely = | | 5 | 9 | 5 | L |

Thus, 595 litres of water needed to fill the tank completely.

**6.**

| | | Th | H | T | O |
|---|---|---|---|---|---|
| Tanya deposited money in bank account = | ₹ | 8 | 5 | 1 | 5 |
| She withdrew money from bank account = – | ₹ | 5 | 2 | 1 | 6 |
| Money left in her account | ₹ | 3 | 2 | 9 | 9 |

Thus, ₹3299 left in her account.

**7.**

| | Th | H | T | O |
|---|---|---|---|---|
| | (6) | (16) | | |
| The sum of two numbers = | ~~7~~ | ~~6~~ | 2 | 5 |
| One number = – | 3 | 9 | 2 | 1 |
| Other number = | 3 | 7 | 0 | 4 |

Thus, the other number is 3704.

**8.**

| | Th | H | T | O |
|---|---|---|---|---|
| Total number postcards Priya and Digvijay have = | 2 | 7 | 5 | 0 |
| Number of postcards Digvijay has = – | 1 | 6 | 9 | 2 |
| Number of postcards Priya has = | 1 | 0 | 5 | 8 |

Thus, Priya has 1058 postcards.

**9.**

| | Th | H | T | O |
|---|---|---|---|---|
| Number of persons visited the zoo on Friday = | 3 | 5 | 4 | 8 |
| Number of persons visited the zoo on Saturday = + | 1 | 6 | 9 | 8 |
| Number of persons visited the zoo in these two days = | 5 | 2 | 4 | 6 |

| | Th | H | T | O |
|---|---|---|---|---|
| Now, total number of persons visited in the zoo = | 7 | 0 | 3 | 4 |
| Number of persons visited in two days = – | 5 | 2 | 4 | 6 |
| Number of persons visited in the zoo on Sunday = | 1 | 7 | 8 | 8 |

Thus, 1788 persons visited in the zoo on Sunday.

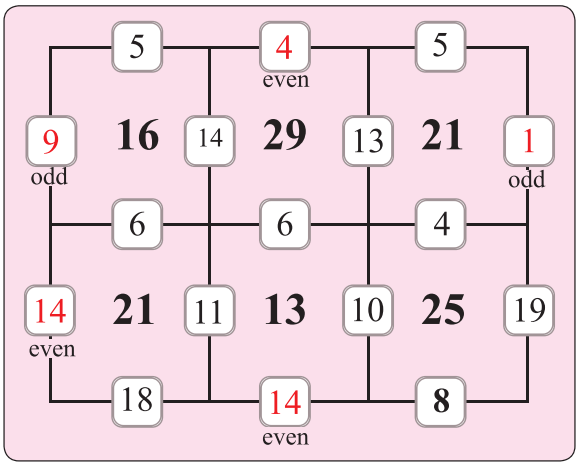
**10.** Divya had = ₹8765

| | | Th | H | T | O |
|---|---|---|---|---|---|
| She gave to her bother = | ₹ | 6 | 5 | 4 | 2 |
| She gave to her sister = + | ₹ | 1 | 8 | 9 | 5 |
| Total money she distributes = | ₹ | 8 | 4 | 3 | 7 |

| | | Th | H | T | O |
|---|---|---|---|---|---|
| Money left = | ₹ | 8 | 7 | 6 | 5 |
| | – ₹ | 8 | 4 | 3 | 7 |
| | ₹ | 0 | 3 | 2 | 8 |

Thus, ₹328 is left with Divya.

## Mental Maths (Page 64)




## Chapter Assessment

**1.** (*a*) – (*iv*) 800 – 307 = 493
(*b*) – (*ii*) 268 less than 500 = 500 – 268 = 232
(*c*) – (*iv*) 740 – 0 + 225 = 740 + 225 = 965
(*d*) – (*i*) 1000 less than 1756 = 1756 – 1000 = 756

**2.** (*a*) 3295 – 0 = 3295 (*b*) 6782 – 6782 = 0
(*c*) 168 – 0 = 168 (*d*) 3578 – 3578 = 0
(*e*) 6759 – 10 = 6749 (*f*) 3890 – 100 = 3790

**3.** (*a*) 356 – 248 = 108 ; 526 – 417 = 109
Since, 108 < 109
∴ 356 – 248 < 526 – 417

(*b*) 876 – 495 = 381 ; 671 – 532 = 139
Since, 381 > 139
∴ 876 – 495 > 671 – 532

(*c*) 895 – 380 = 515 ; 675 – 160 = 515
515 = 515
∴ 895 – 380 = 675 – 160

(*d*) 3854 – 1699 = 2155 ; 8932 – 7966 = 966
2155 > 966
∴ 3854 – 1699 > 8932 – 7966

**4.** (*a*) 9678 – 8032 + 3059

Firstly, subtract 8032 from 9678. Then add 3059 to the difference obtained.

| | Th | H | T | O |
|---|---|---|---|---|
| | 9 | 6 | 7 | 8 |
| – | 8 | 0 | 3 | 2 |
| | 1 | 6 | 4 | 6 |

| | Th | H | T | O |
|---|---|---|---|---|
| | 1 | 6 | 4 | 6 |
| + | 3 | 0 | 5 | 9 |
| | 4 | 7 | 0 | 5 |

(*b*) 9348 – 2146 + 1678

| | Th | H | T | O |
|---|---|---|---|---|
| | 9 | 3 | 4 | 8 |
| – | 2 | 1 | 4 | 6 |
| | 7 | 2 | 0 | 2 |

| | Th | H | T | O |
|---|---|---|---|---|
| | 7 | 2 | 0 | 2 |
| + | 1 | 6 | 7 | 8 |
| | 8 | 8 | 8 | 0 |

(*c*) Same as above.

**5.**

| | Th | H | T | O |
|---|---|---|---|---|
| Number of bicycles in a shop = | 6 | 7 | 5 | 2 |
| Number of bicycles sold in one month = – | 2 | 7 | 5 | 6 |
| Number of bicycles left in the shop = | 3 | 9 | 9 | 6 |

Thus, 3996 bicycles left in the shop.

**6.**

| | Th | H | T | O |
|---|---|---|---|---|
| Number of marbles Sumit had = | 3 | 6 | 1 | 5 |
| Number of marbles he gave to his friend = – | 1 | 9 | 8 | 6 |
| Number of marbles he has now = | 1 | 6 | 2 | 9 |

Thus, 1629 marbles left with him.

**7.** Smallest 3-digit number = 100
Greatest 4-digit even number = 9998
Difference = 9998 – 100 = 9898

**8.**

| | Th | H | T | O |
|---|---|---|---|---|
| Number of people in an auditorium = | 5 | 4 | 0 | 6 |
| Number of people left the auditorium = – | | 1 | 4 | 0 |
| | 5 | 2 | 6 | 6 |

Number of people more entered = 5266 + 20 = 5286
Thus, 5286 people are there in the auditorium.

**9.** Gaurav had some amount of money in his wallet.

| | | Th | H | T | O |
|---|---|---|---|---|---|
| He spent money on buying clothes = | ₹ | 3 | 1 | 0 | 0 |
| He spent money for parking = | ₹ | | 1 | 0 | 0 |
| Amount left in his wallet = + | ₹ | | 8 | 0 | 0 |
| Amount he have in his wallet at the beginning = | ₹ | 4 | 0 | 0 | 0 |

Thus, ₹4000 he have in the beginning in his wallet.

**10.** Greater number = Successor of number 8970
= 8970 + 1 = 8971
Smaller number = 1479 less than the greater number.
Smaller number = 8971 – 1479 = 7492

## Brain Sizzlers (Page 66)

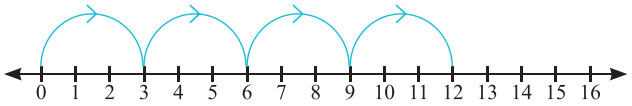
**1.**

| | H | T | O |
|---|---|---|---|
| | **5** | 1 | **5** |
| – | 3 | **5** | 7 |
| | 1 | **5** | 8 |

**2.** ● + ▲ + ◠ = 420
● + ▲ = 220
● + ▲ – ◠ = 420 – 220 = 20

# CHAPTER 4 : MULTIPLICATION

## Let's Recall

**1.** 


$4 \times 3 = 12$

4 times 3 is 12

**2.** (*a*) $22 + 22 + 22 + 22 + 22 = 5 \times 22 = 110$

(*b*) $31 + 31 + 31 + 31 + 31 = 5 \times 31 = 155$

**3.** (*a*)

| | T | O |
|---|---|---|
| | (1) | |
| | | 4 |
| × | | 4 |
| | 1 | 6 |

(*b*)

| | H | T | O |
|---|---|---|---|
| | (1) | | |
| | | 5 | 2 |
| × | | | 3 |
| | 1 | 5 | 6 |

(*c*)

| | H | T | O |
|---|---|---|---|
| | (1) | | |
| | | 3 | 0 |
| × | | | 5 |
| | 1 | 5 | 0 |

(*d*)

| | H | T | O |
|---|---|---|---|
| | (2) | (3) | |
| | | 4 | 6 |
| × | | | 6 |
| | 2 | 7 | 6 |

## Quick Check (Page 68)

1. The number to be multiplied is called multiplicand.
2. The number by which we multiply is called the multiplier.
3. The result of multiplication is called the product.

## Practice Time 4A

**1.**

| | Multiplication Fact | Multiplicand | Multiplier | Product |
|---|---|---|---|---|
| (*a*) | $3 \times 2 = 6$ | 3 | 2 | 6 |
| (*b*) | $4 \times 4 = 16$ | 4 | 4 | 16 |
| (*c*) | $10 \times 5 = 50$ | 10 | 5 | 50 |

**2.** (*a*)

| | |
|---|---|
| | 6 |
| × | 2 |
| | 12 |

(*b*)

| | |
|---|---|
| | 9 |
| × | 3 |
| | 27 |

(*c*)

| | |
|---|---|
| | 10 |
| × | 4 |
| | 40 |

(*d*)

| | |
|---|---|
| | 2 |
| × | 7 |
| | 14 |

(*e*)

| | |
|---|---|
| | 10 |
| × | 9 |
| | 90 |

## Practice Time 4B

**1.**

| | T | O |
|---|---|---|
| | 3 | 4 |
| × | | 2 |
| | 6 | 8 |

**2.**

| | T | O |
|---|---|---|
| | 2 | 2 |
| × | | 4 |
| | 8 | 8 |

**3.**

| | T | O |
|---|---|---|
| | 3 | 0 |
| × | | 3 |
| | 9 | 0 |

**4.**

| | H | T | O |
|---|---|---|---|
| | 2 | 3 | 3 |
| × | | | 2 |
| | 4 | 6 | 6 |

**5.**

| | H | T | O |
|---|---|---|---|
| | 1 | 2 | 3 |
| × | | | 3 |
| | 3 | 6 | 9 |

**6.**

| | H | T | O |
|---|---|---|---|
| | 4 | 5 | 3 |
| × | | | 1 |
| | 4 | 5 | 3 |

**7.**

| | H | T | O |
|---|---|---|---|
| | 3 | 2 | 2 |
| × | | | 3 |
| | 9 | 6 | 6 |

**8.**

| | H | T | O |
|---|---|---|---|
| | 2 | 1 | 2 |
| × | | | 4 |
| | 8 | 4 | 8 |

## Practice Time 4C

**1.** (*a*)

| | H | T | O |
|---|---|---|---|
| | (7) | (7) | |
| | | 8 | 8 |
| × | | | 9 |
| | 7 | 9 | 2 |

(*b*)

| | H | T | O |
|---|---|---|---|
| | (2) | (2) | |
| | 1 | 6 | 8 |
| × | | | 3 |
| | 5 | 0 | 4 |

(*c*)

| | Th | H | T | O |
|---|---|---|---|---|
| | (5) | (7) | (3) | |
| | | 6 | 9 | 4 |
| × | | | | 8 |
| | 5 | 5 | 5 | 2 |

(*d*)

| | Th | H | T | O |
|---|---|---|---|---|
| | | (1) | (1) | |
| | | 5 | 3 | 4 |
| × | | | | 4 |
| | 2 | 1 | 3 | 6 |

**2.** (*a*) $83 \times 8$.

Write the number in correct column and multiply using the following steps:

| | H | T | O |
|---|---|---|---|
| | | (2) | |
| | | 8 | 3 |
| × | | | 8 |
| | | | 4 |

**Step 1.** Multiply the ones.

3 ones × 8 = 24 ones

= 2 tens 4 ones

Write 4 in ones column and carry over 2 in the tens column.

| | H | T | O |
|---|---|---|---|
| | (6) | (2) | |
| | | 8 | 3 |
| × | | | 8 |
| | 6 | 6 | 4 |

**Step 2.** Multiply the tens and regroup.

8 tens × 8 = 64 tens

64 tens + 2 tens (carried over)

= 66 tens

= 6 hundreds and 6 tens

Write 6 in the tens column and carry over 6 in the hundreds column.

Thus, $83 \times 8 = 664$.

(*b*) 77 × 6.

Write the number in correct column and multiply using the following steps:

| | H | T | O |
|---|---|---|---|
| | | (4) | |
| | | 7 | 7 |
| × | | | 6 |
| | | | 2 |

**Step 1.** Multiply the ones.

8 tens × 8 = 64 tens

7 ones × 6 = 42 ones

= 4 tens 2 ones

Write 2 in ones column and carry over 4 in the tens column.

**Step 2.** Multiply the tens and regroup.

7 tens × 6 = 42 tens

42 tens + 4 tens (carried over)

= 46 tens.

= 4 hundreds 6 tens.

| | H | T | O |
|---|---|---|---|
| | (4) | (4) | |
| | | 7 | 7 |
| × | | | 6 |
| | 4 | 6 | 2 |

Write 6 in the tens column and carry over 4 in the hundreds column.

Thus, 77 × 6 = 462.

(*c*) 305 × 2.

Write the number in correct column and multiply using the following steps:

| | H | T | O |
|---|---|---|---|
| | | (1) | |
| | 3 | 0 | 5 |
| × | | | 2 |
| | | | 0 |

**Step 1.** Multiply the ones.

5 ones × 2 = 10 ones

= 1 tens 0 ones

Write 0 in ones column and carry over 1 in the tens column.

**Step 2.** Multiply the tens.

0 tens × 2 = 0 tens

0 tens + 1 tens (carried over)

= 1 tens.

| | H | T | O |
|---|---|---|---|
| | | (1) | |
| | 3 | 0 | 5 |
| × | | | 2 |
| | 6 | 1 | 0 |

Write 1 in the tens column.

**Step 3.** Multiply the hundreds.

3 hundreds × 2

= 6 hundreds

Write 6 in the tens column.

| | H | T | O |
|---|---|---|---|
| | | (1) | |
| | 3 | 0 | 5 |
| × | | | 2 |
| | 6 | 1 | 0 |

Thus, 305 × 2 = 610

(*d*), (*e*), (*f*) Same as above part (*c*).

## Practice Time 4D

**1.** (*a*)

| | H | T | O |
|---|---|---|---|
| | | 2 | 1 |
| × | | 3 | 4 |
| | | 8 | 4 |
| + | 6 | 3 | 0 |
| | 7 | 1 | 4 |

(*b*)

| | Th | H | T | O |
|---|---|---|---|---|
| | | | 4 | 2 |
| × | | | 4 | 2 |
| | | | 8 | 4 |
| + | 1 | 6 | 8 | 0 |
| | 1 | 7 | 6 | 4 |

(*c*)

| | Th | H | T | O |
|---|---|---|---|---|
| | | | 2 | 3 |
| × | | | 5 | 6 |
| | | 1 | 3 | 8 |
| + | 1 | 1 | 5 | 0 |
| | 1 | 2 | 8 | 8 |

(*d*)

| | Th | H | T | O |
|---|---|---|---|---|
| | | | 7 | 3 |
| × | | | 6 | 4 |
| | | 2 | 9 | 2 |
| + | 4 | 3 | 8 | 0 |
| | 4 | 6 | 7 | 2 |

(*e*)

| | Th | H | T | O |
|---|---|---|---|---|
| | | 2 | 0 | 4 |
| × | | | 1 | 2 |
| | | 4 | 0 | 8 |
| + | 2 | 0 | 4 | 0 |
| | 2 | 4 | 4 | 8 |

(*f*)

| | Th | H | T | O |
|---|---|---|---|---|
| | | 3 | 4 | 3 |
| × | | | 2 | 2 |
| | | 6 | 8 | 6 |
| + | 6 | 8 | 6 | 0 |
| | 7 | 5 | 4 | 6 |

(*g*)

| | Th | H | T | O |
|---|---|---|---|---|
| | | 2 | 1 | 6 |
| × | | | 4 | 3 |
| | | 6 | 4 | 8 |
| + | 8 | 6 | 4 | 0 |
| | 9 | 2 | 8 | 8 |

(*h*)

| | Th | H | T | O |
|---|---|---|---|---|
| | | 2 | 7 | 3 |
| × | | | 2 | 7 |
| | 1 | 9 | 1 | 1 |
| + | 5 | 4 | 6 | 0 |
| | 7 | 3 | 7 | 1 |

**2.** (*a*) 14 × 22.

Expand the multiplier 22 as 2 tens + 2 ones now, follow these steps:

| | H | T | O |
|---|---|---|---|
| | | 1 | 4 |
| × | | 2 | 2 |
| | | 2 | 8 |

**Step 1.** Multiply 14 by 2 ones.

14 × 2 ones = 28 ones

Write 28 as the first line product.

**Step 2.** Multiply 14 by 2 tens.

14 × 2 tens = 280

Write 280 as the second line product.

| | H | T | O |
|---|---|---|---|
| | | 1 | 4 |
| × | | 2 | 2 |
| | | 2 | 8 |
| | 2 | 8 | 0 |

**Step 3.** Multiply the hundreds.

14 × 2 tens = 280

3 hundreds × 2 = 6 hundreds

Write 6 in the tens column.

Thus, 305 × 2 = 610

| | H | T | O |
|---|---|---|---|
| | | 1 | 4 |
| × | | 2 | 2 |
| | | 2 | 8 |
| + | 2 | 8 | 0 |
| | 3 | 0 | 8 |

(*b*) 31 × 16.

Expand the multiplier 16 as 1 tens + 6 ones now, follow these steps:

**Step 1.** Multiply 31 by 6 ones.

31 × 6 ones = 186 ones

Write 186 as the first line product.

| | H | T | O |
|---|---|---|---|
| | | 3 | 1 |
| × | | 1 | 6 |
| | 1 | 8 | 6 |

**Step 2.** Multiply 31 by 1 ten.

31 × 1 ten = 310

Write 310 as the second line product.

| | H | T | O |
|---|---|---|---|
| | | 3 | 1 |
| × | | 1 | 6 |
| | 1 | 8 | 6 |
| | 3 | 1 | 0 |

**Step 3.** Add the products obtained in step and step 2.

186 + 310 = 496

Thus, 31 × 16 = 496.

| | H | T | O |
|---|---|---|---|
| | | 3 | 1 |
| × | | 1 | 6 |
| | 1 | 8 | 6 |
| + | 3 | 1 | 0 |
| | 4 | 9 | 6 |

(*c*) and (*d*) → Same as above part (*a*) and (*b*).

(*e*) 234 × 12.

Expand the multiplier 12 as 10 + 2 = 1 ten + 2 ones and multiply 234 with it by using the following steps:

**Step 1.** Multiply 234 by 2 ones.

234 × 2 ones = 468 ones

Write 468 as the first line product.

| | Th | H | T | O |
|---|---|---|---|---|
| | | 2 | 3 | 4 |
| × | | | 1 | 2 |
| | | 4 | 6 | 8 |

**Step 2.** Multiply 234 by 1 ten.

234 × 1 ten = 234 × 10 ones = 2340

Write 2340 as second line product.

| | Th | H | T | O |
|---|---|---|---|---|
| | | 2 | 3 | 4 |
| × | | | 1 | 2 |
| | | 4 | 6 | 8 |
| + | 2 | 3 | 4 | 0 |

**Step 3.** Add the products.

468 + 2340 = 2808

Thus, 234 × 12 = 2808.

| | Th | H | T | O |
|---|---|---|---|---|
| | | 2 | 3 | 4 |
| × | | | 1 | 2 |
| | | 4 | 6 | 8 |
| + | 2 | 3 | 4 | 0 |
| | 2 | 8 | 0 | 8 |

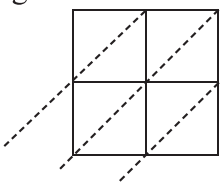
(*f*), (*g*) and (*h*) → Same as above part (*e*).

**3.** (*a*) 21 × 11.

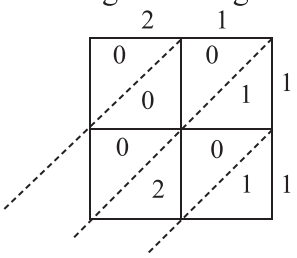
Multiply 21 by 11 using lattice multiplication step by step as shown below:

**Step 1.** Since 21 and 11 are both 2-digit numbers. So, draw a 2 × 2 grid.

Also, draw diagonal lines in each box as shown.

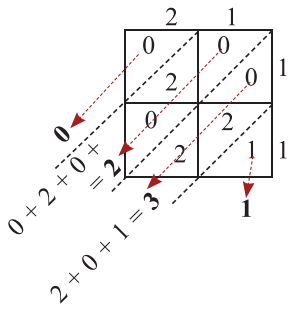


**Step 2.** Write the multiplicand on top and the multiplier on the right of the grid as shown.




**Step 3.** Multiply the numbers and write the tens place digit in the upper triangle of each box and the ones digit at the lower triangle of each box.

**Step 4.** Add the numbers of boxes diagonally to find the answer while adding the numbers diagonally.




Thus, 21 × 11 = 231

(*b*) and (*c*) → Same as above part (*a*).

## Think and Answer (Page 78)

Given multiplication fact [10] × 100 = [1000]

Pair is 10 and 1000.

## Practice Time 4E

**1.** (*a*) 100 × 10 = 1000 (*b*) 6 × 100 = 600

(*c*) 7 × 500 = 3500 (*d*) 700 × 3 = 2100

(*e*) 8 × 60 = 480 (*f*) 11 × 60 = 660

(*g*) 5 × 20 = 100 (*h*) 8 × 40 = 320

(*i*) 6 × 20 = 120

**2.** (*a*) 96 × 9.

**Step 1.** Write 96 as 90 + 6.

**Step 2.** Multiply each term of expanded form by 9 and add the products so obtained.

| | | | |
|---|---|---|---|
| 90 × 9 = | 8 | 1 | 0 |
| 6 × 9 = + | | 5 | 4 |
| | 8 | 6 | 4 |

Thus, 96 × 9 = 864

(*c*) 36 × 4.

**Step 1.** Write 36 as 30 + 6.

**Step 2.** Multiply each term of expanded form by 4 and add the products so obtained.

| | | | |
|---|---|---|---|
| 30 × 4 = | 1 | 2 | 0 |
| 6 × 4 = + | | 2 | 4 |
| | 1 | 4 | 4 |

Thus, 36 × 4 = 144

(*b*), (*d*), (*e*) and (*f*) → Same as part (*a*), and (*c*).

**3.** (*a*) 50 × 10 = 500 (*b*) 10 × 16 = 160
(*c*) 12 × 30 = 360 (*d*) 20 × 60 = 1200
(*e*) 124 × 10 = 1240 (*f*) 8 × 100 = 800

**4.** (*a*) 20 × 700 = 14000 (*b*) 500 × 16 = 8000
(*c*) 900 × 9 = 8100 (*d*) 200 × 19 = 3800
(*e*) 31 × 300 = 9300 (*f*) 17 × 100 = 1700

## Practice Time 4F

**1.** (*a*) 11 × 1 = 11 (*b*) 28 × 1 = 28
(*c*) 15 × 6 = 6 × 15 (*d*) 25 × 39 = 39 × 25
(*e*) 0 × 29 = 0 (*f*) 175 × 0 = 0

**2.** (*a*) 14 × 8 = 112 = 8 × 14 (*b*) 53 × 7 = 371 = 7 × 53
(*c*) 42 × 16 = 672 = 16 × 42
(*d*) 14 × 20 = 280 = 20 × 14

**3.** (*a*) 55 × 24.

55 × 24 = 1320

Thus, the actual product is 1320.

Now, 55 rounded off to the nearest 10 is 60.

24 rounded off to the nearest 10 is 20.

Now, 60 × 20 = 1200

Thus, the estimated product = 1200.

| | Th | H | T | O |
|---|---|---|---|---|
| | | | 6 | 0 |
| × | | | 2 | 0 |
| | | | 0 | 0 |
| + | 1 | 2 | 0 | 0 |
| | 1 | 2 | 0 | 0 |

(*b*) 28 × 13.

28 × 13 = 364

Thus, the actual product is 364.

Now, 28 rounded off to the nearest 10 is 30.

13 rounded off to the nearest 10 is 10.

Now, 30 × 10 = 300

Thus, the estimated product = 300.

| | H | T | O |
|---|---|---|---|
| | | 3 | 0 |
| × | | 1 | 0 |
| | | 0 | 0 |
| + | 3 | 0 | 0 |
| | 3 | 0 | 0 |

(*c*) 63 × 34.

63 × 34 = 2142

Thus, the actual product is 2142.

Now, 63 rounded off to the nearest 10 is 60.

34 rounded off to the nearest 10 is 30.

Now, 60 × 30 = 1800

Thus, the estimated product = 1800.

| | Th | H | T | O |
|---|---|---|---|---|
| | | | 6 | 0 |
| × | | | 3 | 0 |
| | | | 0 | 0 |
| + | 1 | 8 | 0 | 0 |
| | 1 | 8 | 0 | 0 |

(*d*) 44 × 33.

44 × 33 = 1452

Thus, the actual product is 1452.

Now, 44 rounded off to the nearest 10 is 40.

33 rounded off to the nearest 10 is 30.

Now, 40 × 30 = 1200

Thus, the estimated product = 1200.

| | Th | H | T | O |
|---|---|---|---|---|
| | | | 4 | 0 |
| × | | | 3 | 0 |
| | | | 0 | 0 |
| + | 1 | 2 | 0 | 0 |
| | 1 | 2 | 0 | 0 |

(*e*), (*f*), (*g*) and (*h*) → Same as above explanations.

## Practice Time 4G

**1.** Number of students in a class = 46
Number of each student contributes = ₹25
Total money collected in the class = 46 × 25 = ₹1150
Therefore, Total money collected in the class is ₹1150.

| | Th | H | T | O |
|---|---|---|---|---|
| | | | 4 | 6 |
| × | | | 2 | 5 |
| | | 2 | 3 | 0 |
| + | | 9 | 2 | 0 |
| | 1 | 1 | 5 | 0 |

**2.** Number of matchsticks in one matchbox = 50
Number of matchboxes = 73
50 × 73 = 3650 matchsticks
Therefore, 73 matchboxes contains 3650 matchsticks.

| | Th | H | T | O |
|---|---|---|---|---|
| | | | 5 | 0 |
| × | | | 7 | 3 |
| | | 1 | 5 | 0 |
| + | 3 | 5 | 0 | 0 |
| | 3 | 6 | 5 | 0 |

**3.** Number of paper clips in one packet = 184
Number of packets = 24
So, the number of paper clips in 24 packets = 184 × 24
= 4416 paper clips.
Therefore, 24 packets contain 4416 paper clips.

| | Th | H | T | O |
|---|---|---|---|---|
| | | 1 | 8 | 4 |
| × | | | 2 | 4 |
| | | 7 | 3 | 6 |
| + | 3 | 6 | 8 | 0 |
| | 4 | 4 | 1 | 6 |

**4.** Number of beads in one garland = 135
Number of garlands = 36
So, the number of beads in 36 garlands = 135 × 36
= 4860 beads.
Therefore, 36 garlands contain 4860 beads.

| | Th | H | T | O |
|---|---|---|---|---|
| | | 1 | 3 | 5 |
| × | | | 3 | 6 |
| | | 8 | 1 | 0 |
| + | 4 | 0 | 5 | 0 |
| | 4 | 8 | 6 | 0 |

**5.** Number of slabs in one box of chocolates = 24
Number of boxes = 134
So, the number of slabs in 134 boxes = 24 × 134 = 3216 slabs.
Therefore, 134 boxes contain 3216 slabs.

| | Th | H | T | O |
|---|---|---|---|---|
| | | 1 | 3 | 4 |
| × | | | 2 | 4 |
| | | 5 | 3 | 6 |
| + | 2 | 6 | 8 | 0 |
| | 3 | 2 | 1 | 6 |

**6.** Cost of one wooden chair = ₹175
Cost of 34 such chairs
= ₹175 × 34 = ₹5950.
Therefore, 34 chairs cost is ₹5950.

| | Th | H | T | O |
|---|---|---|---|---|
| | | 1 | 7 | 5 |
| × | | | 3 | 4 |
| | | 7 | 0 | 0 |
| + | 5 | 2 | 5 | 0 |
| | 5 | 9 | 5 | 0 |

## Mental Maths (Page 81)

**1.**

| | | | | |
|---|---|---|---|---|
| 3 | × | 3 | = | 9 |
| × | | × | | × |
| 100 | | 15 | | 10 |
| = | | = | | = |
| 300 | | 45 | × | 90 | = | 4050 |

**2.**

| | | | | |
|---|---|---|---|---|
| 8 | × | 9 | = | 72 |
| × | | | | × |
| 10 | = | 2 | × | 5 |
| = | | | | = |
| 80 | | | | 360 |

## Chapter Assessment

**1.** (*a*) – (*i*) The place value of 8 in 9834 is = 8 × 100
(*b*) – (*ii*) Five ₹20 notes = 5 × 20 = ₹100

**2.** (*a*) 9 × 1 = 9
(*b*) 4 × 0 = 0
(*c*) 8 × 0 = 0
(*d*) 0 × 0 = 0
(*e*) 5 × 1 = 5
(*f*) 8 × 1 = 8
(*g*) 9 × 7 = 7 × 9
(*h*) 4 × 5 = 5 × 4
(*i*) 7 × 8 = 8 × 7

**3.** (*a*)
1 × 8 = 8 (10 – 2 = 8)
2 × 8 = 16 (20 – 4 = 16)
3 × 8 = 24 (30 – 6 = 24)
4 × 8 = 32 (40 – 8 = 32)
5 × 8 = 40 (50 – 10 = 40)
6 × 8 = 48 (60 – 12 = 48)
7 × 8 = 56 (70 – 14 = 56)
8 × 8 = 64 (80 – 16 = 64)
9 × 8 = 72 (90 – 18 = 72)
10 × 8 = 80 (100 – 20 = 80)

(*b*)
1 × 9 = 9 (0 + 9 = 9)
2 × 9 = 18 (1 + 8 = 9)
3 × 9 = 27 (2 + 7 = 9)
4 × 9 = 36 (3 + 6 = 9)
5 × 9 = 45 (4 + 5 = 9)
6 × 9 = 54 (5 + 4 = 9)
7 × 9 = 63 (6 + 3 = 9)
8 × 9 = 72 (7 + 2 = 9)
9 × 9 = 81 (8 + 1 = 9)
10 × 9 = 90 (9 + 0 = 9)

**4.** (*a*) 72 × 1 = 72
(*b*) 67 × 23 = 1541

| | Th | H | T | O |
|---|---|---|---|---|
| | | | 6 | 7 |
| × | | | 2 | 3 |
| | | 2 | 0 | 1 |
| + | 1 | 3 | 4 | 0 |
| | 1 | 5 | 4 | 1 |

(*c*) 73 × 36 = 2628

| | Th | H | T | O |
|---|---|---|---|---|
| | | | 7 | 3 |
| × | | | 3 | 6 |
| | | 4 | 3 | 8 |
| + | 2 | 1 | 9 | 0 |
| | 2 | 6 | 2 | 8 |

(*d*) and (*e*) — Same as part (*b*).

**5.** (*a*) Number of passengers a aeroplane can carry = 485
Number of aeroplanes = 17
So, number of passengers that 17 aeroplanes can carry = 485 × 17 = 8245
Therefore, 17 aeroplanes can carry 8245 passengers.

| | Th | H | T | O |
|---|---|---|---|---|
| | | 4 | 8 | 5 |
| × | | | 1 | 7 |
| | 3 | 3 | 9 | 5 |
| + | 4 | 8 | 5 | 0 |
| | 8 | 2 | 4 | 5 |

(*b*) The cost of one water bottle = ₹25
The cost of 10 such water bottles = ₹25 × 10 = ₹250.
Therefore, the cost of 10 water bottles is ₹250.

(*c*) Number of toys in one box = 12
Number of toys in 382 boxes = 382 × 12 = 4584
Therefore, 4584 toys are there in all.

| | Th | H | T | O |
|---|---|---|---|---|
| | | 3 | 8 | 2 |
| × | | | 1 | 2 |
| | | 7 | 6 | 4 |
| + | 3 | 8 | 2 | 0 |
| | 4 | 5 | 8 | 4 |

(*d*) Number of chairs in each row = 9
Number of chairs in 28 rows = 28 × 9 = 252
Therefore, 252 chairs are there in all.

## Brain Sizzlers (Page 83)

**1.**

| × | 3 | 5 | 6 |
|---|---|---|---|
| 9 | 27 | 45 | 54 |
| 8 | 24 | 40 | 48 |
| 7 | 21 | 35 | 42 |

**2.**

| × | 5 | 6 | 3 |
|---|---|---|---|
| 9 | 45 | 54 | 27 |
| 4 | 20 | 24 | 12 |
| 2 | 10 | 12 | 6 |

# CHAPTER 5 : DIVISION

## Let's Recall

**1.** (*a*) 16 ÷ 4 = 4 ; Each child gets 4 ice-creams.
(*b*) 9 ÷ 3 = 3 ; Each child gets 3 lollipops.

**2.** (*a*) 10 ÷ 5 = 2 (*b*) 18 ÷ 3 = 6
(*c*) 20 ÷ 4 = 5

**3.** (*a*) 25 ÷ 5 = 5 (*b*) 21 ÷ 3 = 7

## Think and Answer (Page 87)

Distance travelled by a snail in 5 minutes = 30 inches
Distance travelled by a snail in 1 minute
= 30 inches ÷ 5 = 6 inches.

## Quick Check (Page 87)

**1.** 93 ÷ 31 = 3

93 − 31 = 62 ← 1
62 − 31 = 31 ← 2
31 − 31 = 0 ← 3

**2.** 32 ÷ 8 = 4

32 − 8 = 24 ← 1
24 − 8 = 16 ← 2
16 − 8 = 8 ← 3
8 − 8 = 0 ← 4

**3.** 420 ÷ 105 = 4

420 − 105 = 315 ← 1
315 − 105 = 210 ← 2
210 − 105 = 105 ← 3
105 − 105 = 0 ← 4

## Practice Time 5A

**1.** (*a*) 12 ÷ 2 = 6 (*b*) 18 ÷ 6 = 3
**2.** (*a*) 15 ÷ 3 = 5 (*b*) 20 ÷ 5 = 4
(*c*) 36 ÷ 6 = 6

**3.** (*a*) 18 – 2 = 16, 16 – 2 = 14, 14 – 2 = 12,
12 – 2 = 10, 10 – 2 = 8, 8 – 2 = 6,
6 – 2 = 4, 4 – 2 = 2, 2 – 2 = 0, *i.e.*, 9 times
(*b*) 27 – 3 = 24, 24 – 3 = 21, 21 – 3 = 18,
18 – 3 = 15, 15 – 3 = 12, 12 – 3 = 9,
9 – 3 = 6, 6 – 3 = 3, 3 – 3 = 0, *i.e.*, 9 times
(*c*) 28 – 4 = 24, 24 – 4 = 20, 20 – 4 = 16,
16 – 4 = 12, 12 – 4 = 8, 8 – 4 = 4, 4 – 4 = 0,
*i.e.*, 7 times
(*d*) 40 – 8 = 32, 32 – 8 = 24, 24 – 8 = 16,
16 – 8 = 8, 8 – 8 = 0, *i.e.*, 5 times

**4.** (*a*) 48 – 6 = 42, 42 – 6 = 36, 36 – 6 = 30,
30 – 6 = 24, 24 – 6 = 18, 18 – 6 = 12,
12 – 6 = 6, 6 – 6 = 0
∴ 48 ÷ 6 = 8
(*b*) 65 – 13 = 52, 52 – 13 = 39, 39 – 13 = 26,
16 – 13 = 13, 13 – 13 = 0
∴ 65 ÷ 13 = 5
(*c*) 60 – 15 = 45, 45 – 15 = 30, 30 – 15 = 15,
15 – 15 = 0
∴ 60 ÷ 15 = 4
(*d*), (*e*) and (*f*) — Same as above
(*g*) 318 – 106 = 212, 212 – 106 = 106,
106 – 106 = 0
∴ 318 ÷ 106 = 3
(*h*) 500 – 100 = 400, 400 – 100 = 300,
300 – 100 = 200, 200 – 100 = 100,
100 – 100 = 0
∴ 500 ÷ 100 = 5

## Think and Answer (Page 89)

| | Dividend | Divisor | Quotient | Division fact |
|---|---|---|---|---|
| **1.** | 32 | 4 | 8 | 32 ÷ 4 = 8 |
| **2.** | 63 | 7 | 9 | 63 ÷ 7 = 9 |
| **3.** | 30 | 3 | 10 | 30 ÷ 3 = 10 |
| **4.** | 56 | 4 | 14 | 56 ÷ 4 = 14 |
| **5.** | 60 | 5 | 12 | 60 ÷ 5 = 12 |

## Practice Time 5B

**1.** (*a*) 4 × 8 = 32 (*b*) 9 × 6 = 54 (*c*) 7 × 8 = 56
32 ÷ 4 = 8 54 ÷ 6 = 9 56 ÷ 8 = 7
32 ÷ 8 = 4 54 ÷ 9 = 6 56 ÷ 7 = 8

**2.** (*a*) $40 \div 5 = 8$
$8 \times 5 = 40$

(*b*) $44 \div 11 = 4$
$4 \times 11 = 44$

(*c*) $48 \div 8 = 6$
$6 \times 8 = 48$

**3.**

| | Multiplication fact | Division fact |
|---|---|---|
| (*a*) | $3 \times 4 = 12$ | $12 \div 4 = 3$ |
| | $4 \times 3 = 12$ | $12 \div 3 = 4$ |
| (*b*) | $5 \times 10 = 50$ | $50 \div 10 = 5$ |
| | $10 \times 5 = 50$ | $50 \div 5 = 10$ |
| (*c*) | $5 \times 7 = 35$ | $35 \div 7 = 5$ |
| | $7 \times 5 = 35$ | $35 \div 5 = 7$ |
| (*d*) | $8 \times 5 = 40$ | $40 \div 5 = 8$ |
| | $5 \times 8 = 40$ | $40 \div 8 = 5$ |

**4.** (*a*) $43 \div 1 = \underline{43}$ (*b*) $0 \div 14 = \underline{0}$
(*c*) $10 \div 10 = \underline{1}$ (*d*) $71 \div \underline{1} = 71$
(*e*) $26 \div 26 = \underline{1}$ (*f*) $38 \div 1 = \underline{38}$

**5.** (*a*) $32 \div 8 =$ 4 (*b*) $48 \div 12 =$ 4
(*c*) $49 \div 7 =$ 7 (*d*) $54 \div 9 =$ 6
(*e*) $15 \div 5 =$ 3 (*f*) $27 \div 9 =$ 3
(*g*) $18 \div 2 =$ 9 (*h*) $30 \div 3 =$ 10

**6.** (*a*)

Dividend
$8\overline{)67}\,(8$ ← Quotient
Divisor $-\,64$
$3$ ← Remainder
$Q = 8, R = 3$

**Checking:**
Quotient × Divisor + Remainder = $8 \times 8 + 3$
$= 64 + 3$
$= 67 =$ Dividend
Thus, the answer is correct.

(*b*)
$9\overline{)50}\,(5$
$-\,45$
$5$
$Q = 5, R = 5$

**Checking:**
Quotient × Divisor + Remainder = $5 \times 9 + 5$
$= 45 + 5$
$= 50 =$ Dividend
Thus, the answer is correct.

(*c*)
$3\overline{)25}\,(8$
$-\,24$
$1$
$Q = 8, R = 1$

**Checking:**
Quotient × Divisor + Remainder = $8 \times 3 + 1$
$= 24 + 1$
$= 25 =$ Dividend
Thus, the answer is correct.

(*d*)
$6\overline{)38}\,(6$
$-\,36$
$2$
$Q = 6, R = 2$

**Checking:**
Quotient × Divisor + Remainder = $6 \times 6 + 2$
$= 36 + 2$
$= 38 =$ Dividend
Thus, the answer is correct.

## Think and Answer (Page 93)

**1.** $Q = 12$, $D = 4$ and $R = 0$
Dividend = (Quotient × Divisor) + Remainder
$= 12 \times 4 + 0$
Dividend = 48

**2.** $Q = 320$, $D = 3$ and $R = 0$
Dividend = (Quotient × Divisor) + Remainder
$= 320 \times 3 + 2 = 960 + 2 = 962$

## Practice Time 5C

**1.** $67 \div 6$

**Step 1.** First, arrange the number in the long-division form.
**Step 2.** Then decide 6 tens by 6.
We know that, $6 \times 1 = 6$.
So, 6 tens ÷ 6 = 1 ten

$6\overline{)67}\,(11 \rightarrow Q$
$-\,6\downarrow$
$07$
$-\;\;6$
$1 \rightarrow R$

Write 1 in the tens place of the quotient and write 6 in the tens place below the dividend.
**Step 3.** Subtract the digits of the column.
$6 - 6 = 0$
**Step 4.** Now, $0 < 6$, So bring down 7 ones.
**Step 5.** Divide 7 ones by 6.
We know that $6 \times 1 = 6 < 7$.
Write 1 in the ones place of the quotient and 6 in the ones place below the dividend as shown.

**Step 6.** Subtract the digits of the ones column.

$$7 - 6 = 1$$

Thus, quotient (Q) = 11, remainder = 1

**Checking:**

Quotient × Divisor + Remainder = 11 × 6 + 1
= 66 + 1
= 67 = Dividend

Thus, the answer is correct.

**2.** to 8. — Same as question 1.

## Think and Answer (Page 95)

**1.**

$$\begin{array}{r} 3\overline{)\,7\;6\;(\,②⑤} \\ -\,6\downarrow\phantom{\;(②⑤} \\ \hline \phantom{-}\,①\;6\phantom{\;(②⑤} \\ -\,①⑤\phantom{\;(②⑤} \\ \hline \phantom{-\,}\,① \end{array}$$

**2.**

$$\begin{array}{r} 4\overline{)\,9\;8\;4\;(\,②④⑥} \\ -\,⑧\downarrow\phantom{\;(②④⑥} \\ \hline \phantom{-}\,①\;8\phantom{\;(②④⑥} \\ -\,①⑥\phantom{\;(②④⑥} \\ \hline \phantom{-\,}\,②④ \\ -\;\;②④ \\ \hline \phantom{-\,}\,⓪ \end{array}$$

**3.**

$$\begin{array}{r} 7\overline{)\,5\;7\;4\;9\;(\,⑧②①} \\ -\,5\;6\downarrow\phantom{\;(②①} \\ \hline \phantom{-}\,①\;4\phantom{\;(②①} \\ -\;\;①④\phantom{\;(②①} \\ \hline \phantom{-\,}\,⓪\;9 \\ -\;\;\;⓪⑦ \\ \hline \phantom{-\,}\,② \end{array}$$

## Practice Time 5D

**1.** 63 ÷ 4

$$\begin{array}{r} 4\overline{)\,6\;3\;(\,15 \rightarrow Q} \\ -\,4\downarrow\phantom{\;(15 \rightarrow Q} \\ \hline \phantom{-}\,2\;3\phantom{\;(15 \rightarrow Q} \\ -\,2\;0\phantom{\;(15 \rightarrow Q} \\ \hline \phantom{-}\,0\;3 \rightarrow R \end{array}$$

**Checking:**

Quotient × Divisor + Remainder = 15 × 4 + 3
= 60 + 3
= 63 = Dividend

Thus, the answer is correct.

**2.** 89 ÷ 5

$$\begin{array}{r} 5\overline{)\,8\;9\;(\,17 \rightarrow Q} \\ -\,5\downarrow\phantom{\;(17 \rightarrow Q} \\ \hline \phantom{-}\,3\;9\phantom{\;(17 \rightarrow Q} \\ -\,3\;5\phantom{\;(17 \rightarrow Q} \\ \hline \phantom{-}\,\;4 \rightarrow R \end{array}$$

**Checking:**

Quotient × Divisor + Remainder = 17 × 5 + 4
= 85 + 4
= 89 = Dividend

Thus, the answer is correct.

**3.** to **6.** — Same as above.

**7.** 803 ÷ 6

$$\begin{array}{r} 6\overline{)\,8\;0\;3\;(\,133 \rightarrow Q} \\ -\,6\downarrow\phantom{\;(133 \rightarrow Q} \\ \hline \phantom{-}\,2\;0\phantom{\;(133 \rightarrow Q} \\ -\,1\;8\downarrow\phantom{\;(133 \rightarrow Q} \\ \hline \phantom{-}\,0\;2\;3\phantom{\;(133 \rightarrow Q} \\ -\;\;1\;8\phantom{\;(133 \rightarrow Q} \\ \hline \phantom{-}\,0\;5 \rightarrow R \end{array}$$

**Checking:**

Quotient × Divisor + Remainder = 133 × 6 + 5
= 798 + 5
= 803 = Dividend

Thus, the answer is correct.

**8.** to **16.** — Same as above.

**17.** 4002 ÷ 6

$$\begin{array}{r} 6\overline{)\,4\;0\;0\;2\;(\,667 \rightarrow Q} \\ -\,3\;6\downarrow\phantom{\;(667 \rightarrow Q} \\ \hline \phantom{-}\,0\;4\;0\phantom{\;(667 \rightarrow Q} \\ -\;\;3\;6\downarrow\phantom{\;(667 \rightarrow Q} \\ \hline \phantom{-}\,0\;4\;2\phantom{\;(667 \rightarrow Q} \\ -\;\;\;4\;2\phantom{\;(667 \rightarrow Q} \\ \hline \phantom{-}\,\;0 \rightarrow R \end{array}$$

**Checking:**

Quotient × Divisor + Remainder = 667 × 6 + 0
= 4002 + 0
= 4002 = Dividend

Thus, the answer is correct.

**18.** to **20.** — Same as above.

## Think and Answer (Page 96)

412 ÷ 10

$$\begin{array}{r} 10\overline{)\,4\;1\;2\;(\,41 \rightarrow Q} \\ -\,4\;0\downarrow\phantom{\;(41 \rightarrow Q} \\ \hline \phantom{-}\,0\;1\;2\phantom{\;(41 \rightarrow Q} \\ -\;\;1\;0\phantom{\;(41 \rightarrow Q} \\ \hline \phantom{-}\,0\;2 \rightarrow R \end{array}$$

41 packets and 2 pencils are left.

## Practice Time 5E

| | Dividend | Divisor | Quotient | Remainder |
|---|---|---|---|---|
| 1. | 50 | 10 | 5 | 0 |
| 2. | 478 | 10 | 47 | 8 |
| 3. | 379 | 10 | 37 | 9 |
| 4. | 1265 | 100 | 12 | 65 |
| 5. | 4278 | 100 | 42 | 78 |
| 6. | 8000 | 100 | 80 | 0 |

## Practice Time 5F

**1.** Total no. of legs = 84
Number of legs of a cow = 4
Number of cows = 84 ÷ 4 = 21
Thus, 21 cows were there.

$$\begin{array}{r} 21 \\ 4\overline{)84} \\ -8\downarrow \\ \hline 04 \\ -\ 4 \\ \hline 0 \end{array}$$

**2.** The cost of 3 clocks = ₹825
The cost of 1 clock = ₹825 ÷ 3
= ₹275
Thus, the cost of 1 clock is ₹275

$$\begin{array}{r} 275 \\ 3\overline{)825} \\ -6\downarrow \\ \hline 22 \\ -21\downarrow \\ \hline 015 \\ -015 \\ \hline 0 \end{array}$$

**3.** Total number of pens = 368
Number of boxes = 7
Number of pens in each box = 368 ÷ 7
Thus, each box contains 52 pens and 4 pens will remain unpacked.

$$\begin{array}{r} 52 \\ 7\overline{)368} \\ -35\downarrow \\ \hline 18 \\ -\ 14 \\ \hline 4 \end{array}$$

**4.** Total number of chairs in an auditorium = 832
Number of rows = 8
Number of chairs in each row
= 832 ÷ 8
Thus, 104 chairs are there in each row.

$$\begin{array}{r} 104 \\ 8\overline{)832} \\ -8\downarrow\downarrow \\ \hline 032 \\ -032 \\ \hline 0 \end{array}$$

**5.** Distance travelled by a car in 6 days
= 636 km
Distance covered by the car in a day
= 636 ÷ 6 = 106 km
Thus, the distance covered by the car in a day is 106 km.

$$\begin{array}{r} 106 \\ 6\overline{)636} \\ -6\downarrow\downarrow \\ \hline 036 \\ -036 \\ \hline 0 \end{array}$$

**6.** Total no. of students = 656
Number of students can sit on a bench = 4
Required benches = 656 ÷ 4 = 164
Thus, 164 benches will be required for 656 students.

$$\begin{array}{r} 164 \\ 4\overline{)656} \\ -4\downarrow \\ \hline 25 \\ -24\downarrow \\ \hline 016 \\ -016 \\ \hline 0 \end{array}$$

**7.** Total collection = ₹735
Number of children = 5
Contribution of each child
= ₹735 ÷ 5 = 147
Thus, each child collect ₹147.

$$\begin{array}{r} 147 \\ 5\overline{)735} \\ -5\downarrow \\ \hline 23 \\ -20\downarrow \\ \hline 035 \\ -\ 35 \\ \hline 0 \end{array}$$

**8.** Total number of sweets = 146
Number of boys = 9
Number of sweets each boy got
= 146 ÷ 9
Thus, each boy got 16 sweets and 2 sweets will remain undivided.

$$\begin{array}{r} 16 \\ 9\overline{)146} \\ -\ 9\downarrow \\ \hline 56 \\ -\ 54 \\ \hline 02 \end{array}$$

**9.** A man earns in a week = ₹994
Since, 1 week = 7 days
∴ A man earns in a day = ₹994 ÷ 7
= ₹142
Thus, man earns ₹142 in one day.

$$\begin{array}{r} 142 \\ 7\overline{)994} \\ -7\downarrow \\ \hline 29 \\ -28\downarrow \\ \hline 014 \\ -014 \\ \hline 0 \end{array}$$

**10.** Total number of straws = 1508
Number of straws in each bundle
= 100
Number of bundles = 1508 ÷ 100
Thus, 15 bundles can be made and 8 straw are left.

$$\begin{array}{r} 15 \\ 100\overline{)1508} \\ -100\downarrow \\ \hline 0508 \\ -\ 500 \\ \hline 08 \end{array}$$

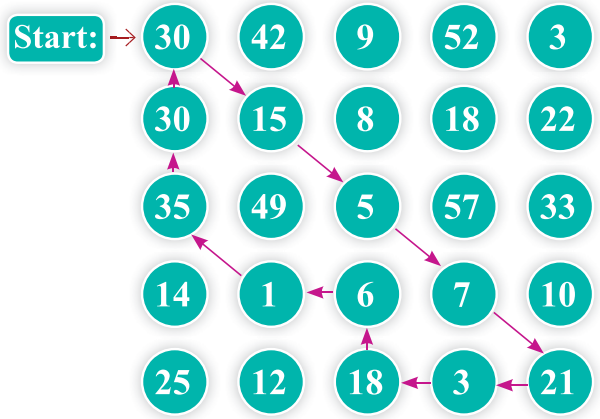
## Practice Time 5G

**1.** Keyword used is went (left). So, choose the operation –.
15 – 2 = 13
Therefore, 13 students attended the class.

**2.** Keyword used is 'in all'. So, choose the operation +.
16 + 13 = 29
Therefore, she buys 29 carrots in all.

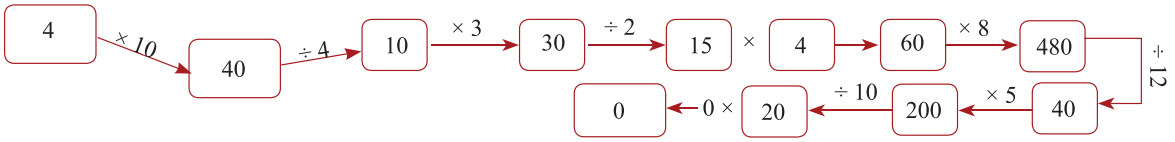
3. The value of '1 unit' is given. To find the value of 'more units', choose the operation ×.
   $8 \times 5 = 40$
   Therefore, 8 pens cost ₹40.
4. The value of '1 unit' is given. To find the value of 'more units', choose the operation ×.
   $25 \times 6 = 150$
   Therefore, 150 mangoes are there in 6 such baskets.
5. The value of 'more units' is given. To find the value of '1 unit', choose the operation ÷.
   $200 \div 10 = 20$
   Therefore, 20 towers can be made.

## Mental Maths (Page 99)




You will reach the number 30.

## Brain Sizzlers (Page 100)




## Chapter Assessment

1. (*a*) – (*iii*) $84 \div 7 = 12$

   (*b*) – (*iii*) If $4424 \div 4 = 1106$, then remainder = 0

   (*c*) – (*ii*) When a number is divided by 10, then the remainder is the ones digit of that number.

   So, in the given numbers the number 1889 has the greatest digit at ones place.
   Hence, when we divide 1889 by 10, we get the greatest remainder, *i.e.*, 9.

```
4)4424(1106
 -4↓
  04
 - 4↓↓
   024
 - 024
     0
```

2. (*a*) False (*b*) True (*c*) False
   (*d*) True (*e*) False

3. (*a*) $492 \div 7$

```
7)492(70 → Q
 -49↓
   02
 - 00
    2 → R
```

$\therefore$ Q = 70, R = 2

**Checking:**
Quotient × Divisor + Remainder = 7 × 70 + 2
= 490 + 2
= 492 = Dividend
Thus, the answer is correct.

(*b*) $747 \div 8$

```
8)747(93 → Q
 -72↓
  027
 - 24
   03 → R
```

$\therefore$ Q = 93, R = 3

**Checking:**
Quotient × Divisor + Remainder = 93 × 8 + 3
= 744 + 3
= 747 = Dividend
Thus, the answer is correct.

(*c*) and (*d*) — Same as part (*a*) and (*b*).

4. (*a*) The cost of 5 toy cars = ₹100
   The cost of 1 toy car = ₹100 ÷ 5
   = ₹20
   Thus, the cost of 1 toy car is ₹20.

```
5)100(20
 -10↓
   00
 - 00
    0
```

   (*b*) The product of two numbers
   = 725
   One number = 5
   Other number = 725 ÷ 5 = 145
   Thus, the other number is 145.

```
5)725(145
 -5↓
  22
 -20↓
  025
 - 25
    0
```

(*c*) 9 students planted trees on earth day = 891

1 student planted trees on earth day = 891 ÷ 9 = 99

Thus, 99 trees were planted by one student.

```
9) 891 (99
 − 81↓
   081
 −  81
     0
```

(*d*) Cost of 6 tickets = ₹540

Cost of 1 ticket = ₹540 ÷ 6

= ₹90

Thus, the cost of 1 ticket is ₹90.

```
6) 540 (90
 − 54↓
     0
 −   0
     0
```

(*e*) Distance covered by an aeroplane in 2 hours = 968 km.

= 968 ÷ 2

= 484 km

Thus the aeroplane flies 484 km in 1 hour.

```
2) 968 (484
 − 8↓
   16
 − 16↓
    08
 −   8
     0
```

(*f*) Total no. of notebooks = 865

Number of notebooks given to each child = 8

Number of notebooks each child will get = 865 ÷ 8

Thus, each child got 108 notebooks and 1 notebook left undistributed.

```
8) 865 (108
 − 8↓↓
   065
 −  64
    01
```

(*g*) Total number of bananas = 2 dozen = 2 × 12 = 24 bananas

(Since, 1 dozen =12 items)

Number of monkeys = 4

Number of bananas each monkey will get = 24 ÷ 4 = 6

Thus, each monkey got 6 bananas.

```
4) 24 (6
 − 24
    0
```

## Maths Fun (Page 102)

**1.** 

12 —×4— 48 —÷6— 8 —−3— 5 —+9— 14

**2.** 

56 —÷8— 7 —×5— 35 —−31— 4 —+11— 15

**3.** 

32 —÷8— 4 —×9— 36 —+20— 56 —−46— 10

**4.** 

120 —÷10— 12 —+8— 20 —×3— 60 —−36— 24

Who has become the new king of the jungle? Lion.

# CHAPTER 6 : FRACTIONS

## Let's Recall

**1.** Equal parts = (*a*) and (*c*)

Unequal parts = (*b*) and (*d*)

**2.** (*a*), (*b*) and (*d*)

## Think and Answer (Page 107)

MATHEMATICS; Total letters = 11

Vowels = 4; Fraction = $\frac{4}{11}$

## Think and Answer (Page 107)

**1.** Total triangles = 25

Shaded triangles = 10

Fraction = $\frac{10}{25}$

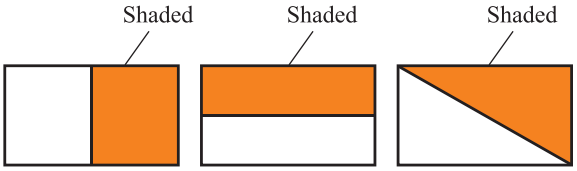
**2.** Total triangles = 25

Unshaded triangles = 15

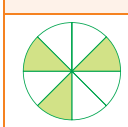
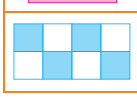
Fraction = $\frac{15}{25}$

## Practice Time 6A (Page 108)

**1.**




**2.**

| | Figure | Number of shaded parts | Total number of equal parts | Fraction for shaded parts | Fraction for unshaded parts |
|---|---|---|---|---|---|
| (*a*) |  | 3 | 8 | $\frac{3}{8}$ | $\frac{5}{8}$ |
| (*b*) |  | 3 | 5 | $\frac{3}{5}$ | $\frac{2}{5}$ |
| (*c*) |  | 4 | 8 | $\frac{4}{8}$ | $\frac{4}{8}$ |

**3.** (*a*) 2 halves make a whole.

(*b*) 3 one-thirds make a whole.

(*c*) 4 quarters make a whole.

(*d*) 5 one-fifths make a whole.

**4.** (*a*) Two-tenths = $\frac{2}{10}$ (*b*) Five-eighths = $\frac{5}{8}$

(*c*) Four-fifths = $\frac{4}{5}$ (*d*) Three-sevenths = $\frac{3}{7}$

**5.** Total number of equal parts of a chocolate = 6

Number of eaten parts = 1

Fraction of the chocolate Ritu ate = $\frac{1}{6}$

**6.** (*a*) Numerator = 4, denominator = 8

Fraction = $\frac{4}{8} = \frac{1}{2}$

(*b*) Numerator = 3, denominator = 14

Fraction = $\frac{3}{14}$

(*c*) Numerator = 8, denominator = 12

Fraction = $\frac{8}{12}$

(*d*) Numerator = 10, denominator = 17

Fraction = $\frac{10}{17}$

## Quick Check (Page 109)

**1.** Total parts = 4

Coloured parts = 2

Fraction = $\frac{2}{4}$

**2.** Total parts = 5

Coloured parts = 2

Fraction = $\frac{2}{5}$

**3.** Total parts = 4

Coloured parts = 2

Fraction = $\frac{6}{9}$

## Practice Time 6B

**2.** (*a*) $8 \div 2 = 4$

So, $\frac{1}{2}$ of $8 = 4$

(*b*) $12 \div 2 = 6$

So, $\frac{1}{2}$ of $12 = 6$

(*c*) $6 \div 2 = 3$

So, $\frac{1}{2}$ of $6 = 3$

(*d*) $14 \div 2 = 7$

So, $\frac{1}{2}$ of $14 = 7$

**3.** (*a*) $18 \div 3 = 6$

So, $\frac{1}{3}$ of $18 = 6$

(*b*) $12 \div 3 = 4$

So, $\frac{1}{3}$ of $12 = 4$

(*c*) $15 \div 3 = 5$

So, $\frac{1}{3}$ of $15 = 5$

(*d*) $6 \div 3 = 2$

So, $\frac{1}{3}$ of $6 = 2$

**4.** (*a*) $4 \div 4 = 1$

So, $\frac{1}{4}$ of $4 = 1$

(*b*) $12 \div 4 = 3$

So, $\frac{1}{4}$ of $12 = 3$

(*c*) $16 \div 4 = 4$

So, $\frac{1}{4}$ of $16 = 4$

(*d*) $8 \div 4 = 2$

So, $\frac{1}{4}$ of $8 = 2$

**5.** (*a*) $\frac{1}{2}$ of $36 = \frac{1}{2} \times 36 = 36 \div 2 = 18$

(*b*) $\frac{1}{3}$ of $63 = \frac{1}{3} \times 63 = 63 \div 3 = 21$

(*c*) $\frac{1}{4}$ of $52 = \frac{1}{4} \times 52 = 52 \div 4 = 13$

(*d*) $\frac{1}{2}$ of $40 = \frac{1}{2} \times 40 = 40 \div 2 = 20$

(*e*) $\frac{1}{3}$ of $51 = \frac{1}{3} \times 51 = 51 \div 3 = 17$

(*f*) $\frac{1}{4}$ of $72 = \frac{1}{4} \times 72 = 72 \div 4 = 18$

**6.** Apples = ₹96 per kg, Orange = ₹120 per kg, Grapes = ₹60 per kg

(*a*) Apples = $\frac{1}{2} \times 96 =$ ₹48,

Oranges = $\frac{1}{3}$ of 120 = ₹40,

Grapes = $\frac{1}{4} \times 60 =$ ₹15.

So, total cost = ₹48 + ₹40 + ₹15 = ₹103

(*b*) Apples = $\frac{1}{4} \times 96 =$ ₹24,

Oranges = $\frac{1}{2} \times 120 =$ ₹60 ,

Grapes = $\frac{1}{3} \times 60 =$ ₹20

So, total cost = ₹24 + ₹60 + ₹20 = ₹104

## Think and Answer (Page 113)

Total number of marbles = 30

Number of marbles he gave to Kareem

$= \frac{1}{5} \times 30 = 6$ marbles

Number of marbles he gave to Kavita

$= \frac{1}{3} \times 30 = 10$ marbles

Therefore, number of marbles Anuj have

$= 30 - (6 + 10) = 30 - 16 = 14$ marbles.

Thus, Kareem has 6 marbles, Kavita has 10 marbles and Anuj has 14 marbles.

## Practice Time 6C

**1.** Total number of questions = 10

Number of solved questions = 7

Number of unsolved questions = 10 – 7 = 3

Fraction of unsolved questions = $\frac{3}{10}$

**2.** Total number of passengers in the bus = 16

Number of passengers who got down = 9

Fraction of the passengers who got down = $\frac{9}{10}$

**3.** Total number of pages = 32

Number of pages Sujoy read = 15

Number of unread pages = 32 – 15 = 17

Fraction of unread pages = $\frac{17}{32}$

**4.** Total number of toffees = 18

(*a*) I ate = $\frac{1}{2}$ of 18 = $\frac{1}{2} \times 18 = 18 \div 2 = 9$

(*b*) I gave to my sister = $\frac{1}{3} \times 18 = 18 \div 3 = 6$

**5.** Total money Raju had = ₹90

Raju spent on stationery = $\frac{1}{3}$ of 90 = 90 ÷ 3 = ₹30

Raju spent on toys = $\frac{1}{3}$ of 90 = 90 ÷ 3 = ₹30

(*a*) He spend on stationery and toys taken together = 30 + 30 = ₹60

(*b*) Money left with Raju = 90 – (30 + 30) 90 – 60 = ₹30

**6.** (*a*) Green colour = $\frac{1}{3}$ (*b*) Saffron colour = $\frac{1}{3}$

(*c*) White colour = $\frac{1}{3}$

## Mental Maths (Page 114)

**1.** Word = DENOMINATOR; Total letters = 11.
Fraction of the word represented by the letter N = $\frac{2}{11}$.

**2.** Total colours of rainbow = 7.

Fraction of each colour in the rainbow = $\frac{1}{7}$.

**3.** Given fraction = $\frac{3}{5}$.

After adding 3 to numerator and 5 to the denominator, we get,

$= \frac{3+3}{5+5} = \frac{6}{10}$

$\therefore$ New fraction = $\frac{6}{10}$.

**4.** Given fraction = $\frac{7}{16}$.

After multiplying the multiply numerator by 3 and adding 10 to the denominator, we get

$= \frac{7 \times 3}{16+10} = \frac{21}{26}$.

New fraction = $\frac{21}{26}$.

**5.** (*a*) $\frac{1}{2}$ of one year = $\frac{1}{2} \times 12 = 6$ months.

(*b*) $\frac{1}{4}$ of an hour = $\frac{1}{4} \times 60 = 15$ minutes.

(*c*) $\frac{1}{3}$ of a a dozen = $\frac{1}{3} \times 12 = 4$ item.

(*d*) $\frac{1}{5}$ of a score = $\frac{1}{5} \times 20 = 4$ items.

## Chapter Assessment

**1.** (*a*) – (*iii*) (*b*) – (*i*)

**2.** (*a*) $\frac{2}{5}$ (*b*) $\frac{1}{4}$ (*c*) $\frac{3}{20}$

**3.** (*a*) $\frac{1}{3}$ of 24 = 24 ÷ 3 = 8

(*b*) $\frac{1}{2}$ of 60 = 60 ÷ 2 = 30

(*c*) $\frac{1}{3}$ of 63 = 63 ÷ 3 = 21

(*d*) $\frac{1}{4}$ of 88 = 88 ÷ 4 = 22

**4.** (*a*) 4 halves make a whole.

(*b*) 3 one-thirds make a whole.

(*c*) 2 quarters make a whole.

(*d*) 5 one-fifths make a whole.

**5.** Number of girls playing in a park = 4

Number of boys playing in a part = 8

Total children = 4 + 18 = 12

Fraction of the children are girls = $\frac{4}{12}$

**6.** Fraction of the waffle did Atul ate = $\frac{1}{3}$

**7.** Total number of pages in a Maths project = 36 pages

Number of pages Riya completed

$= \frac{1}{4} \times 36 = 36 \div 4 = 9$

Number of pages Joe completed

$= \frac{1}{3} \times 36 = 36 \div 3 = 12$

**8.** (*a*) Total parts = 10

Fractional part of the liquid = $\frac{4}{10}$

(*b*) Total parts = 10

Fractional part of the liquid = $\frac{3}{10}$

(*c*) Total parts = 10

Fractional part of the liquid = $\frac{7}{10}$

(*d*) Total parts = 10

Fractional part of the liquid = $\frac{5}{10}$

(*e*) Total parts = 10

Fractional part of the liquid = $\frac{8}{10}$

## Brain Sizzlers (Page 116)

| Input | Brand | Drained water | Fresh water |
|---|---|---|---|
| 20 L | A | 10 L | 10 L |
| 24 L | B | 8 L | 16 L |
| 36 L | C | 9 L | 27 L |

## MODEL TEST PAPER – 1

**1.** (*b*)

| Thousands | Hundreds | Tens | Ones |
|---|---|---|---|
| 7 | 0 | 6 | 9 |

Thus, the number is 7069.

**2.** (*c*) Number of legs of a spider = 8

∴ Total number of legs of 26 spiders = 26 × 8 = 208 legs

**3.** (*c*) The number that is left over in division is called remainder.

**4.** (*c*) 2 halves make a whole.

**5.** (*b*) $\frac{1}{3}$ as 3 – 1 = 2.

**6.** (*a*) 5 beads will put in hundreds rods of an abacus for the number 8531.

**7.** (*b*) There are 9 times can 9 be taken away from 81. As 9 × 9 = 81.

**8.** (*b*) Two-fifths = $\frac{2}{5}$

**9.** (*b*) Weight of a packet of sugar = 1000 g

200 g sugar spreaded on the floor.

∴ Sugar left in the packet = (1000 – 200) g = 800 g

Number of polybags need to pack the remaining sugar = $\frac{800\text{ g}}{200\text{ g}}$ = 4 polybags.

**10.** (*c*) Largest 3-digit number = 999

17 hundreds = 1700

Three thousand twenty-two = 3022

∴ Their their sum = 999 + 1700 + 3022 = 5721

Five thousand seven hundred twenty-one.

**11.** (*a*) We use addition when we put together two or more things.

(*b*) The smallest 4-digit number minus 1 is 999.

(*c*) The number to be divided is called dividend.

(*d*) 5225 + 448 + 0 = 5225 + 448 + 0.

(*e*) The difference between the greatest 4-digit number and smallest 3-digit number is 9899.

(∵ 9999 – 100) = 9899)

(*f*) Divisor × quotient + remainder = Dividend.

**12.** (*a*) Ascending order = 2397 < 3267 < 6501 < 8709 (*b*) Ascending order = 3076 < 4093 < 7804 < 9712
Descending order = 8709 > 6501 > 3267 > 2397 Descending order = 9712 > 7804 > 4093 > 3076

**13.** (*a*) – (*iv*) (*b*) – (*iii*) (*c*) – (*i*) (*d*) – (*ii*)

**14.**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2728 | = | 2 | Thousands | + | 7 | Hundreds | + | 2 | Tens | + | 8 | Ones |
| + 111 | = | 0 | Thousands | + | 1 | Hundred | + | 1 | Ten | + | 1 | One |
| 2839 | = | 2 | Thousands | + | 8 | Hundreds | + | 3 | Tens | + | 9 | Ones |

**15.**

| | | | | |
|---|---|---|---|---|
| **17** | **–** | **7** | **=** | **10** |
| **–** | | **–** | | **–** |
| **6** | **–** | **3** | **=** | **3** |
| **=** | | **=** | | **=** |
| **11** | **–** | **4** | **=** | **7** |

**16.** (*a*) Total number of buttons = 7
Number of red buttons = 3
Required fraction = $\frac{3}{7}$

(*b*) Total number of buttons = 7
Number of blue buttons = 4
Required fraction = $\frac{4}{7}$

**17.** Number of caps made in 6 days of a week = 756
Number of caps made in 1 day = $\frac{756}{6}$ = 126 caps.

**18.** Smallest number = 3078
Greatest number = 8730
Difference = 8730 – 3078 = 5652.

**19.** Total bottles loaded in a delivery van = 6670.
Number of bottles delivered at one shop = 2340.
Number of bottles delivered at another shop = 2300
Number of bottles left in the van
= 6670 – (2340 + 2300) = 6670 – 4640 = 2030

## CHAPTER 7 : GEOMETRY

### Let's Recall

**1.** (*a*) Shape → Square
Meaning → Two-way traffic
(*b*) Shape → Circle
Meaning → No entry
(*c*) Shape → Triangle
Meaning → Left hand curve
(*d*) Shape → Rectangle
Meaning → Electric vehicle charging station.

### Quick Check (Page 120)

**1.** Straight path is the shortest route to go from point X to point Y.
**2.** The shortest path between X and Y is known as a line segment.

### Practice Time 7A

**1.** (*a*) Line segment XY, $\overline{XY}$ (*b*) Line AB, $\overleftrightarrow{AB}$
(*c*) Line MN, $\overleftrightarrow{MN}$ (*d*) Ray PQ, $\overrightarrow{PQ}$
**2.** (*a*) 4 line segments, AB, BC, CD, DA
(*b*) 3 line segments, PQ, QR, PR
(*c*) 5 line segments, GH, HI, IJ, KJ, KG
(*d*) 6 line segments, EF, FG, GH, HI, IJ, JE
**3.** (*a*) 4 lines, AE, BF, CG, DH
**4.** (*a*) The sunlight is an example of ray.
(*b*) Number of line segments = 6.
(*c*) 1 point

### Practice Time 7C

**1.** (*a*) Circle (*b*) Triangle
(*c*) Rectangle (*d*) Square
**2.** (*a*) 8 Triangles (*b*) 13 Triangles
(*c*) 14 Triangles
**3.** (*a*) 3 Rectangles (*b*) 3 Rectangles
(*c*) 7 Rectangles
**4.** (*a*) Square (*b*) Rectangle
(*c*) Circle (*d*) Triangle
**5.** (*a*) It has four corners. Only its opposite sides are equal. It is a rectangle.
(*b*) It has three sides and three corners. It is a triangle.

(*c*) It is a closed figure. It has no corners. It is a circle.

(*d*) It has four equal sides and four corners. It is a Square.

**6.** (*a*) True (*b*) True

(*c*) False (*d*) False

## Quick Check (Page 129)

**1.** Cuboid **2.** Sphere

**3.** Cone **4.** Cylinder

## Practice Time 7D

**1.** (*a*) Circle (*b*) Rectangle

(*c*) Square (*d*) Triangle

**2.** (*a*) yes (*b*) no

(*c*) no (*d*) yes

(*e*) no (*f*) yes

**4.** (*a*) The cost of 5 toy cars = ₹100

The cost of 1 toy car = ₹100 ÷ 5

= ₹20

Thus, the cost of 1 toy car ₹20.

$$5\overline{)100}\,(20$$
$$-10\downarrow$$
$$00$$
$$-\ 00$$
$$0$$

**3.**

| | Shape of the Objects | Number of faces | | Number of edges | Number of vertices |
|---|---|---|---|---|---|
| | | Plane faces | Curved faces | | |
| (*a*) | Cube | 6 | 0 | 12 | 8 |
| (*b*) | Cuboid | 6 | 0 | 12 | 8 |
| (*c*) | Cone | 1 | 1 | 1 | 1 |
| (*d*) | Cylinder | 2 | 1 | 2 | 0 |

**4.** (*a*) Top view (*b*) Side view (*c*) Front view

## Practice Time 7E

**1.** (*a*) West (*b*) North

(*c*) East (*d*) West

## Brain Sizzlers (Page 132)

**1.** Number of Squares = 18

## Mental Maths (Page 133)

**1.** **Ray:** A ray is a part of a line which can be extended in one direction endlessly.




Ray AB is denoted symbolically as $\overrightarrow{AB}$.

**Line segment:** A line segment is a part of a line. It has a fixed length.




Line segment PQ or QP is written as $\overline{PQ}$ or $\overline{QP}$, where P and Q are the end points of the line segment.

**2.** 3 rectangles **3.** Sphere

**4.** There are 4 triangles in the adjacent figure.

## Chapter Assessment

**1.** (*a*) – (*i*) (*b*) – (*ii*) (*c*) – (*i*)

**2.** (*a*) 5 triangles, 1 Square, 2 Rectangles.

(*b*) 16 triangles, 3 Squares, 1 Rectangles.

**3.** Water bottle, Dry cell.

**4.** Ice-cream cone, Birthday cap.

**6.** (*a*) I have 1 curved and 1 flat face. I am a cone.

(*b*) I have two flat and one curved face. I am a cylinder.

(*c*) I have 12 edges and 6 rectangular face. I am a cuboid.

(*d*) I have only 1 face and no corners. I am a sphere.

(*e*) I have 8 corners and 6 equal faces. I am a cube.

# CHAPTER 8 : SYMMETRY AND PATTERNS

## Practice Time 8A

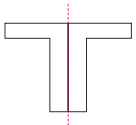
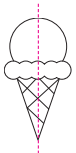
**1.** (*d*), (*e*), (*g*), (*h*)

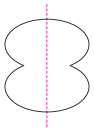
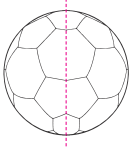
**2.** (*a*)  (*b*)  (*c*) 

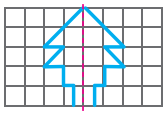
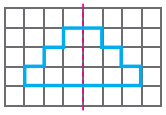
(*d*)  (*e*)  (*f*) 

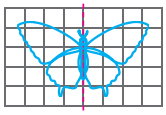
(*g*) 


(*h*) 

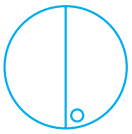
**3.** (*a*)  (*b*) 

(*c*)  (*d*) 

**4.** (*a*)  (*b*) 

(*c*) 

## Practice Time 8B

**1.** (*a*)  (*b*)  (*c*) 

**2.** (*a*) 2 2 2 0 0 0 2 0 2 2 0 0 2 2 2 0 0 0

(*b*) 

**3.** 

**4.** (*a*) 20, 70, 120, 170, 220, 270, 320.

(*b*) 101, 111, 121, 131, 141, 151, 161.

(*c*) Abc, Bcd, Cde, Def, Efg, Fgh.

(*d*) 1045, 1055, 1065, 1075, 1085, 1095.

6. (*a*) 5 colours are used to create the pattern.

(*b*) 5 shapes are used to create the pattern.

## Mental Maths (Page 143)

**1.** Floor, Chessboard **2.** Giraffe

**3.** (*a*)

**4.** TEACHER → R is not symmetrical

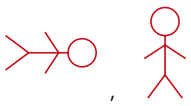
**5.** 

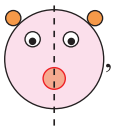
## Chapter Assessment

**1.** (*a*) – (*iii*) Infinite

(*b*) – (*i*) 2 4 8 16 32 64

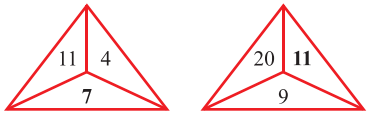
**3.** Rectangle, Square, Circle

**4.** (*a*) **D4, E5, F6** (*b*) 

**5.** 8,  6

## Brain Sizzlers (Page 145)

**1.** 


**2.** 


# CHAPTER 9 : MEASUREMENT

## Let's Recall

**1.** (*a*) cm (*b*) cm (*c*) cm

(*d*) cm (*e*) m (*f*) m

**2.** (*a*) g (*b*) kg

(*c*) g (*d*) g

(*e*) g (*f*) g

(*g*) g (*h*) g

**3.** (*a*) 200 mL (*b*) 5 mL

(*c*) 1 L (*d*) 10 L

**4.** (*a*) I am about 1 metre tall.

(*b*) My weight is about 30 kilograms.

(*c*) My water bottle holds 1 litre water.

(*d*) My foot size is about 20 centimetres long.

## Maths Fun (Page 149)

**1.** Route I: A → B → C → F → E → D → A,

*i.e.*, 4 m + 4 m + 6 m + 3 m + 5 m + 6 m = 28 m

Route II: A → D → C → B → E → F → A,

*i.e.*, 6 m + 8 m + 4 m + 8 m + 3 m + 5 m = 34 m

Therefore, the shortest route is Route I.

**2.** The shortest route from rock A to F is 5 m long.

**3.** The length of the route from rock A to rock C via the rock B is 8 m long.

**4.** The distance of the shortest route from the rock D to C is 8 m.

## Practice Time 9A

**1.** (*a*) 7 cm (*b*) 5 cm

(*c*) 6 cm (*d*) 4 cm

**2.** (*a*) We know that 1 m = 100 cm

Therefore, 5 m = (5 × 100) cm = 500 cm

(*b*) 20 m = (20 × 100) cm = 2000 cm

(*c*) 12 m 18 cm = (12 × 100) cm + 18 cm

= 1200 cm + 18 cm = 1218 cm

(*d*) 15 m 10 cm = (15 × 100) cm + 10 cm

= 1500 cm + 10 cm = 1510 cm

**3.** (*a*) We know that 1 km = 1000 m

Therefore, 6 km = (6 × 1000) m = 6000 m

(*b*) 10 km = (10 × 1000) m = 10000 m

(*c*) 4 km 300 m = (4 × 1000) m + 300 m

= 4000 m + 300 m = 4300 m

(*d*) 1 km 425 m = (1 × 1000) m + 425 m

= 1000 m + 425 m = 1425 m

4. (*a*) 500 cm = (500 ÷ 100) m = 5 m
(*b*) 1562 cm = 1500 cm + 62 cm
= (1500 ÷ 100) m + 62 cm
= 15 m + 62 cm
(*c*) 1610 m = 1000 m + 610 m
= (1000 ÷ 1000) km + 610 m
= 1 km 610 m
(*d*) 2013 m = 2000 m + 13 m
= (2000 ÷ 1000) km + 13 m
= 2 km 13 m

## Maths Fun (Page 153)

(T) 1 kg 728 g (D) 2 kg (I) 1210 g (R) 1 kg 301 g
(Y) 2 kg 167 g (A) 2050 g (B) 1 kg 31g (H) 1827 g

**Convert into grams.**

(T) 1728 g (D) 2000 g (I) 1210 g (R) 1301 g
(Y) 2167 g (A) 2050 g (B) 1031 g (H) 1827 g

**Arrange in increasing order.**

(B) 1031 g < (I) 1210 g < (R) 1301 g < (T) 1728 g <
(H) 1827 g < (D) 2000 g < (A) 2050 g < (Y) 2167 g

Answer is **BIRTHDAY**.

## Practice Time 9B

**1.** (*a*) 7 kg = (7 × 1000) g = 7000 g
(*b*) 9 kg = (9 × 1000) g = 9000 g
(*c*) 14 kg 200 g = (14 × 1000) g + 200 g
= 14000 g + 200 g = 14200 g
(*d*) 59 kg 350 g = (59 × 1000) g = 350 g
= 59000 g + 350 g = 59350 g

**2.** (*a*) We know that 1 kg = 1000 g

or $1\text{ g} = \frac{1}{1000}\text{ kg}$

So, 3000 g = (3000 ÷ 1000) kg = 3 kg
(*b*) 6000 g = (6000 ÷ 1000) kg = 6 kg
(*c*) 3124 g = 3000 g + 124 g
= (3000 ÷ 1000) kg + 124 g
= 3 kg 124 g

**3.** (*a*) 1 kg = 500 g + 200 g + 200 g + 100 g
(*b*) 1 kg = 500 g + 200 g + 200 g + 50 g + 50 g
(*c*) 1kg = 200 g + 200 g + 200 g + 200 g + 100 g
+ 100 g

## Practice Time 9C

**1.** (*a*) Water in your water bottle = 500 mL.
(*b*) Tea in a cup = 200 mL.
(*c*) 3 pouches of milk = 3 L.
(*d*) Pulses in a pressure cooker = 2 L.
(*e*) Lemon soda in a glass = 300 mL.
(*f*) Sanitizer in a bottle = 50 mL.

**2.** (*a*) We know that 1L = 1000 mL
Therefore, 2 L = (2 × 1000) mL = 2000 mL
(*b*) 5 L = (5 × 1000) mL = 5000 mL
(*c*) 7 L = (7 × 1000) mL = 7000 mL
(*d*) 9 L = (9 × 1000) mL = 9000 mL

**3.** (*a*) We know that 1L = 1000 mL

or $1\text{ mL} = \frac{1}{1000}\text{ L}$

So, 4 L 3 mL = (4 × 1000) mL + 3 mL
= 4000 mL + 3 mL = 4003 mL
(*b*) 3 L 90 mL = (3 × 1000) mL + 90 mL
= 3000 mL + 90 mL = 3090 mL
(*c*) 2 L 921 mL = (2 × 1000) mL + 921 mL
= 2000 mL + 921 mL = 2921 mL
(*d*) 7 L 600 mL = (7 × 1000) mL + 600 mL
= 7000 mL + 600 mL = 7600 mL

**4.** (*a*) 6000 mL = (6000 ÷ 1000) L = 6 L
(*b*) 9000 mL = (9000 ÷ 1000) L = 9 L
(*c*) 3920 mL = 3000 mL + 920 mL
= (3000 ÷ 1000) L + 920 mL
= 3 L 920 mL.
(*d*) 4125 mL = 4000 mL + 125 mL
= (4000 ÷ 1000) L + 125 mL
= 4 L 125 mL

**5.** (*a*) Two 500 mL = (2 × 500) mL = 1000 mL = 1 L
(*b*) Five 200 mL = (5 × 200) mL = 1000 mL = 1 L
(*c*) Four 250 mL = (4 × 250) mL = 1000 mL = 1 L
(*d*) Four 250 mL = 1 L
(*e*) Twenty 50 mL = (20 × 50) mL = 1000 mL = 1 L
(*f*) Ten 50 mL = 500 mL

## Practice Time 9D

**1.** (*a*)

| | m | | cm | |
|---|---|---|---|---|
| | 7 | 1 | 4 | 6 |
| + | 2 | 1 | 4 | 3 |
| | 9 | 2 | 8 | 9 |

(*b*)

| | m | | | cm | |
|---|---|---|---|---|---|
| | (1) | (1) | | (1) | |
| | 1 | 4 | 8 | 4 | 8 |
| + | 1 | 9 | 5 | 3 | 9 |
| | 3 | 4 | 3 | 8 | 7 |

(*c*)

| | km | | | m | | |
|---|---|---|---|---|---|---|
| | (1) | | | (1) | (1) | |
| | 1 | 6 | 8 | 1 | 6 | 6 |
| + | 2 | 1 | 4 | 5 | 4 | 7 |
| | 3 | 8 | 2 | 7 | 1 | 3 |

(*d*)

| | kg | | | g | | |
|---|---|---|---|---|---|---|
| | | | (1) | | | |
| | 4 | 6 | 0 | 6 | 1 | 0 |
| + | 5 | 1 | 8 | 7 | 1 | 4 |
| | 9 | 7 | 9 | 3 | 2 | 4 |

(*e*)

| | L | | | mL | | |
|---|---|---|---|---|---|---|
| | | (1) | | | (1) | |
| | | 6 | 9 | 0 | 0 | 9 |
| + | 1 | 0 | 4 | 3 | 0 | 4 |
| | 1 | 7 | 3 | 3 | 1 | 3 |

(*f*)

| | L | | | | mL | | |
|---|---|---|---|---|---|---|---|
| | | | (1) | | (1) | (1) | |
| | | 7 | 0 | 6 | 0 | 4 | 5 |
| + | | 4 | 5 | 6 | 3 | 7 | 9 |
| | 1 | 1 | 6 | 2 | 4 | 2 | 4 |

(*g*)

| | km | | | m | | |
|---|---|---|---|---|---|---|
| | | (1) | (1) | | | |
| | | 6 | 2 | 8 | 0 | 0 |
| | | 9 | 6 | 4 | 4 | 4 |
| + | | 8 | 2 | 6 | 0 | 4 |
| | 2 | 4 | 1 | 8 | 4 | 8 |

(*h*)

| | kg | | | g | | |
|---|---|---|---|---|---|---|
| | (1) | | | | | |
| | 4 | 6 | | 6 | 6 | 0 |
| | 2 | 2 | | 3 | 2 | 0 |
| + | | 9 | | 0 | 0 | 9 |
| | 7 | 7 | | 9 | 8 | 9 |

(*i*)

| | L | | | mL | | |
|---|---|---|---|---|---|---|
| | (2) | (1) | (1) | | (1) | |
| | 1 | 9 | 6 | 1 | 0 | 5 |
| | 2 | 4 | 5 | 1 | 5 | 6 |
| + | | 9 | 0 | 9 | 0 | 6 |
| | 5 | 3 | 2 | 1 | 6 | 7 |

**2.** (*a*) 112 km 848 m and 118 km 279 m.

Arrange the given measures in the columns of km and m.

**Step 1.** Add metres.

848 m + 279 m

= 1127 m

= 1 km 127 m

| | km | | | m | | |
|---|---|---|---|---|---|---|
| | 1 | 1 | 2 | 8 | 4 | 8 |
| + | 1 | 1 | 8 | 2 | 7 | 9 |
| | 2 | 3 | 1 | 1 | 2 | 7 |

Write 127 under m column and carry forward 1 to km column.

**Step 2.** Add kilometres.

1 km (carried over ) + 112 km + 118 km

= 231 km.

Write 231 under the km column.

Thus, 112 km 848 m + 118 km 279 m

= 231 km 127 m.

(*b*)

| | m | | | cm | |
|---|---|---|---|---|---|
| | | | (1) | | |
| | 3 | 3 | 0 | 3 | 8 |
| + | 1 | 0 | 5 | 7 | 0 |
| | 4 | 3 | 6 | 0 | 8 |

(*c*)

| | m | | | cm | |
|---|---|---|---|---|---|
| | (1) | | | (1) | |
| | 1 | 7 | 6 | 2 | 6 |
| + | 1 | 9 | 0 | 0 | 6 |
| | 3 | 6 | 6 | 3 | 2 |

(*d*)

| | kg | | g | | |
|---|---|---|---|---|---|
| | 1 | 4 | 3 | 4 | 0 |
| + | 5 | 0 | 3 | 4 | 6 |
| | 6 | 4 | 6 | 8 | 6 |

(*e*)

| | kg | g | | |
|---|---|---|---|---|
| | | (1) | | |
| | 2 | 4 | 5 | 0 |
| | 5 | 0 | 6 | 0 |
| + | 2 | 1 | 0 | 0 |
| | 9 | 6 | 1 | 0 |

(*f*)

| | kg | | g | | |
|---|---|---|---|---|---|
| | | (1) | (1) | | |
| | 6 | 0 | 7 | 0 | 0 |
| | 1 | 6 | 1 | 5 | 0 |
| + | | | 8 | 7 | 8 |
| | 7 | 7 | 7 | 2 | 8 |

(*g*)

| | L | | | mL | | |
|---|---|---|---|---|---|---|
| | | | (1) | (1) | | |
| | | 7 | 0 | 9 | 5 | 7 |
| + | | 4 | 0 | 6 | 6 | 0 |
| | 1 | 1 | 1 | 6 | 1 | 7 |

(*h*)

| | L | | | mL | | |
|---|---|---|---|---|---|---|
| | ① | ② | | ① | | |
| | 1 | 2 | 5 | 9 | 7 | 6 |
| | | 6 | 5 | 7 | 5 | 0 |
| + | | | | 5 | 5 | 3 |
| | 1 | 9 | 2 | 2 | 7 | 9 |

**3.** (*a*)

| | | | | |
|---|---|---|---|---|
| | 5 | 4 | 5 | mL |
| + | 4 | 5 | 0 | mL |
| | 9 | 9 | 5 | mL |

(*b*)

| | | | | |
|---|---|---|---|---|
| | ① | ① | | mL |
| | | 4 | 9 | 5 mL |
| + | | 6 | 7 | 5 mL |
| | 1 | 1 | 7 | 0 mL |

## Practice Time 9E

**1.** (*a*)

| | km | | m | | |
|---|---|---|---|---|---|
| | | | ⑨ | | |
| | | | ② | ~~1~~⓪ | ⑩ |
| | 2 | 8 | ~~3~~ | ~~0~~ | ~~0~~ |
| – | 1 | 4 | 2 | 1 | 6 |
| | 1 | 4 | 0 | 8 | 4 |

(*b*)

| | m | | cm | |
|---|---|---|---|---|
| | ⑤ | ⑭ | | |
| | 8 | ~~6~~ | ~~4~~ | 0 6 |
| – | 3 | 4 | 5 | 0 4 |
| | 5 | 1 | 9 | 0 2 |

(*c*)

| | kg | | g | | |
|---|---|---|---|---|---|
| | | | ⑤ | ⑫ | |
| | 9 | 6 | 4 | ~~6~~ | ~~2~~ |
| – | 4 | 6 | 2 | 0 | 8 |
| | 5 | 0 | 2 | 5 | 4 |

(*d*)

| | kg | | | g | | |
|---|---|---|---|---|---|---|
| | | | | ⑨ | | |
| | ① | ⑪ | ⑤ | ~~1~~⓪ | ⑯ | |
| | ~~2~~ | ~~1~~ | ~~6~~ | ~~0~~ | ~~6~~ | 5 |
| – | 1 | 9 | 0 | 0 | 9 | 0 |
| | 0 | 2 | 5 | 9 | 7 | 5 |

(*e*)

| | L | | mL | | |
|---|---|---|---|---|---|
| | 7 | 9 | 0 | 6 | 8 |
| – | 5 | 1 | 0 | 4 | 6 |
| | 2 | 8 | 0 | 2 | 2 |

(*f*)

| | L | | | mL | | |
|---|---|---|---|---|---|---|
| | | ⑪ | | | | |
| | ② | ~~1~~ | ⑪ | | ④ | ⑩ |
| | ~~3~~ | ~~2~~ | ~~1~~ | 4 | ~~5~~ | ~~0~~ |
| – | | 9 | 9 | 3 | 4 | 5 |
| | 2 | 2 | 2 | 1 | 0 | 5 |

**2.** (*a*) 128 m 76 cm from 949 m 6 cm

Arrange the given measures in the columns of m and cm and then subtract.

**Step 1.** Subtract centimetres.

76 cm cannot be subtract from 6 cm

So, regroup m and cm.

949 m 06 cm = 948 m 106 cm

Now, 106 cm – 76 cm = 30 cm

Write 30 under the cm column.

**Step 2.** Subtract metres.

948 m – 128 m = 820 m

Write 820 under the m column.

Thus, 949 m 6 cm – 128 m 76 cm = 820 m 30 cm.

| | m | | | cm | |
|---|---|---|---|---|---|
| | | | ⑧ | ⑩ | |
| | 9 | 4 | ~~9~~ | ~~0~~ | 6 |
| – | 1 | 2 | 8 | 7 | 6 |
| | 8 | 2 | 0 | 3 | 0 |

(*b*) 78 m from 4 cm

Arrange the given measures in the columns of m and cm and then subtract.

**Step 1.** Subtract centimetres.

78 cm cannot subtract form 0 cm

So, regroup m and cm.

4 m = 3 m 100 cm

Now, 100 cm – 78 cm = 22 cm

Write 22 under the cm column.

**Step 2.** Subtract metres.

3 m – 0 m = 3 m

Write 3 under the m column.

| | m | | cm | |
|---|---|---|---|---|
| | | | ⑨ | |
| | ③ | ~~1~~⓪ | ⑩ | |
| | ~~4~~ | ~~0~~ | ~~0~~ | |
| – | 0 | 7 | 8 | |
| | 3 | 2 | 2 | |

Thus, 4 m – 78 cm = 400 cm – 78 cm = 322 cm.

(*c*) to (*h*) — Same as part (*a*) and (*b*).

## Practice Time 9F

**1.** Length of cloth used by the tailor to make a shirt = 1 m 125 cm = 2 m 25 cm

Length of cloth used by the tailor to make trousers = 1 m 750 cm = 8 m 50 cm

Total length of cloth used by tailor to make a shirt and trousers =

| | m | | cm | |
|---|---|---|---|---|
| | 2 | | 2 | 5 |
| + | 8 | | 5 | 0 |
| | 10 | | 7 | 5 |

Thus, total length of cloth used by the tailor to make a shirt and trousers is 10 m 75 cm.

**2.** Length of string of kite A = 4570 m

Length of string of kite B = 5250 m

Difference of lengths = 5250 m – 4570 m = 680 m

| | | | | |
|---|---|---|---|---|
| | | ⑪ | | |
| | ④ | ~~1~~ | ⑮ | |
| | ~~5~~ | ~~2~~ | ~~5~~ | 0 |
| – | 4 | 5 | 7 | 0 |
| | | 6 | 8 | 0 |

Thus, kite B is flying higher by 680 m.

**3.** Weight of Riya's bag = 34 kg 750 g
Weight of Pratham's bag = 22 kg 950 g
Total weight of both bags =

| | kg | | g | | |
|---|---|---|---|---|---|
| | | (1) | (1) | | |
| | 3 | 4 | 7 | 5 | 0 |
| + | 2 | 2 | 9 | 5 | 0 |
| | 5 | 7 | 7 | 0 | 0 |

Thus, the total weight of both the bags is 57 kg 700 g.

**4.** Family A consumes vegetable oil in a month = 15 L 125 mL
Family B consumes vegetable oil in the same month = 14 L
Difference of oil consumption between both the families = 15 L 125 mL – 14 L
= 1 L 125 mL
Thus, family A consumes 1 L 125 mL more oil by family B.

| | L | | mL | | |
|---|---|---|---|---|---|
| | 1 | 5 | 1 | 2 | 5 |
| – | 1 | 4 | 0 | 0 | 0 |
| | | 1 | 1 | 2 | 5 |

**5.** Baggage allowed of a business-class passenger =35 kg
Baggage allowed to its economy-class passenger = 20 kg 575g
Difference in baggage allowances
= 35 kg – 20 kg 575 g
= 14 kg 425 g
Thus, the difference between the two baggage allowances is 14 kg 425 g.

| | kg | | g | | |
|---|---|---|---|---|---|
| | | | (9) | (9) | |
| | | (4) | (10) | (10) | (10) |
| | 3 | ~~5~~ | ~~0~~ | ~~0~~ | ~~0~~ |
| – | 2 | 0 | 5 | 7 | 5 |
| | 1 | 4 | 4 | 2 | 5 |

**6.** Total litres of petrol filled in the bike = 14 L 450 mL
Total fuel left in the bike = 3 L
Petrol used = 14 L 450 mL – 3 L = 11 L 450 mL
Thus, 11 L 450 mL of petrol was used when the indicator first warned me.

| | L | | mL | | |
|---|---|---|---|---|---|
| | 1 | 4 | 4 | 5 | 0 |
| – | | 3 | 0 | 0 | 0 |
| | 1 | 1 | 4 | 5 | 0 |

## Mental Maths (Page 169)

**1.** Kilogram is used to measure the weight of a television.

**2.** A tailor uses a measuring tape to measure the length of cloth.

**3.** Weighing machine is used to measure the weight of a rice bag.

**4.** The capacity of a cough syrup bottle is measured in mL.

**5.** 48 km 525 m – 26 km 328 m = 22 km 197 m.

| | km | | m | | |
|---|---|---|---|---|---|
| | | | | (11) | |
| | | | (4) | (~~1~~) | (15) |
| | 4 | 8 | ~~5~~ | ~~2~~ | ~~5~~ |
| – | 2 | 6 | 3 | 2 | 8 |
| | 2 | 2 | 1 | 9 | 7 |

## Chapter Assessment

**1.** (*a*) – (*i*) 39 m 67 cm = (39 × 100) cm + 67 cm
= 3900 cm + 67 cm
= 3967 cm

(*b*) – (*i*) 6 km 55 m = (6 × 1000) m + 55 m
= 6000 m + 55 m
= 6055 m

(*c*) – (*i*) 7 kg 784 g = (7 × 1000) g + 784 g
= 7000 g + 784 g
= 7784 g

(*d*) – (*ii*) 4 L 65 mL = (4 × 1000) mL + 65 mL
= 4000 mL + 65 mL
= 4065 mL

(*e*) – (*i*) 708 L 982 mL + 18 L 95 mL + 9 L 745 mL
= 736 L 822 mL

| | L | | | mL | | |
|---|---|---|---|---|---|---|
| | | (2) | (1) | (2) | (1) | |
| | 7 | 0 | 8 | 9 | 8 | 2 |
| | | 1 | 8 | | 9 | 5 |
| + | | | 9 | 7 | 4 | 5 |
| | 7 | 3 | 6 | 8 | 2 | 2 |

(*f*) – (*iii*) 130 L 750 mL – 66 L 975 mL
= 63 L 775 mL

| | L | | | mL | | |
|---|---|---|---|---|---|---|
| | | (12) | (9) | (16) | (14) | |
| | | (2) | (~~10~~) | (~~6~~) | (~~4~~) | (10) |
| | ~~X~~ | ~~X~~ | ~~0~~ | ~~7~~ | ~~5~~ | ~~0~~ |
| – | | 6 | 6 | 9 | 7 | 5 |
| | | 6 | 3 | 7 | 7 | 5 |

**2.** (*a*) 100 cm = 1 m (*b*) 1 km = 1000 m
(*c*) 200 cm = 2 m (*d*) 3000 m = 3 km

(*e*) 1 kg = 1000 g (*f*) 1 g = $\frac{1}{1000}$ kg

(*g*) 1 L = 1000 mL (*h*) 6000 mL = 6 L

**3.** (*a*) 38 m 85 cm = (38 × 100) cm + 85 cm
= 3800 cm + 85 cm = 3885 cm

(*b*) 9 km 570 m = (9 × 1000) m + 570 m
= 9000 m + 570 m = 9570 m

(*c*) 4 L 832 mL = (4 × 1000) mL + 832 mL
= 4000 mL + 832 mL = 4832 mL

(*d*) 3 km 911 m = (3 × 1000) m + 911 m
= 3000 m + 911 m = 3911 m

**4.** Sum of 216 km 878 m and 329 km 400 m = 546 km 278 m

| | km | | | m | | |
|---|---|---|---|---|---|---|
| | | (1) | (1) | | | |
| | 2 | 1 | 6 | 8 | 7 | 8 |
| + | 3 | 2 | 9 | 4 | 0 | 0 |
| | 5 | 4 | 6 | 2 | 7 | 8 |

Now, subtract 338 km 188 m from 546 km 278 m.

| | km | | | m | | |
|---|---|---|---|---|---|---|
| | | (3) | (16) | (1) | (17) | |
| | 5 | ~~4~~ | ~~6~~ | ~~2~~ | ~~7~~ | 8 |
| – | 3 | 3 | 8 | 1 | 8 | 8 |
| | 2 | 0 | 8 | 0 | 9 | 0 |

= 208 km 090 m.

**5.** Length of silk clothes = 20 m 45 cm

Length of velvet clothes = 42 m 85 cm

Total length of clothes =

| | m | | cm | |
|---|---|---|---|---|
| | | (1) | (1) | |
| | 2 | 0 | 4 | 5 |
| + | 4 | 2 | 8 | 5 |
| | 6 | 3 | 3 | 0 |

Thus, total length of clothes bought by the merchant is 63 m 30 cm.

**6.** Total distance to be covered by the boat = 84 km

Boat sails in one day =19 km 348 m

Distance left for the boat to cover =

| | km | | m | | |
|---|---|---|---|---|---|
| | | (13) | (9) | (9) | |
| | (7) | (~~3~~) | (~~10~~) | (~~10~~) | (10) |
| | ~~8~~ | ~~4~~ | ~~0~~ | ~~0~~ | ~~0~~ |
| – | 1 | 9 | 3 | 4 | 8 |
| | 6 | 4 | 6 | 5 | 2 |

Thus, 64 km 652 m distance is left for the boat to cover.

**7.** Total length of rope = 128 m 67 cm

Length of green part of rope = 64 m 11 cm

Length of yellow part of rope = 36 m 45 cm

Total length of green and yellow rope = 100 m 56 cm

| | m | | | cm | |
|---|---|---|---|---|---|
| | | (1) | | | |
| | | 6 | 4 | 1 | 1 |
| + | | 3 | 6 | 4 | 5 |
| | 1 | 0 | 0 | 5 | 6 |

Length of black part of rope =

Thus, length of black part of the rope is 28 m 11 cm.

| | m | | | cm | |
|---|---|---|---|---|---|
| | 1 | 2 | 8 | 6 | 7 |
| – | 1 | 0 | 0 | 5 | 6 |
| | | 2 | 8 | 1 | 1 |

**8.** Weight of first bag = 13 kg 372 g

Weight of second bag = 14 kg 610 g

Total weight carried by the coolie =

Thus, the weight carried by the coolie is 27 kg 982 g.

| | kg | | g | | |
|---|---|---|---|---|---|
| | 1 | 3 | 3 | 7 | 2 |
| + | 1 | 4 | 6 | 1 | 0 |
| | 2 | 7 | 9 | 8 | 2 |

**9.** Total weight of machine = 77 kg 656 g

Weight of first part = 58 kg 735 g

Weight of other part =

Thus, weight of the other part of machine is 18 kg 921 g.

| | kg | | g | | |
|---|---|---|---|---|---|
| | | (16) | | | |
| | (6) | (~~6~~) | (16) | | |
| | ~~7~~ | ~~7~~ | ~~6~~ | 5 | 6 |
| – | 5 | 8 | 7 | 3 | 5 |
| | 1 | 8 | 9 | 2 | 1 |

**10.** Total weight of three baskets = 93 kg

Weight of first basket = 25 kg 425 g

Weight of second basket = 33 kg 565 g

Total weight of two baskets =

| | kg | | g | | |
|---|---|---|---|---|---|
| | | | | (1) | |
| | 2 | 5 | 4 | 2 | 5 |
| + | 3 | 3 | 5 | 6 | 5 |
| | 5 | 8 | 9 | 9 | 0 |

Weight of third basket =

| | kg | | g | | |
|---|---|---|---|---|---|
| | | (12) | (9) | | |
| | (8) | (~~2~~) | (~~10~~) | (10) | |
| | ~~9~~ | ~~3~~ | ~~0~~ | ~~0~~ | 0 |
| – | 5 | 8 | 9 | 9 | 0 |
| | 3 | 4 | 0 | 1 | 0 |

Thus, the weight of the third basket is 34 kg 10 g.

**11.** Digvijay gave milk to first family = 9 L 280 mL
Digvijay gave milk to second family = 8 L 350 mL
Total milk he gave to two poor families =
Thus, Digvijay gave 17 L 630 mL milk to two poor families.

| | L | | mL | | |
|---|---|---|---|---|---|
| | | | ① | | |
| | | 9 | 2 | 8 | 0 |
| + | | 8 | 3 | 5 | 0 |
| | 1 | 7 | 6 | 3 | 0 |

**12.** Total drinking water contained in the vessel = 980 L 400 mL
Water took out from the vessel by the three families
= 138 L 450 mL + 217 L 800 mL + 385 L 500 mL
= 741 L 750 mL

| | L | | | mL | | |
|---|---|---|---|---|---|---|
| | ① | ② | ① | | | |
| | 1 | 3 | 8 | 4 | 5 | 0 |
| | 2 | 1 | 7 | 8 | 0 | 0 |
| + | 3 | 8 | 5 | 5 | 0 | 0 |
| | 7 | 4 | 1 | 7 | 5 | 0 |

Water left in the vessel = 980 L 400 mL – 741 L 750 mL = 238 L 650 mL

| | L | | | mL | | |
|---|---|---|---|---|---|---|
| | | | ⑨ | ⑬ | | |
| | | ⑦ | ⑩ | ③ | ⑩ | |
| | 9 | ~~8~~ | ~~0~~ | ~~4~~ | ~~0~~ | 0 |
| – | 7 | 4 | 1 | 7 | 5 | 0 |
| | 2 | 3 | 8 | 6 | 5 | 0 |

Thus, 238 L 650mL water is left in the vessel.

**13.**

**Soni's Juice**

| | | | | |
|---|---|---|---|---|
| | ⑦ | ⑭ | | |
| | ~~8~~ | ~~4~~ | 0 | mL |
| – | 7 | 5 | 0 | mL |
| | 0 | 9 | 0 | mL |

**Rani's Juice**

| | | | | |
|---|---|---|---|---|
| | ③ | ⑭ | | |
| | ~~4~~ | ~~4~~ | 5 | mL |
| – | 3 | 7 | 5 | mL |
| | 0 | 7 | 0 | mL |

Rani drank less amount of juice from the bottle.

## Brain Sizzlers (Page 171)

**1.** New Delhi to Vadodra = 458 km + 267 km + 260 km = 985 km.
**2.** Ratlam to Surat = 260 km + 129 km = 389 km
**3.** New Delhi to Mumbai = 458 km + 267 km + 260 km + 129 km + 233 km = 1347 km.

# CHAPTER 10 : TIME

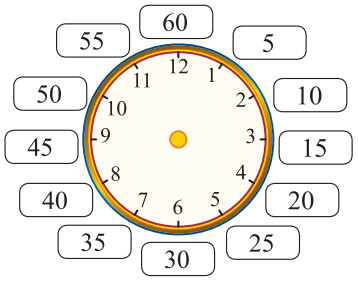
## Let's Recall

**1.** (*a*) 7 o'clock, 7:00 (*b*) 9 o'clock, 9:00
(*c*) 3 o'clock, 3:00 (*d*) 5 o'clock, 5:00
(*e*) 10 o'clock, 10:00
**2.** (*a*) The minute hand is longer than the hour hand.
(*b*) 1 quarter of an hour is equal to 15 minutes.
(*c*) Half of an hour is equal to 30 minutes.
(*d*) The minute hand moves faster than the hour hand.
**3.** (*a*) – (*iv*) (*b*) – (*iii*)
(*c*) – (*i*) (*d*) – (*ii*)

## Practice Time 10A

**1.** (*b*) 4:30, half past four (*c*) 5:30, half past five
(*d*) 7:30, half past seven
**3.** (*b*) 3:15, quarter past 3 (*c*) 3:45, quarter to 4
(*d*) 7:45, quarter to 8
**5.** (*a*) The Maths period on Monday starts at 8:30 or half past 8.
(*b*) The second period on Monday starts at 9:15 or quarter past 9.
(*c*) The break starts at 10:00 or 10 o'clock daily.
(*d*) The GK period on Tuesday starts at 10:30 or half past 10.
(*e*) On Thursday Maths period starts at 11:15 or quarter past 11 .

## Think and Answer (Page 178)




## Quick Check (Page 179)

**1.** 30 minutes part 1, half past 1, 1:30
**2.** 8:25 or 25 minutes past 8

## Practice Time 10B

**1.** (*b*) 25 minutes past 10 (*c*) 15 minutes past 11
(*d*) 41 minutes past 4

**2.** (*a*) – (*i*) (*b*) – (*iii*)
(*c*) – (*iv*) (*d*) – (*ii*)

**4.** (*b*) 16 minutes past 8= 8:16

(*c*) 5 minutes past 7 = 7:05

(*d*) 55 minutes to 11= 10:55

## Think and Answer (Page 181)

We know that 1 hour = 60 minutes and
1 minute = 60 seconds.
Therefore, 1 hour = 60 × 60 = 3600 seconds.

## Practice Time 10C

**1.** (*a*) p.m. (*b*) a.m. (*c*) p.m.

**2.** (*a*) 6:30 in the morning = 6:30 a.m.

(*b*) 5:00 evening = 5:00 p.m.

(*c*) 7:15 in the evening = 7:15 p.m.

(*d*) 8:05 in the night = 8:05 p.m.

(*e*) 9:40 before noon = 9:40 a.m.

(*f*) 10:25 morning = 10:25 a.m.

**3.** (*a*) It takes about a second to blink your eyes.
(*b*) It takes about 15 minutes to eat breakfast.
(*c*) It takes about 1 hour in doing homework.
(*d*) It takes about a minute to tie your shoelaces.
(*e*) It takes about 5 minutes to cook noodles.
(*f*) You should sleep 8 hours.

## Practice Time 10D

**2.** (*a*) 5:30 (*b*) 3:15 (*c*) 7:00

**3.** (*a*) 9:30 (*b*) 2:15 (*c*) 11:45

**4.** Time when Ankit reached the school = 8:00 a.m.
Time he studied in the school = 6 hours.
Time when he leave the school
= 8:00 a.m. + 6 hours = 2 p.m.
Therefore, he leave the school at 2 p.m.

**5.** Ram gets up in the morning at = 6:45 a.m.
Time taken by him to get ready for the school = 1 hour
Time when he get ready for the school
= 6:45 a.m. + 1 hour = 7:45 a.m.

**6.** Amrita went to the market at = 10:00 a.m.
She stayed in the market = 2 hours.
Time she leave the market = 10:00 a.m. + 2 hours
= 12:00 noon

**7.** Movie started at = 4:15 p.m.
Duration of the movie = 2 hours 10 minutes
The movie ends at
= 4:15 p.m. + 2 hours 10 minutes = 6:25 p.m.

**8.** News on a channel starts at = 8:05 p.m.
News lasts for 20 minutes.
Time when the news finish
= 8:05 p.m. + 20 minutes = 8:25 p.m.

## Practice Time 10E

**1.** (*a*) The number of months have exactly 30 days is 4.
(*b*) The number of months have 31 days is 7.
(*c*) Two consecutive months having the same number of days in a year are July and August.
(*d*) The total number of Fridays in the year is 52.
(*e*) March, August and November months having 5 Saturdays and 5 Sundays.
(*f*) Wednesday is the first day of the year.
(*g*) Wednesday is the last day of the year.

**2.** Leap years: 1200, 2016, 2024

## Maths Connect (Page 186)

India got freedom on 15th August 1947 from the British rule.
The constitution of India was adopted by the constituent assembly on 26th November 1949 and came into force on 26th January 1950.

## Think and Answer (Page 187)

**1.** $\frac{1}{2}$ day = $\frac{1}{2}$ × 24 hours = 12 hours
12 hours = 12 × 60 minutes = 720 minutes.

**2.** $\frac{1}{3}$ day = $\frac{1}{3}$ × 24 hours = 8 hours
8 hours = 8 × 60 minutes = 480 minutes.

**3.** $\frac{1}{4}$ day = $\frac{1}{4}$ × 24 hours = 6 hours
6 hours = 6 × 60 minutes = 360 minutes.

## Practice Time 10F

**1.** (*a*) 4.1.2003; 4/1/2003
(*b*) 21.04.2014; 21/04/2014
(*c*) 16 November, 2018; November 16, 2018.

**2.** (*a*) 2 hours = 2 × 60 minutes = 120 minutes
(*b*) 8 hours = 8 × 60 minutes = 480 minutes

(*c*) 1 day = 1 × 24 hours = 24 hours
(*d*) 1 day = 1 × 24 hours = 24 hours
24 hours = 24 × 60 minutes = 1440 minutes
(*e*) 5 days = 5 × 24 hours = 120 hours
120 hours = 120 × 60 minutes = 7200 minutes
(*f*) 19 weeks = 19 × 7 days = 133 days
(*g*) 24 weeks = 24 × 7 days = 168 days
(*h*) 10 months = 10 × 30 days = 300 days
(*i*) 4 years = 4 × 365 days = 1460 days

## Chapter Assessment

**1.** (*a*) – (*ii*) (*b*) – (*ii*) (*c*) – (*i*)
**2.** (*a*) – (*iii*)10:45 = Quarter to 11.
(*b*) – (*v*)8:15 = Quarter past 8.
(*c*) – (*ii*)9:20 = 20 minutes past 9.
(*d*) – (*ii*)6:40 = 20 minutes to 7.
(*e*) – (*iv*)5:30 = Half past 5.
**3.** (*a*) 8:13 is 13 minutes past 8.
(*b*) 5:52 is 8 minutes to 6.
(*c*) 9:21 is 21 minutes past 9.
(*d*) 11:48 is 12 minutes to 12.
**4.** (*a*) 5 hours = 5 × 60 minutes = 300 minutes
(*b*) 2 days = 2 × 24 hours = 48 hours
(*c*) 4 months = 4 × 30 days = 120 days
(*d*) 8 hours 10 minutes = 8 × 60 minutes + 10 minutes
= 480 minutes + 10 minutes = 490 minutes
**5.** (*a*) 3 a.m. and 7 a.m. = 4 hours
(*b*) 2 p.m. and 3:15 p.m. = 1 hour 15 minutes
(*c*) 12:45 p.m. and 5 p.m. = 4 hour 15 minutes
**6.** Film began at 11:15 a.m.
ended after 2 hour = 11:15 + 2 hours = 1:15 p.m.
**7.** (*a*) 15/11/2018, November 15, 2018
(*b*) 16 Nov., 2019; Nov. 16, 2019
(*c*) 26/1/2020; 26 Jan. 2020
**9.** 9 hours 55 minutes
**10.** 24 rounds does the minute hand of a clock complete in a day.
**11.** 12 a.m. to 12 p.m. = 12 hours
12 × 60 minutes = 720 minutes

## Brain Sizzlers (Page 193)

**1.** Number of minutes = 5 × 5 + 4 minutes
= 25 + 4 minutes
= 29 minutes
**2.** 1 hour = 60 minutes
480 minutes = 480 ÷ 60 hours
= 8 hours

# CHAPTER 11 : MONEY

## Let's Recall

**1.** (*a*) ₹50 + ₹10 + ₹10 + ₹5 = ₹75
(*b*) ₹100 + ₹50 + ₹20 + ₹10 = ₹180
(*c*) ₹200 + ₹50 + ₹10 + ₹10 + ₹5 = ₹275
(*d*) ₹500 + ₹200 = ₹700
**2.** (*a*) ₹1 = two 50-paisa coins
(*b*) ₹5 = five 1-rupee coins
(*c*) ₹10 = five 2-rupee coins
(*d*) ₹20 = four 5-rupee coins
(*e*) ₹100 = twenty 5-rupee notes
(*f*) ₹200 = ten 20-rupee notes
(*g*) ₹500 = ten 50-rupee notes
(*h*) ₹2000 = twenty 100-rupee notes

## Practice Time 11A

**1.** (*a*) ₹30.50 = Thirty rupees fifty paise
(*b*) ₹20.75 = Twenty rupees seventy-five paise
(*c*) ₹100.10 = One hundred rupees ten paise
(*d*) ₹118.75 = One hundred eighteen rupees seventy-five paise
(*e*) ₹550.20 = Five hundred fifty rupees twenty paise
(*f*) ₹999.20 = Nine hundred ninety-nine rupees twenty paise
**2.** (*a*) 42 rupees 25 paise = ₹42.25
(*b*) 65 rupees 50 paise = ₹65.50
(*c*) One hundred rupees sixty-five paise = ₹100.65
(*d*) Twenty-seven rupees seventy paise = ₹27.70
(*e*) One rupee seventy-five paise = ₹1.75
(*f*) Ninety-eight rupees ninety paise = ₹98.90
**3.** (*a*) ₹100 + ₹50 + ₹5 + ₹0.50 = ₹155.50
One hundred fifty-five rupees fifty paise.
(*b*) ₹50 + ₹20 + ₹10 + ₹0.50 = ₹80.50
Eighty rupees fifty paise.
(*c*) ₹500 + ₹200 + ₹2 = ₹702
Seven hundred two rupees.
(*d*) ₹500 + ₹0.50 + ₹0.25 = ₹500.75
Five hundred rupees seventy-five paise.
**4.** We know that, 1 rupee = 100 paise
or 1 paisa = $\frac{1}{100}$ rupee
(*a*) ₹0.75 = 75 paise

(*b*) ₹20 = 20 × 100 = 2000 paise
₹20.50 = 2000 + 50 = 2050 paise
(*c*) ₹25 = 25 × 100 = 2500 paise
₹25.05 = 2500 + 05 = 2505 paise
(*d*) ₹16 = 16 × 100 = 1600 paise

**5.** We know that, 1 rupee = 100 paise

or 1 paisa = $\frac{1}{100}$ rupee

(*a*) 900 p= ₹$\frac{1}{100}$ × 900 = ₹$\frac{900}{100}$ = ₹9

(*b*) 550 p= ₹$\frac{1}{100}$ × 550 = ₹$\frac{550}{100}$ = ₹5.50

(*c*) 4001 p= ₹$\frac{1}{100}$ × 4001 = ₹$\frac{4001}{100}$ = ₹40.01

(*d*) 1000 p= ₹$\frac{1}{100}$ ×1000 = ₹$\frac{1000}{100}$ = ₹10

**6.** (*a*) 5 rupees 69 paise = ₹5.69
(*b*) 9 rupees 4 paise = ₹9.04
(*c*) 83 rupees 94 paise = ₹83.94
(*d*) 3 rupees 41 paise = ₹3.41

## Practice Time 11B

**1.** (*a*)

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | ① | | | |
| | ₹ | | 8 | 3 | . | 4 | 0 |
| + | ₹ | | 4 | 8 | . | 3 | 0 |
| | ₹ | 1 | 3 | 1 | . | 7 | 0 |

(*b*)

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | ① | | | |
| | ₹ | | 6 | 9 | . | 7 | 0 |
| + | ₹ | | 5 | 1 | . | 2 | 5 |
| | ₹ | 1 | 2 | 0 | . | 9 | 5 |

(*c*)

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | ① | | |
| | ₹ | | 7 | 4 | . | 7 | 5 |
| + | ₹ | | 7 | 1 | . | 6 | 0 |
| | ₹ | 1 | 4 | 6 | . | 3 | 5 |

(*d*)

| | | | | | | |
|---|---|---|---|---|---|---|
| | ① | | | ① | | |
| | ₹ | 2 | 3 | 2 | . | 1 | 5 |
| + | ₹ | 1 | 9 | 6 | . | 4 | 5 |
| | ₹ | 4 | 2 | 8 | . | 6 | 0 |

**2.** (*a*)

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | ⑪ | | | |
| | | ③ | ~~1~~ | ⑩ | | ② | ⑩ |
| | ₹ | ~~4~~ | ~~2~~ | ~~0~~ | . | ~~3~~ | ~~0~~ |
| − | ₹ | 1 | 6 | 2 | . | 2 | 5 |
| | ₹ | 2 | 5 | 8 | . | 0 | 5 |

(*b*)

| | | | | | | |
|---|---|---|---|---|---|---|
| | ₹ | 7 | 3 | 4 | . | 2 | 5 |
| − | ₹ | 2 | 1 | 4 | . | 0 | 0 |
| | ₹ | 5 | 2 | 0 | . | 2 | 5 |

(*c*)

| | | | | | | |
|---|---|---|---|---|---|---|
| | ₹ | 4 | 9 | 6 | . | 7 | 5 |
| − | ₹ | 3 | 0 | 4 | . | 4 | 5 |
| | ₹ | 1 | 9 | 2 | . | 3 | 0 |

(*d*)

| | | | | | | |
|---|---|---|---|---|---|---|
| | ₹ | 2 | 4 | 2 | . | 8 | 0 |
| − | ₹ | 1 | 3 | 2 | . | 5 | 0 |
| | ₹ | 1 | 1 | 0 | . | 3 | 0 |

**3.** (*a*) ₹809.35 + ₹471.50

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | ① | | | |
| | ₹ | | 8 | 0 | 9 | . | 3 | 5 |
| + | ₹ | | 4 | 7 | 1 | . | 5 | 0 |
| | ₹ | 1 | 2 | 8 | 0 | . | 8 | 5 |

Thus, ₹809.35 + ₹471.50 = ₹1280.85

(*b*) ₹909.80 + ₹742.60

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | ① | ① | | |
| | ₹ | | 9 | 0 | 9 | . | 8 | 0 |
| + | ₹ | | 7 | 4 | 2 | . | 6 | 0 |
| | ₹ | 1 | 6 | 5 | 2 | . | 4 | 0 |

Thus, ₹909.80 + ₹742.60 = ₹1652.40

(*c*) ₹841.70 + ₹688.30

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | ① | ① | ① | | |
| | ₹ | | 8 | 4 | 1 | . | 7 | 0 |
| + | ₹ | | 6 | 8 | 8 | . | 3 | 0 |
| | ₹ | 1 | 5 | 3 | 0 | . | 0 | 0 |

Thus, ₹841.70 + ₹688.30 = ₹1530

(*d*) ₹960.45 + ₹262.45

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | ① | | | ① | | |
| | ₹ | | 9 | 6 | 0 | . | 4 | 5 |
| + | ₹ | | 2 | 6 | 2 | . | 4 | 5 |
| | ₹ | 1 | 2 | 2 | 2 | . | 9 | 0 |

Thus, ₹960.45 + ₹262.45 = ₹1222.90

(*e*) ₹100 + ₹20.25 + ₹215.20

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | ₹ | 1 | 0 | 0 | . | 0 | 0 |
| | ₹ | | 2 | 0 | . | 2 | 5 |
| + | ₹ | 2 | 1 | 5 | . | 2 | 0 |
| | ₹ | 3 | 3 | 5 | . | 4 | 5 |

Thus, ₹100 + ₹20.25 + ₹215.20 = ₹335.45

(*f*) ₹7 + 25 p + ₹19 + 25 p + ₹106 + 25 p

| | | | | | | |
|---|---|---|---|---|---|---|
| | | (2) | | (1) | | |
| ₹ | | | 7 | . | 0 | 0 |
| ₹ | | | 0 | . | 2 | 5 |
| ₹ | | 1 | 9 | . | 0 | 0 |
| ₹ | | | 0 | . | 2 | 5 |
| ₹ | 1 | 0 | 6 | . | 0 | 0 |
| + ₹ | | | 0 | . | 2 | 5 |
| ₹ | 1 | 3 | 2 | . | 7 | 5 |

Thus, ₹7 + 25 p + ₹19 + 25 p + ₹106 + 25 p = ₹132.75

**4.** (*a*) ₹13.50 from ₹20

| | | | | | |
|---|---|---|---|---|---|
| | | (9) | | | |
| | (1) | (~~10~~) | (10) | | |
| ₹ | ~~2~~ | ~~0~~ | ~~.~~ | ~~0~~ | 0 |
| – ₹ | 1 | 3 | . | 5 | 0 |
| ₹ | 0 | 6 | . | 5 | 0 |

Thus, ₹20 – ₹13.50 = ₹6.50

(*b*) ₹29.20 from ₹80.20

| | | | | | |
|---|---|---|---|---|---|
| | (7) | (10) | | | |
| ₹ | ~~8~~ | ~~0~~ | . | 2 | 0 |
| – ₹ | 2 | 9 | . | 2 | 0 |
| ₹ | 5 | 1 | . | 0 | 0 |

Thus, ₹80.20 – ₹29.20 = ₹51

(*c*) ₹187.50 from ₹200.50

| | | | | | | |
|---|---|---|---|---|---|---|
| | | (9) | | | | |
| | (1) | (~~10~~) | (10) | | | |
| ₹ | ~~2~~ | ~~0~~ | ~~0~~ | . | 5 | 0 |
| – ₹ | 1 | 8 | 7 | . | 5 | 0 |
| ₹ | 0 | 1 | 3 | . | 0 | 0 |

Thus, ₹200.50 – ₹187.50 = ₹13

(*d*) ₹65 paise from ₹50

| | | | | | |
|---|---|---|---|---|---|
| | | (9) | (9) | | |
| | (4) | (~~10~~) | (~~10~~) | (10) | |
| ₹ | ~~5~~ | ~~0~~ | ~~.~~ | ~~0~~ | ~~0~~ |
| – ₹ | 0 | 0 | . | 6 | 5 |
| ₹ | 4 | 9 | . | 3 | 5 |

Thus, ₹50 – ₹0.65 = ₹49.35

**5.** Sum of ₹22.50 and ₹89.50

| | | | | | |
|---|---|---|---|---|---|
| | | (1) | (1) | | |
| ₹ | | 2 | 2 | . | 5 | 0 |
| + ₹ | | 8 | 9 | . | 5 | 0 |
| ₹ | 1 | 1 | 2 | . | 0 | 0 |

Thus, ₹22.50 + ₹89.50 = ₹112.00

| | | | | | |
|---|---|---|---|---|---|
| ₹ | | 4 | 4 | . | 5 | 0 |
| + ₹ | | 8 | 0 | . | 0 | 0 |
| ₹ | 1 | 2 | 4 | . | 5 | 0 |

Sum of ₹44.50 and ₹80.00 = ₹124.50

Now, subtracting ₹112.50 from ₹124.50

| | | | | | |
|---|---|---|---|---|---|
| ₹ | 1 | 2 | 4 | . | 5 | 0 |
| – ₹ | 1 | 1 | 2 | . | 0 | 0 |
| ₹ | 0 | 1 | 2 | . | 5 | 0 |

Thus, ₹124.50 – ₹112.00 = ₹12.50

**6.** (*a*)

| | | | | | |
|---|---|---|---|---|---|
| Mohan got from his father = | ₹ | 1 | 6 | 0 | |
| Mohan got from his mother = + | ₹ | 1 | 2 | 0 | |
| Total amount = | ₹ | 2 | 8 | 0 | |

Thus, Mohan has ₹280.

(*b*)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cost of a milk packet = | ₹ | | 2 | 8 | . | 5 | 0 |
| Cost of a biscuit packet = | ₹ | | 3 | 5 | . | 0 | 0 |
| Cost of a butter packet = + | ₹ | | 5 | 2 | . | 7 | 5 |
| Total cost of items = | ₹ | 1 | 1 | 6 | . | 2 | 5 |

Thus, Anu spent ₹116.25 in total.

(*c*)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cost of chocolate flavour waffle = | ₹ | 1 | 5 | 0 | . | 7 | 5 |
| Cost of strawberry flavour waffle = | ₹ | 1 | 1 | 0 | . | 2 | 5 |
| Cost of vanilla flavour waffle = + | ₹ | 1 | 1 | 3 | . | 0 | 0 |
| Cost of total item = | ₹ | 3 | 7 | 4 | . | 0 | 0 |

Thus, Joe spent ₹374 in total on buying the waffles.

(*d*)

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | (9) | (9) | | |
| | | | (10) | (~~10~~) | (10) | |
| Amount of money Shilpi has in her purse = | ₹ | 1 | 0 | ~~0~~ | ~~0~~ | 0 |
| Amount of money she spent on brunch = − | ₹ | | 7 | 5 | 5 | 0 |
| Money left with Shilpi = | ₹ | 0 | 2 | 4 | 5 | 0 |

Thus, ₹24.50 is left with Shilpi.

(*e*)

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | (9) | | |
| | | | (7) | (~~10~~) | (10) | |
| Amount of money Rishi has in digital wallet = | ₹ | 4 | ~~8~~ | ~~0~~ | ~~0~~ | 0 |
| Amount of money he spent from his wallet = − | ₹ | 4 | 3 | 2 | 5 | 0 |
| Balance left in his wallet = | ₹ | 0 | 4 | 7 | 5 | 0 |

Thus, ₹47.50 balance was left in his wallet.

## Practice Time 11C

**1.** (*a*)

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | (5) | | | |
| | ₹ | 1 | 1 | 0 | 7 | 0 |
| × | | | | | | 8 |
| | ₹ | 8 | 8 | 5 | 6 | 0 |

(*b*)

| | | | | | | |
|---|---|---|---|---|---|---|
| | | (3) | (2) | (1) | | |
| | ₹ | 1 | 6 | 5 | 2 | 0 |
| × | | | | | | 5 |
| | ₹ | 8 | 2 | 6 | 0 | 0 |

(*c*)

| | | | | | | |
|---|---|---|---|---|---|---|
| | ₹ | | 9 | 0 | 4 | 5 |
| × | | | | | 1 | 0 |
| | | | 0 | 0 | 0 | 0 |
| | | 9 | 0 | 4 | 5 | 0 |
| | ₹ | 9 | 0 | 4 | 5 | 0 |

(*d*)

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | (1) | (1) | | |
| | ₹ | | 1 | 4 | 9 | 5 |
| × | | | | | 1 | 2 |
| | | | 2 | 9 | 9 | 0 |
| | | 1 | 4 | 9 | 5 | 0 |
| | ₹ | 1 | 7 | 9 | 4 | 0 |

**2.** (*a*) 120 paise ÷ 4

$$\begin{array}{r} 30 \\ 4\overline{)120} \\ -12\downarrow \\ \hline 00 \\ -\ 00 \\ \hline 0 \end{array}$$

Thus, 120 paise ÷ 4 = 30 p

(*b*) ₹77 ÷ 7

$$\begin{array}{r} 11 \\ 7\overline{)77} \\ -7\downarrow \\ \hline 07 \\ -\ 7 \\ \hline 0 \end{array}$$

Thus, ₹77 ÷ 7 = ₹11

(*c*) ₹103.65 ÷ 5

$$\begin{array}{r} 20.73 \\ 5\overline{)103.65} \\ -10\downarrow\downarrow \\ \hline 036 \\ -\ 35\downarrow \\ \hline 015 \\ -\ 15 \\ \hline 0 \end{array}$$

Thus, ₹103.65 ÷ 5 = ₹20.73

**3.** (*a*) Cost of 1 balloon = ₹5

Cost of 15 balloons = ₹5 × 15

= ₹75

Thus, the cost of 15 such balloons is ₹75.

(*b*) Cost of one notebook = ₹25.75

Cost of six notebooks =

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | (3) | (4) | (3) | |
| | ₹ | | 2 | 5 | 7 | 5 |
| × | | | | | | 6 |
| | ₹ | 1 | 5 | 4 | 5 | 0 |

Thus, the cost of six notebooks is ₹154.50

(*c*) Total amount Alia had = ₹120.50

Number of children = 5

Amount of money each child will get
= ₹120.50 ÷ 5

$$\begin{array}{r|l} 5 & 120.50 \\ -10\downarrow & \hline 20 & \\ -20\downarrow & \hline 05 & \\ -5 & \hline 0 & \end{array} \quad 24.10$$

Thus, each child gets ₹24.10.

(*d*) Total cost of 3 calculators = ₹540
Cost of 1 calculator = ₹540 ÷ 3

$$\begin{array}{r|l} 3 & 540 \\ -3\downarrow & \hline 24 & \\ -24\downarrow & \hline 00 & \\ 00 & \hline 0 & \end{array} \quad 180$$

Thus, the cost of one calculator is ₹180.

(*e*) Cost of 9 packets noodles = ₹227.16
Cost of 1 packet noodles = ₹227.16 ÷ 9

$$\begin{array}{r|l} 9 & 227.16 \\ -18\downarrow & \hline 47 & \\ -45\downarrow & \hline 021 & \\ -18\downarrow & \hline 36 & \\ -36 & \hline 00 & \end{array} \quad 25.24$$

Thus, the cost of 1 packet noodles is ₹25.24.

## Practice Time 11D

| Fashion Bazaar | | | | Date: 10/12/20xx |
|---|---|---|---|---|
| Customer name: HARSHA | | | | Bill No. 100 |
| **S. No.** | **Items** | **Quantity** | **Cost per item** | **Total cost** |
| 1. | Shirt | 2 | ₹300 | ₹300 × 2 = ₹600 |
| 2. | Trouser | 3 | ₹450 | ₹450 × 3 = ₹1350 |
| 3. | Skirt | 1 | ₹250 | ₹250 × 1 = ₹250 |
| | | | **Total** | ₹2200 |

## Maths Fun (Page 206)

**1.** (*a*) ₹1022; One thousand twenty-two rupees
(*b*) ₹710; Seven hundred ten rupees
(*c*) ₹996; Nine hundred ninety-six rupees

**2.** Maya

## Chapter Assessment

**1.** (*a*) – (*iii*) ₹925.50 = Nine hundred twenty-five rupees fifty paise
(*b*) – (*ii*) There are no rupees.
(*c*) – (*i*) 1500 paise = $₹\frac{1500}{100}$ = ₹15
(*d*) – (*iv*) 1 rupees = 100 paise

$$\text{or 1 paisa} = \frac{1}{100} \text{ rupees} = ₹0.01$$

**2.** (*a*) One rupee coin = Two coins of [50] paise together.
(*b*) Four coins of fifty paise together = One [2] rupee coin.
(*c*) Five coins of one rupee together = One [5] rupee coin.

**3.** (*a*) ₹89.62 = Eighty-nine rupees sixty-two paise.
(*b*) ₹19.79 = Nineteen rupees seventy-nine paise.
(*c*) ₹0.54 = fifty-four paise
(*d*) ₹10.01 = Ten rupees one paise.

**4.** (*a*) 750 p = ₹7.50 (*b*) 4080 p = ₹40.80
(*c*) 1985 p = ₹19.85 (*d*) 3007 p = ₹30.07

**5.** (*a*) ₹12.40 = 12.40 × 100 paise = 1240 paise
(*b*) ₹99.75 = 99.75 × 100 paise = 9975 paise
(*c*) 8999 paise = $₹\frac{8999}{100}$ = ₹89.99
(*d*) 990 paise = $₹\frac{990}{100}$ = ₹9.90

**6.** (*a*) ₹322.50 + ₹269.50

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | ① | ① | | | |
| | ₹ | 3 | 2 | 2 | . | 5 | 0 |
| + | ₹ | 2 | 6 | 9 | . | 5 | 0 |
| | ₹ | 5 | 9 | 2 | . | 0 | 0 |

Thus, ₹322.50 + ₹269.50 = ₹592

(*b*) ₹640.05 + ₹490.35

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | ① | | | ① | |
| | ₹ | | 6 | 4 | 0 | . 0 | 5 |
| + | ₹ | | 4 | 9 | 0 | . 3 | 5 |
| | ₹ | 1 | 1 | 3 | 0 | . 4 | 0 |

Thus, ₹640.05 + ₹490.35 = ₹1130.40

(*c*) ₹598.63 – ₹418.59

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | ⑤ | ⑬ | |
| | ₹ | 5 | 9 | 8 | . ~~6~~ | ~~3~~ | |
| – | ₹ | 4 | 1 | 8 | . 5 | 9 | |
| | ₹ | 1 | 8 | 0 | . 0 | 4 | |

Thus, ₹598.63 – ₹418.59 = ₹180.04

(*d*) Same as part (*c*)

(*e*) ₹1236.75 × 5

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | ① | ① | ③ | ③ | ② | |
| | ₹ | 1 | 2 | 3 | 6 . | 7 | 5 |
| × | | | | | | | 5 |
| | ₹ | 6 | 1 | 8 | 3 . | 7 | 5 |

Thus, ₹1236.75 × 5 = ₹6183.75

(*f*) Same as part (*e*)

(g) ₹56 ÷ 7

$$7\overline{)56}(8$$
$$-56$$
$$0$$

Thus, ₹56 ÷ 7 = ₹8

(*h*) ₹90.09 ÷ 9

$$9\overline{)90.09}(10.01$$
$$-9\downarrow\ \ \ \

# CHAPTER 12 : DATA HANDLING

## Let's Recall

**1.** (*a*) Marigold (*b*) Jasmine
(*c*) Total number of flowers
= 30 + 40 + 10 + 15 + 18 + 29 = 142
(*d*) Yellow colour flower's = 40 + 15 + 29 = 84

**2.** (*a*) Number of children like action movies = 7
(*b*) Number of children like cartoon movies = 11
(*c*) Most popular movies = Cartoon
(*d*) Least popular movies = Musical
(*e*) Action and comedy

## Maths Fun (Page 214)

Anuj ate Banana.
Ali ate Cherry.
Kartik ate Watermelon.
Veena ate Apple.

## Practice Time 12A

**1.**

| Animal | Tally marks | Number of animals |
|---|---|---|
| Lion | 𝍸 \| | 6 |
| Tiger | 𝍸 \|\|\| | 8 |
| Elephant | 𝍸 | 5 |
| Monkey | 𝍸 \| | 6 |
| Bear | \|\|\|\| | 4 |
| Zebra | \|\|\| | 3 |

**4.** (*a*) Value of each symbol = 2 students.
(*b*) Ice cream is liked by most of the students.
(*c*) Kheer is liked by least of the students.
(*d*) Total number of students in class 3
= 14 + 10 + 6 + 4 + 8 + 10 = 52 .

**5.** (*a*) Number of students in Hurdle Race = 6
(*b*) Number of students in High Jump = 4
(*c*) Relay Race
(*d*) Long Jump
(*e*) Number of students participated in all = 7 + 4 + 6 + 2 + 4 = 23
(*f*) 7 – 4 = 3 students

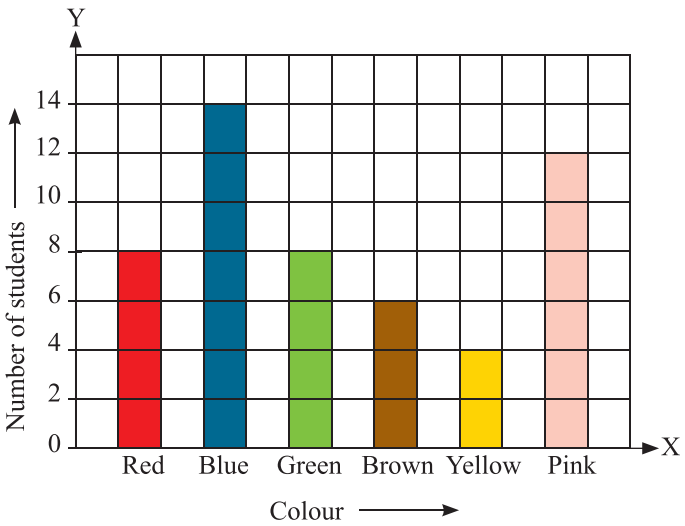
## Practice Time 12B

**1.** (*a*) Number of students belong to Maths club = 14
(*b*) Maths club
(*c*) Number of students belongs to Maths club = 6
Therefore, 14 – 6 = 8 students
(*d*) Total number of students in class 3 = Number of students in all the clubs.
= 12 + 8 + 14 + 6 = 40

**2.** (*a*) 30 (*b*) 35 – 20 = 15
(*c*) 10 (*d*) 20 + 35 = 55
(*e*) By walk

**3.** (*a*) Maths (*b*) Art
(*c*) Number of students like Maths = 10
(*d*) Number of students like English = 8
(*e*) 10 – 8 = 2
Hence, 2 more students like Maths than English.

## Mental Maths (Page 218)



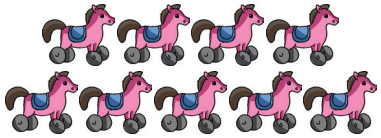

## Brain Sizzlers (Page 219)

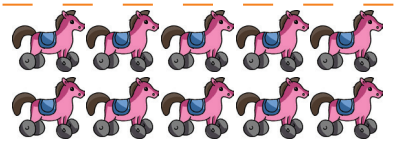
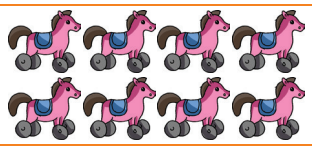
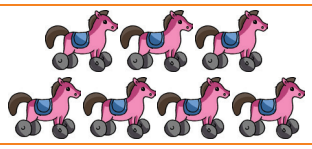
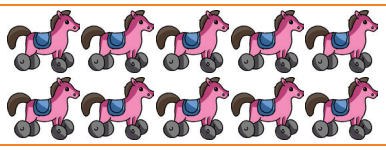
In Riya's pictograph: Each '——' stands for 2 cards.
In Priya's pictograph: Each '——' stands for 3 cards.

## Chapter Assessment

**1.** (*a*) Shikha, 7 (*b*) 6
(*c*) Saket and Navneet (*d*) Saransh

**2.**

| Days | Number of toys |
|---|---|
| Monday |  |
| Tuesday |  |

| | |
|---|---|
| Wednesday |  |
| Thursday |  |
| Friday |  |
| Saturday |  |

Key: 1  = 2 toys

**3.** (*a*) Bulldog

(*b*) Total number of students Mamta ask in all = 13 + 11 + 7 + 12 + 10 = 53 students.

(*c*) Number of students like Bulldog = 13 students.

(*d*) Pug

**4.** (*a*) On Tuesday and Wednesday, there were 1400 viewers in all.

(*b*) On Saturday and Sunday, there were 1600 viewers in all.

(*c*) On both days Wednesday and Thursday, there were 800 viewers.

(*d*) On Friday, there were 600 fewer viewers than on Saturday.

(*e*) The total number of viewers in all six days is 4200.

(*f*) 11.

## MODEL TEST PAPER – 2

**1.** (*c*) cylinder **2.** (*b*) metre

**3.** (*b*) 3 **4.** (*b*) 2 rounds

**5.** (*b*) 1 m 50 cm = 100 cm + 50 cm = 150 cm

**6.** (*b*) Since 2 kg = 2000 g

$\therefore \frac{2000}{8}$ g = 250 g

**7.** (*b*) 150 L – 54 L = 96 L

**8.** (*a*) ₹870.75 – ₹500 = ₹370.75

**9.** (*a*) 6 faces

**10.** (*b*) 2 L 500 mL = 2000 mL + 500 mL = 2500 mL.

**11.** (*a*) The top view of the Lotus Temple is circular in shape.

(*b*) One leap year = 366 days

(*c*) A rectangle is a 2-D shape.

(*d*) The opposite sides of each face are equal, in a cuboid.

(*e*) We eat dinner at night.

(*f*) We go to school in the morning.

(*g*) Asymmetrical figures have no line of symmetry.

**13.** Name of the shape = cube, Number of face = 6

**14.** Number of buttons in a shirt = 7

Total number of buttons in 11 shirts = 11 × 7 = 77 buttons.

**15.** Time taken by Malini to get ready for school = 30 minutes

Time taken by her in eating breakfast = 15 minutes

Therefore, total time taken by Malini = 30 minutes + 15 minutes = 45 minutes

**16.** Distance from Jaipur to Delhi = 268 km 400 m

Distance from Agra to Delhi = 217 km 670 m

Required distance = 268 km 400 m – 217 km 670 m = 50 km 730 m

| | km | | | m | | |
|---|---|---|---|---|---|---|
| | | | | (13) | | |
| | | | (7) | (3) | (10) | |
| | 2 | 6 | ~~8~~ | ~~4~~ | ~~0~~ | 0 |
| – | 2 | 1 | 7 | 6 | 7 | 0 |
| | 0 | 5 | 0 | 7 | 3 | 0 |

**17.**

| ABC Supermarket | | | | Date: 10/10/20xx |
|---|---|---|---|---|
| Customer name: Shreya | | | | Bill No. 0514 |
| S. No. | Items | Quantity | Rate | Total Price |
| 1. | Bread | 3 Packets | ₹15.00 | ₹45.00 |
| 2. | Baked beans | 2 bottles | ₹45.50 | ₹91.00 |
| 3. | Oranges | 5 kg | ₹47.00 | ₹235.00 |
| 4. | Potatoes | 4 kg | ₹12.25 | ₹49.00 |
| | | | Total | ₹420.00 |

**18.** (*a*) Jolly collected the most number of pebbles.

(*b*) Preeti will collect 49 more pebbles to be equal to Chavi.

(*c*) If Neha will collect 87 more pebbles, she will have 322 pebbles.

(*d*) Nidhi needs 92 more pebbles to have 400.

**19.** (*a*) Maximum number of vehicles, *i.e.*, Car = 40

Minimum number of vehicles, *i.e.*, Scooty = 15

Therefore, required difference = (40 – 15) vehicles = 25 vehicles.

(*b*) Total number of vehicles = (25 + 30 + 40 + 15) vehicles = 110 vehicles.