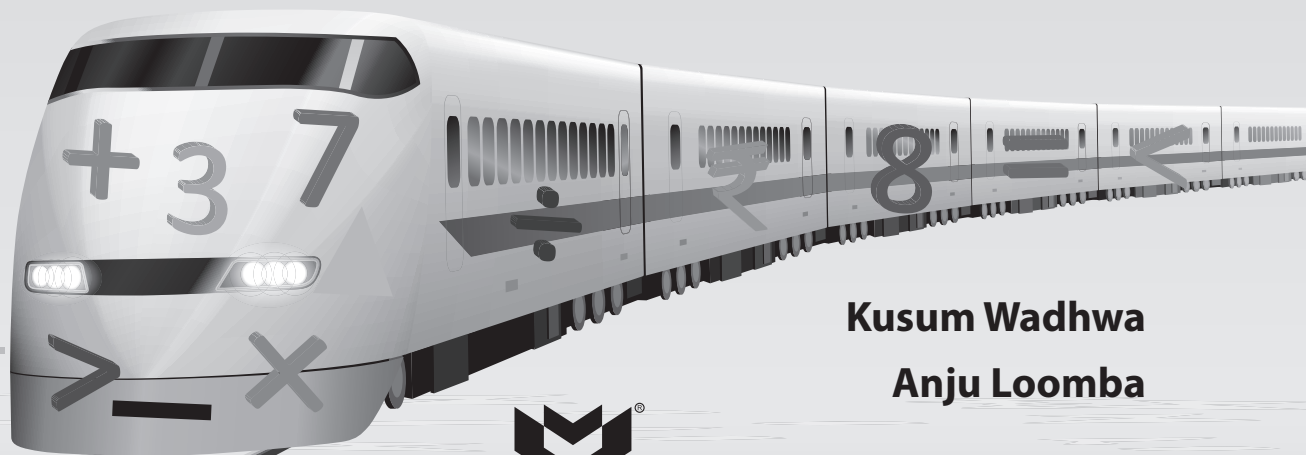


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# Destination Maths

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# TEACHER'S MANUAL



**Kusum Wadhwa**  
**Anju Loomba**



(An imprint of New Saraswati House (India) Pvt. Ltd.)  
New Delhi-110002 (INDIA)



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# Preface

The **Destination Maths** Teacher's Resource Pack is based on guidelines and aids to support and supplement classroom teaching. The aim of this pack is to empower teachers so that the process of teaching and learning becomes interesting and interactive. The tools and techniques provided will ensure a seamless flow of knowledge so that the students take an inherent interest in the subject. The main purpose of the pack is to allay the fear of Maths from the minds of the students such that they develop an inherent liking for the subject and become curious to know more. A wide array of resources are included in the Teacher's Resource Pack to provide maximum support to teachers.

The main components of the Teacher's Resource Pack are as follows.

## Teacher's Manual

Teacher's Manual has been developed to provide teaching guidelines to teachers so that they are prepared to teach a topic in the best possible manner. The manual comprises detailed **lesson plans**, which are supported by ample **practice material** in the form of **Worksheets** and **Model Test Papers** and their answers. There is a Teacher's CD as a digital support so that students are familiarised with the modern ways of teaching.

## Lesson plans

Each lesson plan explains each topic in detail. Its components are as follows.

- **Learning objectives** list out the measurable aims of each chapter, which should be achieved after teaching the chapter.
- **Concept building** gives a detailed method of explaining the important concepts of the chapter using various teaching aids.
- **Reinforce** puts emphasis on important points that should not be missed while teaching.

## Practice material

Worksheets and Model Test Papers along with their answers form the part of the practice material. These ensure that the students learn to solve the questions based on the concepts taught. This will help students have a good base right from the beginning on tackling tricky questions.

## Teacher's CD

Teacher's CD comprises flip book, animated concepts, interactive activities, lesson plans, along with solved worksheets and Model Test Papers.

## Web Support

The web support consists of worksheets, model test papers, and answers to worksheets and Model Test Papers. These would help teachers in assessing students on the concepts taught in the class.

# Contents

1. Numbers and Numeration	5
2. Operations on Whole Numbers	10
3. Factors and Multiples	15
4. Fractions	19
5. Decimals	23
6. Geometry	28
7. Shapes and Patterns	32
<b>Model Test Paper 1</b>	<b>36</b>
8. Money	38
9. Measurement	42
10. Time and Temperature	46
11. Perimeter, Area and Volume	50
12. Mapping	55
13. Data Handling	59
<b>Model Test Paper 2</b>	<b>63</b>
<b>Answer Key</b>	<b>65</b>



# Numbers and Numeration



## Learning Objectives

### Students will be able to

- ✦ recall the concept of place value and numbers up to 6 digits
- ✦ read, understand and build 7-digit and 8-digit numbers
- ✦ find the place value and face value of a digit in the given number
- ✦ find the predecessor and successor of a large number
- ✦ compare 7-digit and 8-digit numbers
- ✦ form the greatest and the smallest 7-digit and 8-digit numbers with the given digits
- ✦ understand the International System of writing 7-digit-8-digit numbers
- ✦ round off numbers to the nearest 10, 100 and 1000
- ✦ develop Roman numerals

## Concept Building

- Recall 6 digit numbers and rounding off numbers using the **Roll Back** section.

### 7-digit numbers

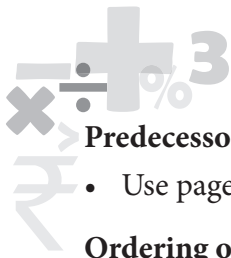
- Write a 7-digit number on the board and discuss the place value of each digit. Start from the ones place and when you cross the hundreds place, insert a comma or leave a gap to differentiate between the ones and thousands periods. Use a different colour to show the digits in the thousands period. Use a third colour to show the value of the digits in the lakhs period. Also, explain to students how to read these numbers. Repeat the process with other examples. Write these number in standard and expanded forms both.

### 8-digit numbers

- Repeat the above process to introduce 8 digit numbers. Introduce the new period, i.e., the crores period.

### Place value and face value

- Use pages 9 and 10 to explain place value and face value of a number.
- For practice, ask the students to do **Exercise 1.1** given on pages 10 and 11.



### **Predecessor and successor**

- Use page 11 to explain the predecessor and successor of a number.

### **Ordering of large numbers**

- Explain the rules of comparing numbers using solved examples given on pages 11 and 12.
- To reinforce, use **Let's Link** given on page 12.

### **Greatest number, Smallest number**

- The teacher can write any 7 digits on the board. Ask students to form the greatest and the smallest numbers using these digits. Explain the rules of forming the greatest number and the smallest number, i.e., to form the greatest number, the digits are arranged in the descending or decreasing order and to form the smallest number, the digits are arranged in the ascending or increasing order. Now take some examples with 0 as one of the digits. Same procedure can be used for 8-digit numbers.
- Two students can be asked to step forward. They can be given 7 or 8 digits. One can form the greatest number and one can form the smallest number.
- To reinforce the concept, ask them to do **Exercise 1.2** from the textbook.
- For further reinforcement, ask them to do the **Values and Attitudes** section from their textbooks. Stress upon the importance of reading newspaper.

### **International System**

- The teacher can get some clippings of the newspaper reports with numbers and explain the International System of Numeration.

### **Comparing the two systems**

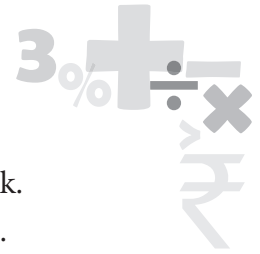
- Take some numbers and write them on the board in both the numeration systems (Indian and International) to make them understand properly.
- For more practice, students should do **Exercise 1.3** from their textbooks.
- For reinforcement of the systems of numerations, let students do the **Maths Lab Activity** given on page 20.

### **Rounding off numbers**

- Start the topic by giving examples where we use rounded off numbers and explain the rules of rounding off.
- To reinforce the concept, ask them to do **Exercise 1.4** from the textbook.

### **Roman numerals**

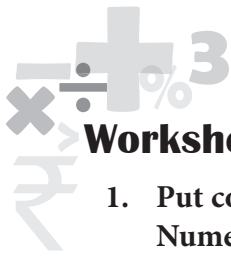
- Review the seven letters that are used to denote Roman numerals and explain the rules of the formation of Roman numerals.



- For practice, ask students to do **Exercise 1.5** from their textbooks.
- For reinforcement, let students do the **Life Skills** section from the textbook.
- For further reinforcement, ask them to do the **Fun Time** given on page 20.

To recapitulate the concepts learnt in the chapter, students will do **Let's Revise** section from their textbooks.

Use the **Let's Recap** section to revise the key points of the lesson.



## Worksheet 1

1. Put commas and rewrite the numbers in the Indian and International Systems of Numeration.

	Number	Indian System	International system
(a)	369512		
(b)	2397010		
(c)	32954602		
(d)	60032051		

2. Write the place value of the underlined digit in both the Indian and the International Systems of Numeration.

	Number	Indian System	International system
(a)	<u>2</u> 389435		
(b)	70 <u>4</u> 53271		

3. Write the expanded forms of

- (a) 3,97,20,407 \_\_\_\_\_  
(b) 4,49,00,006 \_\_\_\_\_

4. Make the smallest and the greatest 7-digit numbers using the digits 7, 5, 3, 6, 8. Each digit must be used at least once and the digits may be repeated.

- (a) Greatest \_\_\_\_\_ (b) Smallest \_\_\_\_\_

5. Write Roman Numerals for

- (a) 63 : \_\_\_\_\_ (b) 45 : \_\_\_\_\_  
(c) 99 : \_\_\_\_\_ (d) 72 : \_\_\_\_\_

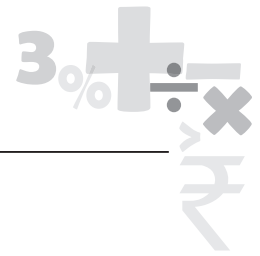
6. Use the correct sign (>, <, =).

- (a) 61,04,876 \_\_\_ 16,40,876 (b) 9,36,48,121 \_\_\_ 9,36,84,121  
(c) 76,050,403 \_\_\_ 76,050,433 (d) 36,56,438 \_\_\_ 36,56,438

7. Round off to the nearest thousand.

- (a) 88,645 \_\_\_\_\_ (b) 9,999 \_\_\_\_\_ (c) 26,428 \_\_\_\_\_





## Worksheet 2

### 1. Choose the correct answer.

- (a) The place value of the seventh digit from the right of a number is
- (i) Ten lakhs (ii) Ten thousands
- (iii) Millions (iv) Both (i) and (ii)
- (b) 2,11,34,678 is bigger than which of the following numbers.
- (i) 2,34,678 (ii) 2,21,34,678
- (iii) 34,500,000 (iv) 2,11,34,679

### 2. Give the number names and the expanded forms in the system in which these numbers are written.

- (a) 4,30,47,906 \_\_\_\_\_
- (b) 28,610,706 \_\_\_\_\_

### 3. Write the Hindu-Arabic numerals for

- (a) XL : \_\_\_\_\_ (b) LX : \_\_\_\_\_
- (c) LVII : \_\_\_\_\_ (d) XCVIII : \_\_\_\_\_

### 4. Arrange in the order mentioned.

- (a) Ascending

27,27,345; 27,27,745; 2,72,72,745; 2,07,745

- (b) Descending

5,67,06,432; 5,76,06,432; 5,67,80,234; 6,67,80,243

### 5. There were 7231 birds in the Sultanpur Bird Sanctuary in October 2014. Round off to the nearest 1000.

### 6. The circulation of a newspaper in a city of India is 487321. Round off to the nearest 100.



# Operations on Whole Numbers



## Learning Objectives

### Students will be able to

- ✦ add and subtract 7- and 8-digit numbers both with and without regrouping
- ✦ learn the properties of addition and subtraction
- ✦ understand the steps involved in problem solving
- ✦ learn to solve the addition and subtraction problems using models
- ✦ multiply large numbers by 2- and 3-digit numbers
- ✦ understand multiplication facts
- ✦ do the division of large numbers
- ✦ understand division facts
- ✦ learn to solve the multiplication and division problems using models
- ✦ find averages
- ✦ understand DMAS rule

## Concept Building

- Use **Roll Back** on page 21 to revise the concept of four-basic operations.

### Addition of large numbers

- Revise the concept of regrouping ones, tens, hundreds and thousands by taking several examples. Tell the students that addition of large numbers is done the same way as the addition of small numbers.

### Recalling properties of addition

- Recall the properties of addition using some examples.

### Subtraction of large numbers

- Revise the concept of borrowing from tens, hundreds and thousands by considering several examples. Ask the students that subtraction of large numbers is done the same way as the subtraction of small numbers.
- Explain the short-cuts in addition and subtraction on the board.



### Recalling properties of subtraction

- Recall the properties of subtraction using some examples.
- For practice, ask them to do **Exercise 2.1** given on page 23.

### Problem solving – Addition and subtraction

- Explain the steps of problem solving that will help the students to recognise the operation needed to solve a word problem. These steps can be used as a guideline and a sequence to be followed.
- To reinforce the concept, ask them to do the **word problems** section given on page 25.
- To further reinforce, students should do the **Life Skills** section from their textbooks.

### Models in addition and subtraction

- Students are already familiar with using diagrams for solving addition and subtraction problems. Recall the concept using some examples.
- To reinforce the concept, ask them to do the related **Try These** section given on page 27.

### Multiplication of large numbers

- Review the terms involved in multiplication such as multiplicand, multiplier and product. Review the concept of place value using examples given on pages 27 and 28 to teach multiplication by a 2-digit and by a 3-digit number.

### Multiplication facts

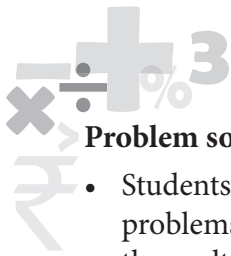
- Explain multiplication facts using several examples on the board.
- To reinforce the concept, ask them to do the related **Try These** section given on page 29.
- For more practice on the concept learnt, ask them to do **Exercise 2.2** given on page 30.

### Division of large numbers

- For explaining division, the teacher can use kidney beans and can review different situation of division, equal grouping, equal sharing and repeated subtraction with and without remainder.
- Recall the terms involved in division such as dividend, divisor, quotient and remainder using an example.

### Division facts

- Explain the division facts using several examples on the board.
- Explain the quick way of division by 10, 100 and 1000 as given on page 31.
- For more practice on the concepts learnt, ask them to do **Exercise 2.3** and word problems given on page 32.



### **Problem solving – Multiplication and division models**

- Students are already familiar with using diagrams for solving addition and subtraction problems. Recall the concept using some examples and tell them that they can model the multiplication and division problems also as they did with addition and subtraction problems.
- To reinforce the concept, ask them to do the related **Try These** section given on page 33.
- Framing questions given on page 34 will further help them in understanding the concept.
- For more practice on the concept learnt, ask them to do **Exercise 2.4** given on page 34.

### **Averages**

- Use pages 34 and 35 to make students understand the concept of averages.
- To reinforce the concept learnt, ask them to do the **Let's Link** and **Fun Time** sections.
- Ask students to do **Exercise 2.5** given on pages 35 and 36 for more practice.

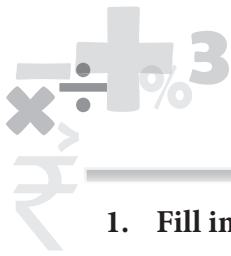
### **DMAS – The four operations together**

- Explain the rule of DMAS and tell them when the operations are given together in a question, follow the rules of DMAS to find the solution.
- For recapitulation of the four operation, ask them to do the **Math Lab Activity** given on page 38.

To recapitulate the concepts learnt in the chapter, students will do **Let's Revise** section from their textbooks.

Use the **Let's Recap** section to revise the key points of the lesson.





## Worksheet 2

### 1. Fill in the blanks.

(a)  $487316 \times 10 =$  \_\_\_\_\_

(b)  $92718 \times 100 =$  \_\_\_\_\_

(c)  $3287 \times 200 =$  \_\_\_\_\_

(d)  $457 \times 1000 =$  \_\_\_\_\_

### 2. Fill in the blanks.

(a)  $4967280 \times 0 =$  \_\_\_\_\_

(b)  $3849743 \times 1 =$  \_\_\_\_\_

(c)  $329 \times 5874 = 5874 \times$  \_\_\_\_\_

(d)  $49 \times (37 \times 55) = (49 \times 37) \times$  \_\_\_\_\_

(e)  $587321 \div 1 =$  \_\_\_\_\_

(f)  $82987 \div 82987 =$  \_\_\_\_\_

### 3. In three tests of 50 marks each, Sahil scored 47, 44 and 41. What were his average marks?

### 4. Look at the problems and decide whether to divide or multiply. Tick ( $\checkmark$ ) the right option.

(a) A laptop costs ₹20,000. What is the cost of 9 such laptops?

(i) Multiply

(ii) Divide

(b) ₹4,892 is to be divided equally among 4 students. How much money will each get?

(i) Multiply

(ii) Divide

### 5. Which least number should be added to 5,680 so that it is exactly divisible by 45.

### 6. A shopkeeper placed 1,80,000 books on 90 racks uniformly. How many books did the shopkeeper place on each rack?



# Factors and Multiples



## Learning Objectives

### Students will be able to

- ✦ review the concept of multiples, factors and concept of common multiples and factors
- ✦ understand the rules of divisibility for 2, 3, 4, 5, 6, 9 and 10
- ✦ understand the concept of prime and composite numbers
- ✦ find the prime factors of a number by the prime factorisation method
- ✦ find the highest common factor (HCF) and lowest common multiple (LCM)
- ✦ understand the properties of HCF and LCM
- ✦ understand the relation between HCF and LCM

## Concept Building

- Use the **Roll Back** section on page 39 to review the concept of multiples and factors.

### More about factors and multiples

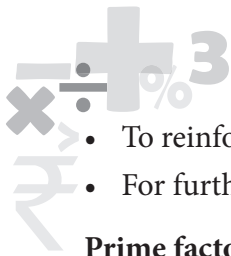
- Explain to students that the factors can be found using multiplication or division by solving an example on the board. Demonstrate to them how to find the common factors of the given numbers.
- Consider an example and demonstrate how to make a factor tree to find the prime factors of a number.
- To reinforce the concept, ask them to do **Exercise 3.1** given on page 41.

### Rules of divisibility

- Explain the rules of divisibility on pages 41 and 42.
- For reinforcement, ask them to do **Exercise 3.2** given on page 42.

### Prime and composite numbers

- Let the students colour the grid and complete the table given on page 43 and then explain to them the concept of prime and composite number.
- Let the students complete the grid and answer the questions that follows given on page 44.



- To reinforce the concept, ask them to do the related **Try These** section given on page 45.
- For further reinforcement, students should do the **Fun Time** section given on page 59.

### **Prime factorisation**

- Use pages 45 and 46 to explain the concept of prime factorisation.
- To reinforce the concept, ask them to do the **Life skills** section from their textbooks.
- For practice, students should do **Exercise 3.3** given on page 46.

### **Highest common factor**

- To explain HCF, demonstrate the activity given in the textbook on page 47.
- Explain all the 3 ways to find HCF using several examples.
- Make them understand all the properties of HCF.
- Ask them to do the **Let's Link** section given on page 49. This will be helpful to reinforce the concept learnt as well as link Mathematics with Science.
- For practice, students should do **Exercise 3.4** given on page 50.
- For further reinforcement, ask them to do **Math Lab Activity** given on page 57.

### **Lowest common multiple**

- Review the concept of the multiple. Now explain the concept of LCM using a number line.
- Explain the ways to find LCM using several examples.
- Make them understand all the properties of LCM.
- To reinforce the concept, ask them to do the **Values and Attitudes** section from the textbook.

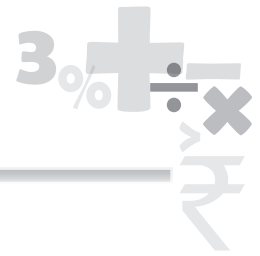
### **Important facts about HCM and LCM**

- Discuss the relation between HCF and LCM and write the formula on the board.
- For practice, students should do **Exercise 3.5** given on page 54.

To recapitulate the concepts learnt in the chapter, students will do **Let's Revise** section from their textbooks.

Use the **Let's Recap** section to revise the key points of the lesson.





## Worksheet 1

**1. Name the following.**

- (a) The number that has exactly two factors, 1 and the number itself. \_\_\_\_\_
- (b) The highest of the common factors of two or more numbers. \_\_\_\_\_
- (c) A number that has more than 2 factors. \_\_\_\_\_

**2. List all the prime numbers between 16 and 39.**

--

**3. Write the number which is prime as well as an even number.**

--

**4. Draw a factor tree to find the prime factorisation of 63.**

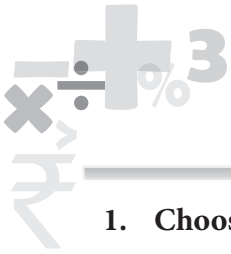
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**5. Find the common factors of 20 and 52.**

--

**6. Put (✓) for divisible and (✗) for not divisible.**

		Divisible by						
	Number	2	3	4	5	6	9	10
(a)	75							
(b)	126							
(c)	275							
(d)	996							
(e)	2430							



## Worksheet 2

---

1. Choose the correct answer.

(a) Every number is a multiple of

(i) 0

(ii) 1

(iii) 2

(iv) All of these

(b) Two numbers 41 and 13 have no common factors. Their LCM is

(i)  $4 + 13$

(ii)  $41 \times 13$

(iii)  $41 - 13$

(iv)  $41 \div 13$

2. Find the four multiples of:

(a) 6

(b) 13

(c) 20

3. Find the LCM.

(a) 18, 24

(b) 8, 18

(c) 12, 15, 30

4. The product of two numbers is 300. If their LCM is 60, find their HCF

5. The product of the HCF and LCM of two numbers is 726. If one of the numbers is 22, what is the other number?

6. Find the LCM of 28 and 42 using the prime factorisation method.

7. Find the LCM of 20, 35, 40 using the short division method.

Chapter  
**4**

# Fractions



## Learning Objectives

### Students will be able to

- ✦ recall the concept of fraction and the terms associated with it
- ✦ understand the meaning of equivalent fraction
- ✦ identify and find equivalent fractions
- ✦ reduce a fraction to its lowest term
- ✦ compare and order like and unlike fractions
- ✦ add and subtract like and unlike fractions
- ✦ add mixed fractions
- ✦ multiply two fractions
- ✦ find multiplicative reciprocal of a fraction
- ✦ divide a fraction by a whole number, another fraction and mixed fraction

## Concept Building

- Use the **Roll Back** section given on page 58 to revise fraction, and proper, mixed, unit, improper, like and unlike fractions.

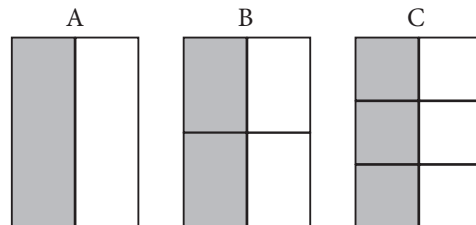
### Equivalent fractions

- To explain equivalent fractions, take rectangular papers as shown below. Colour them in different colours.

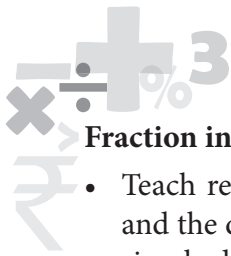
Paper A shows  $\frac{1}{2}$  has been coloured.

Paper B shows  $\frac{2}{4}$  has been coloured.

Paper C shows  $\frac{3}{6}$  has been coloured.



- Ask the students to observe how much of each shape has been coloured. Expected answer is that equal portion of the rectangles has been coloured. Now explain to them that  $\frac{1}{2}$ ,  $\frac{2}{4}$  and  $\frac{3}{6}$  represent the same fraction and are called equivalent fractions. Tell them that equivalent fractions have the same value.

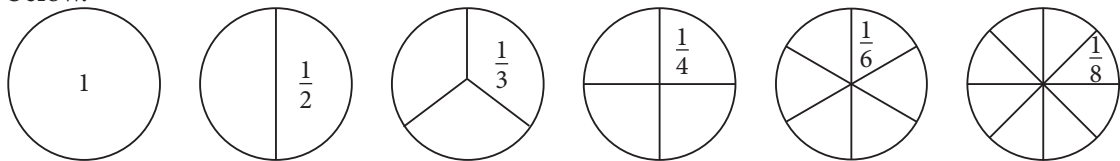


### Fraction in lowest terms

- Teach reducing fractions to their lowest terms by either dividing both the numerator and the denominator by their common factors till they cannot be divided further, or by simply dividing by their HCF in one step.
- To reinforce the concept, ask them to do **Exercise 4.1** given on page 61.

### Comparing and ordering fractions

- For comparison of fraction, take six paper plates of equal size. Mark them as shown below.



- Now take another eight plates and mark them as shown above and cut into pieces.
- In fact these pieces can be kept as a permanent teaching aid and can be used to teach equivalent fractions, comparison of fractions and as well as addition and subtraction of fractions.
- Now use pages 62 and 63 for teaching comparison of fractions.
- For reinforcement, ask them to do the **Try These** section given on page 64.
- For more practice, students should do **Exercise 4.2** given on page 64.

### Addition and subtraction of fractions

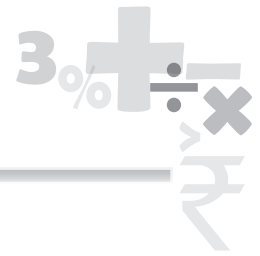
- Use pages 64 to 69 for teaching addition and subtraction of fractions.
- For practice, students should do **Exercise 4.3** and **Exercise 4.4** given on page 66 and 69 respectively.

### Multiplication and division of fractions

- Use pages 70 to 75 for teaching multiplication and division of fractions.
- To reinforce the concept, ask them to do the **Let's Link** section given on page 71. This section links Mathematics with Science.
- For further reinforcement, students should do **Maths Lab Activity** given on page 77.
- Let the students do the **Values and Attitudes** section given on page 74. Discuss the importance of sports in our life in the class.
- For more practice, students should do **Exercise 4.5, 4.6** and **4.7** given on pages 70 -71, 72-73 and 75, respectively.

To recapitulate the concepts learnt in the chapter, students should do **Let's Revise** section from their textbooks.

Use the **Let's Recap** section to revise the key points of the lesson.



## Worksheet 1

1. Fill in the missing numbers to make the statements true.

(a)  $\frac{2}{9} = \frac{14}{\square}$

(b)  $\frac{3}{11} = \frac{\square}{33}$

2. Write two equivalent fractions of the following.

(a)  $\frac{3}{8}$  \_\_\_\_\_

(b)  $\frac{9}{16}$  \_\_\_\_\_

3. Compare the following pairs of fractions using  $<$ ,  $>$  or  $=$ .

(a)  $\frac{5}{6}$  \_\_\_\_\_  $\frac{2}{3}$

(b)  $\frac{8}{6}$  \_\_\_\_\_  $\frac{12}{9}$

(c)  $\frac{4}{7}$  \_\_\_\_\_  $\frac{11}{17}$

4. Reduce to their lowest terms.

(a)  $\frac{12}{18}$  \_\_\_\_\_

(b)  $\frac{20}{36}$  \_\_\_\_\_

(c)  $\frac{48}{96}$  \_\_\_\_\_

(d)  $\frac{64}{78}$  \_\_\_\_\_

5. Add/Subtract.

(a)  $\frac{5}{7} + \frac{1}{2} + \frac{5}{14}$

(b)  $\frac{3}{20} - \frac{4}{30}$

(c)  $\frac{20}{25} - \frac{4}{10}$

(d)  $\frac{6}{8} - \frac{1}{4}$

6. Find the product.

(a)  $\frac{2}{5} \times \frac{7}{9}$  \_\_\_\_\_

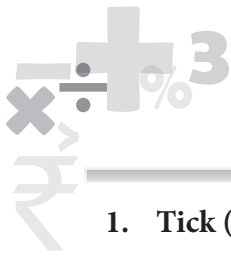
(b)  $\frac{3}{8} \times \frac{4}{5}$  \_\_\_\_\_

7. Find the reciprocals of:

(a)  $\frac{4}{13}$  \_\_\_\_\_

(b)  $\frac{7}{21}$  \_\_\_\_\_

(c)  $\frac{8}{19}$  \_\_\_\_\_



## Worksheet 2

1. Tick ( $\checkmark$ ) the correct answer.

(a)  $\frac{49}{8} =$  \_\_\_\_\_

(i)  $6\frac{8}{1}$

(ii)  $6\frac{1}{8}$

(iii)  $8\frac{1}{6}$

(iv)  $1\frac{6}{8}$

(b)  $5\frac{1}{7}$  as an improper fraction is

(i)  $\frac{36}{7}$

(ii)  $\frac{35}{7}$

(iii)  $\frac{35}{1}$

(iv) None of these

(c) The largest fraction among

$\frac{5}{7}, \frac{5}{11}, \frac{5}{8}, \frac{5}{12}$  is

(i)  $\frac{5}{7}$

(ii)  $\frac{5}{11}$

(iii)  $\frac{5}{12}$

(iv)  $\frac{5}{8}$

2. Find the sum of  $\frac{1}{2}$ ,  $\frac{3}{4}$  and  $\frac{5}{8}$ . \_\_\_\_\_

3. Find the difference of  $\frac{4}{5}$  and  $\frac{3}{10}$ . \_\_\_\_\_

4. Simplest form of  $\frac{63}{91}$  is \_\_\_\_\_

5. Find the product of  $\frac{5}{7}$  and  $\frac{14}{15}$ . \_\_\_\_\_

6. Multiplicative Inverse of  $\frac{8}{11}$  is \_\_\_\_\_

7. Solve:  $\frac{3}{14} \div \frac{2}{7}$ . \_\_\_\_\_

8. Sunidhi bought  $4\frac{1}{2}$  kg apples for ₹315. Find the cost of 1 kg apples.



# Decimals



## Learning Objectives

### Students will be able to

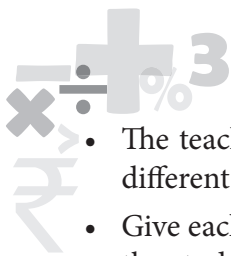
- ✦ recap the concepts of decimals
- ✦ understand tenths, hundredths and thousandths
- ✦ understand place value chart of decimals
- ✦ understand and build equivalent decimals
- ✦ identify like and unlike decimals
- ✦ convert like decimals to unlike decimals and vice versa
- ✦ compare and order the decimals
- ✦ add and subtract decimals
- ✦ round off decimals
- ✦ multiply decimals with whole numbers and a decimal
- ✦ divide a decimal by a whole number

## Concept Building

- Use the **Roll Back** section given on page 78 to revise the concept of decimals with tenths and hundredths. Teaching aids used to teach place value can be used to teach place value chart of decimals also.
- Use plain squares as well as squares with markings of tenths on them. Explain to the students that the plain shapes express wholes. Now ask students to colour 3 strips of the tenths sheets. Now students can be asked to represent the plain shape and coloured sheet as a fraction. The fraction is written as a mixed number  $1\frac{3}{10}$ . Tell them that this can be written as a decimal number 1.3.

Explain to them the role of the decimal point which is placed between a whole number and the fractional number. Also emphasise on the fact that every numeral after the decimal point is less than a whole.

- Use the place value chart given on page 78 to show the function of the decimal point and how the value of a numeral after decimal keeps reducing by ten times for every place to the right.



- The teacher can make the students to cut strips of tenths sheet and then demonstrate different numbers being called out by the teacher.
- Give each student a decimals place value chart. Call out a few decimal numbers and ask the students to arrange them in the place value chart given to them. The partners can then exchange and the teacher shows them the correct representations. The partners correct each other's chart.

### **Thousandths**

- Use decimal numbers place value chart given on page 80 to explain thousandths.
- Explain to the students the relation between tenths, hundredths and thousandths.
- Let students do examples given on page 81.

### **Equivalent decimals**

- Use tenths, hundredths, and thousandths to explain equivalent decimals given on page 81 and 82.
- For practice, ask them to do **Exercise 5.1** given on page 82.

### **Like and unlike decimals**

- Use pages 82 and 83 to explain like and unlike decimals and changing of unlike decimals to like decimals and vice versa.

### **Comparing and ordering of decimals**

- To explain comparison of decimals, use decimal models shown on page 83.
- For practice, ask them to do **Exercise 5.2** given on pages 84-85.

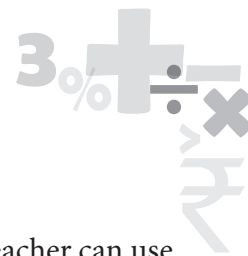
### **Addition and subtraction of decimals**

- Use pages 85 and 86 to explain the addition and subtraction of decimals.
- Explain to them that decimal numbers are added or subtracted in the same way as the whole numbers are added or subtracted by arranging them in columns and then regrouping wherever required.
- For practice, ask them to do **Exercise 5.3** and **Exercise 5.4** given on pages 86 and 87, respectively.
- To reinforce the concept learnt, students should do the **Fun Time** section.

### **Rounding off decimals**

- To teach rounding off or estimation, use the steps given on page 87.
- For reinforcement, students should do the **Let's Link** section given on page 88. This section links Mathematics with GK.





- For practice, ask them to do **Exercise 5.5** given on page 89.

### **Multiplication of decimals**

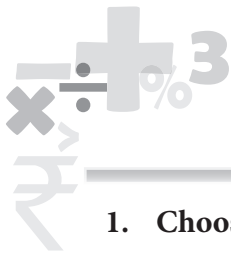
- To explain multiplication of a decimal number and a whole number, the teacher can use the models given on pages 89 and 90.
- Use **Common Error** given on page 90 for rectifying common mistakes of the students.
- To reinforce the concept learn, students should do the **life skills** section given on page 90.
- To explain the multiplication of a decimal number by a decimal number, the teacher can use the models given on page 90.
- Use page 91 to explain the pattern of multiplying by 10, 100 and 1000.
- For practice, ask them to do **Exercise 5.6** given on page 91.
- For further reinforcement, students should do the **Math Lab Activity** section given on page 95.

### **Division of decimals**

- To explain division of decimals, use pages 91 and 92.
- Use page 93 to explain the pattern of division by 10, 100 and 1000.
- For practice, ask them to do **Exercise 5.7** given on page 93.

To recapitulate the concepts learnt in the chapter, students should do **Let's Revise** section from their textbooks.

Use the **Let's Recap** section to revise the key points of the lesson.



## Worksheet 1

### 1. Choose the correct answer.

- (a) The decimal 32.754 is read as
- (i) three two point seven hundred fifty-four
  - (ii) three-two point seven five four
  - (iii) thirty-two point seven hundred fifty-four
  - (iv) thirty-two point seven five four
- (b) Which is greater in value?
- (i) 0.6
  - (ii) 0.06
  - (iii) 0.60
  - (iv) Both (i) and (iii)

### 2. Fill in the blanks.

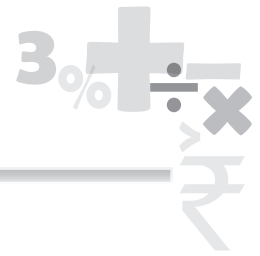
	Decimals	Like or unlike	Equivalent or not equivalent
(a)	3.90, 3.09, 3.99		
(b)	2 tenths, 20 hundredth, 200 thousandths		
(c)	14.14, 25.25, 36.36		

### 3. Compare the decimals using $<$ , $>$ or $=$ .

- (a)  $3.8 \underline{\quad} 3.81$       (b)  $9.07 \underline{\quad} 9.069$       (c)  $2 + 0.15 \underline{\quad} 3.05$

### 4. Solve.

- (a)  $9.999 + 1.111$  \_\_\_\_\_      (b)  $4.1 - 3.191$  \_\_\_\_\_  
(c)  $0.17 \times 5$  \_\_\_\_\_      (d)  $16.1 \div 7$  \_\_\_\_\_  
(e)  $8.46 \div 3$  \_\_\_\_\_      (f)  $3.5 \div 1000$  \_\_\_\_\_  
(g)  $3.75 \times 10$  \_\_\_\_\_      (h)  $4.009 \times 1000$  \_\_\_\_\_  
(i)  $9.808 \times 100$  \_\_\_\_\_      (j)  $0.898 \times 10$  \_\_\_\_\_



## Worksheet 2

### 1. Tick (✓) the correct options.

(a)  $10 \times 0.1$  is

(i) 10.1

(ii) 1.1

(iii) 1.0

(iv) 0.01

(b) 0.4 divided by 8 is

(i)  $Q = 0, R = 0.4$

(ii)  $Q = 0, R = 4$

(iii)  $Q = 0.5$

(iv)  $Q = 0.05$

### 2. Do as directed.

(a)  $\frac{3}{10}$  (write as decimals) \_\_\_\_\_

(b) 0.07 (write as fraction) \_\_\_\_\_

(c) 9.3201 write in the expanded form \_\_\_\_\_

(d) write in the short form.

$$700 + 80 + 3 + \frac{1}{10} + \frac{4}{100} \text{ _____}$$

### 3. Fill in the blanks with $>$ , $<$ or $=$ to make the statements true.

(a)  $4.07$  \_\_\_  $4.70$

(b)  $14.173$  \_\_\_  $15.631$

(c)  $8.4$  \_\_\_  $8.40$

(d)  $92.1$  \_\_\_  $92.01$

### 4. Fill in the blanks.

(a)  $49.7 \div 10 =$  \_\_\_\_\_

(b)  $6.818 \div 100 =$  \_\_\_\_\_

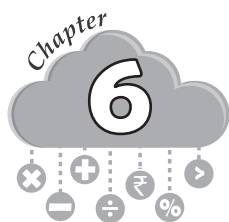
(c)  $51.87 \div 1000 =$  \_\_\_\_\_

(d)  $0.697 \div 0.697 =$  \_\_\_\_\_

### 5. The cost of 10 eggs is ₹36.95. What is the cost of 1 egg.

### 6. A tailor used 12.72 m of cloth to make 8 shirts. How much cloth was used in making 18 such shirt.

### 7. Anuja saved ₹52.75 from her pocket money. Her sister Oorja saved ₹24.95. Who saved more money? How much more?



# Geometry



## Learning Objectives

### Students will be able to

- ✦ review the concepts of point, line, ray and line segment
- ✦ understand the concept of intersecting lines and parallel lines
- ✦ identify the parts of an angle and learn how to name it
- ✦ measure and identify the angles as right, acute, obtuse and straight
- ✦ measure and construct angles using a protractor

## Concept Building

- To revise the concepts of point, line, ray and line segment, use the **Roll back** section given on page 97.

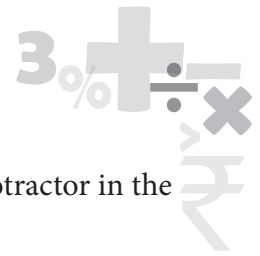
### More about lines

- To introduce the intersecting lines, use page 97. Draw the intersecting lines on the board and introduce the point of intersection.
- To introduce the parallel lines, use page 98. Draw the parallel lines on the board and explain the properties of these.
- For reinforcement, ask them to do the related **Try These** section given on page 98.

### Angles

#### *Types of angles*

- To introduce the concept of an angle. Take two strips of thick paper and place them one on top of the other. Now push in a drawing pin at one end on the thick cardboard, so, that you are able to move these. Move these strips to explain acute, obtuse and right angles. Use pages 98 and 99.
- For reinforcement, ask them to do the related **Try These** section given on page 99.
- For further reinforcement, students should do the **Life Skills** and **Let's Link** sections given on page 101 and 102, respectively.
- For more practice, ask them to do **Exercise 6.1** given on page 101.

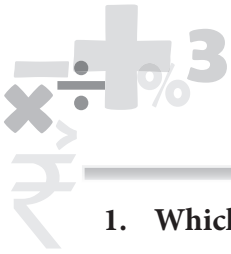


### *Measuring and drawing angles*

- Demonstrate measuring an angle and draw an angle with the help of a protractor in the class.
- For practice, ask them to do **Exercise 6.2** and **Exercise 6.3** given on pages 103-104 and 105, respectively.
- For reinforcement, students should do the **Fun Time** section given on page 106.
- For further reinforcement, ask them to do the **Math Lab Activity** given on page 107.

To recapitulate the concepts learnt in the chapter, students should do **Let's Revise** section from their textbooks.

Use the **Let's Recap** section to revise the key points of the lesson.



## Worksheet 1

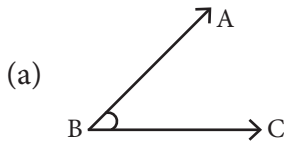
1. Which of these is always correct for an acute angle?

- (a) its arms are very small.
- (b) its measure is less than  $90^\circ$ .
- (c) its measure is greater than  $90^\circ$ .
- (d) both (i) and (ii).

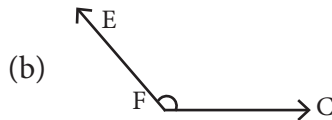
2. How many right angles make up a straight angle?

- (a) 1
- (b) 2
- (c) 3
- (d) 4

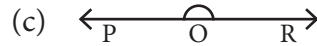
3. Name each angle in two ways. Measure each angle and say what type it is?



\_\_\_\_\_



\_\_\_\_\_

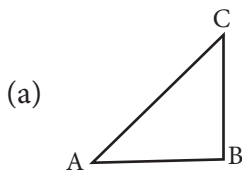


\_\_\_\_\_

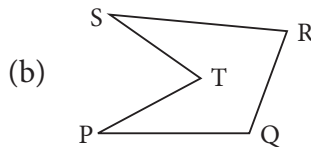
4. Draw an angle with a measure  $75^\circ$ .



5. Name the line segments in the following figures.

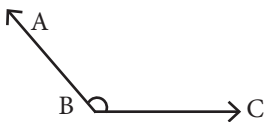


\_\_\_\_\_



\_\_\_\_\_

6. Measure the following angle with the help of a protractor.

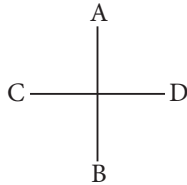


\_\_\_\_\_

## Worksheet 2

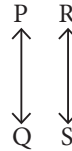
1. State whether the line segments are perpendicular to each other or not.

(a)



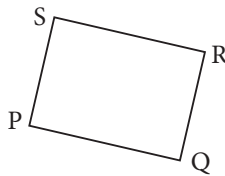
\_\_\_\_\_

(b)



\_\_\_\_\_

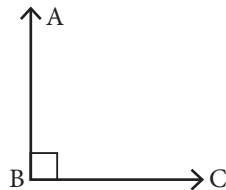
2. How many angles are formed in the given figure. Name them.



\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

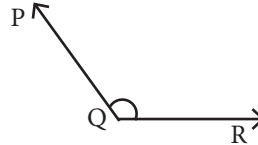
3. Name the vertex and arms of each angle.

(a)



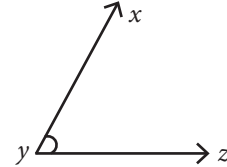
\_\_\_\_\_

(b)



\_\_\_\_\_

(c)



\_\_\_\_\_

4. Write T for true and F for false.

- (a) A line has no end point. \_\_\_\_\_ (b) A ray has a fixed length. \_\_\_\_\_  
 (c) An angle has two arms. \_\_\_\_\_  
 (d) A  $90^\circ$  angle is also called a right angle. \_\_\_\_\_  
 (e) A circle can have two centres. \_\_\_\_\_

5. Draw and label a line, a line segment and a ray.

6. Fill in the blanks.

- (a) A line has no end points while a \_\_\_\_\_ has one end-point.  
 (b) A \_\_\_\_\_ has 2 end points. (c) For  $\angle xyz$ , the vertex is \_\_\_\_\_.  
 (d) An obtuse angle has a measure between \_\_\_\_\_ and \_\_\_\_\_.



# Shapes and Patterns



## Learning Objectives

### Students will be able to

- ✦ understand symmetry and lines of symmetry
- ✦ create symmetrical shapes using the line of symmetry
- ✦ understand the meaning of slides and flips and difference between the two
- ✦ understand the concept of rotation
- ✦ identify shapes that have quarter and half rotation
- ✦ understand rotational symmetry
- ✦ create patterns using rotation
- ✦ recognise the nets of shapes
- ✦ draw cubes and cuboids using isometric dot pages

## Concept Building

- Use the **Roll Back** section given on page 108 to revise the concept of symmetry and patterns.

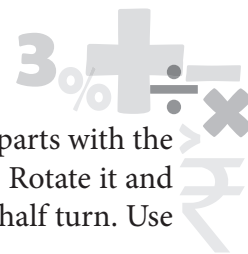
## More about symmetry

- Use pictures from old magazines and cut-outs of different geometrical shapes, and by using the method of folding, introduce the concept of line of symmetry.
- Explain the meaning of vertical and horizontal lines of symmetry given on page 109.
- For reinforcement, ask them to do the related **Try These** section given on page 109.
- To further reinforce, students should do the **Let's Link** section given on page 110. This section links Mathematics with English.
- Use page 110 to explain the number of lines of symmetry a geometrical plane shape has.
- Draw an irregular figure on the board. Use a mirror to draw its reflected shape. Tell students that the reflected shape starts from the line of symmetry.
- For practice, ask them to do **Exercise 7.1** given on page 111 and 112.

## Slides, flips and turns

- Use page 112 to explain the difference between slides and flips.





- Take a paper plate. Divide it into four equal parts. Colour two out of four parts with the same colour. Press a thumb pin in the centre and fix it on a flannel board. Rotate it and let the students decide whether it looks the same after a quarter turn or a half turn. Use the pages 112 and 113 to explain it better.
- For reinforcement, ask them to do the related **Try These** section given on page 113.

### Rotational symmetry

- Use page 114 to explain the rotational symmetry.
- For reinforcement, students should do the **Life Skills** section given on page 114.
- For practice, ask them to do **Exercise 7.2** given on pages 114 and 115.

### Patterns

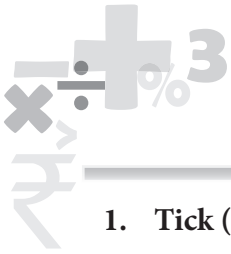
- Students are already familiar with patterns. Use pages 115 and 116 to introduce the patterns in nature as in flowers, leaves, moon, etc.
- For reinforcement, ask them to do **Exercise 7.3** given on page 116.

### Nets

- To explain the net of a cube, take a cube-shaped box of cardboard or empty chalk box and open it up to show the 'net' of the shape. Emphasise on the fact that the net of a cube has 6 squares.
- Use page 116 to draw a cube and a cuboid on the isometric paper.
- For reinforcement, ask them to do **Exercise 7.4** given on page 117 and 118.

To recapitulate the concepts learnt in the chapter, students should do **Let's Revise** section from their textbooks.

Use the **Let's Recap** section to revise the key points of the lesson.

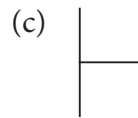
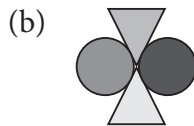
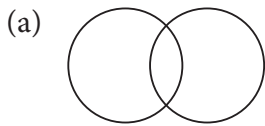


# Worksheet 1

**1. Tick (✓) the correct options.**

- (a) The number of lines of symmetry that shapes have varies between  
 (i) 1 and 2 (ii) 1 and 4  
 (iii) 1 and uncountable (iv) 0 and uncountable
- (b) Which of these shapes will look the same after a quarter turn?  
 (i) Circle (ii) Square  
 (iii) Rectangle (iv) Both (i) and (ii)

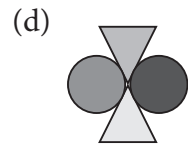
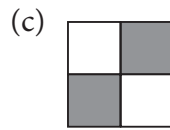
**2. Each of these figures has more than one line of symmetry. Mark the lines of symmetry.**



**3. After how many quarter turns each of these will look the same as the original.**

(a) 8 \_\_\_\_\_

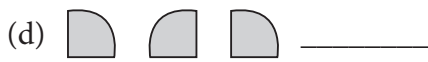
(b) 1 \_\_\_\_\_



\_\_\_\_\_

\_\_\_\_\_

**4. Complete the patterns.**



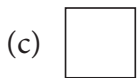
**5. Match the following.**



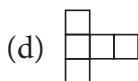
(i) cube



(ii) cylinder open on both ends



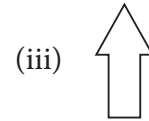
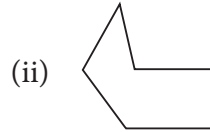
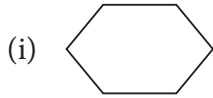
(iii) open box



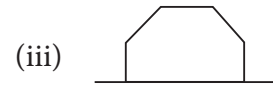
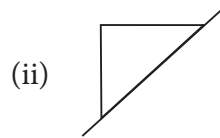
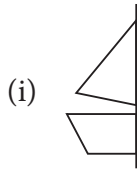
(iv) cone open at the bottom

## Worksheet 2

1. (a) Which of these shapes are symmetrical? Draw the lines of symmetry.



(b) Draw the reflection of the given shapes.



2. Draw how these letters will look after these turns.

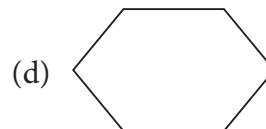
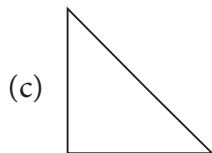
	Letter	$\frac{1}{4}$ turn	$\frac{1}{2}$ turn
(a)	B		
(b)	F		
(c)	C		
(d)	K		

3. Tick (✓) the ones that would look the same after a half turn.



\_\_\_\_\_

\_\_\_\_\_



\_\_\_\_\_

\_\_\_\_\_



# Mathematics

## Model Test Paper 1

Class 5

Time: 2 hours

Total Marks: 50

**1. Fill in the blanks.** (1 × 7 = 7)

- (a) 1 crore = \_\_\_\_\_ millions                      (b)  $SP = CP +$  \_\_\_\_\_
- (c)  $25 \div 5 \times 2 + 8 =$  \_\_\_\_\_
- (d) A number which has more than two factors is called a \_\_\_\_\_ number.
- (e) The first even multiple of 5 is \_\_\_\_\_ .
- (f)  $\frac{4}{9}$  \_\_\_\_\_  $\frac{8}{11}$  (put >, < or =)
- (g) 89.7 will be rounded off to \_\_\_\_\_ .

**2. Write the period and the place value of the underlined digits.** (1 × 3 = 3)

- (a) 85,932,674                      (b) 79,290,005                      (c) 80,075,882

**3. Add/Subtract using the compensation strategy.** (2 × 2 = 4)

- (a)  $98 + 65$                       (b)  $115 - 27$

**4. Multiply:** (2 × 2 = 4)

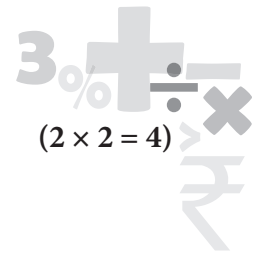
- (a)  $48907 \times 327$                       (b)  $592871 \times 309$

**5. Divide.** (2 × 2 = 4)

- (a)  $928764 \div 14$                       (b)  $72865 \div 15$

**6. Find the HCF of 25, 55 and 75 by prime factorisation method.** (2 × 1 = 2)

**7. Find the LCM of 9, 27 and 49.** (2 × 1 = 2)



8. Find the product.

(a)  $\frac{5}{7} \times \frac{3}{11}$

(b)  $\frac{3}{8} \times \frac{2}{7}$

(2 × 2 = 4)

9. Divide.

(a)  $\frac{8}{11} \div \frac{11}{8}$

(b)  $\frac{14}{24} \div \frac{5}{2}$

(2 × 2 = 4)

10. Multiply.

(a)  $3.37 \times 5.4$

(b)  $6.257 \times 0.09$

(2 × 2 = 4)

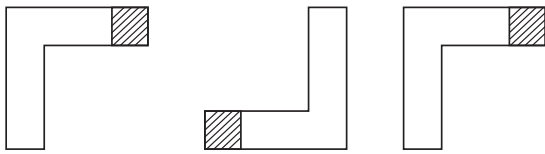
11. Divide.


(a)  $31.2 \div 8$

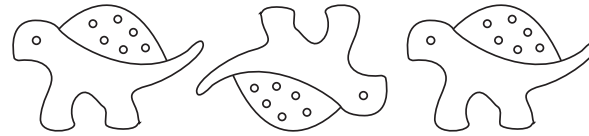
(b)  $3.948 \div 4$

(2 × 2 = 4)

12. Complete the pattern by drawing the shape with half turn in each case. (2 × 3 = 6)

(a) 

(b) 

(c) 

Three empty rectangular boxes are provided for drawing the next shapes in each pattern.

13. In a month, Sudhir goes to school by cycle for  $\frac{1}{10}$  of the days and rest of the days he goes by school bus. How many days does Sudhir go by bus? (1 month = 30 days)

(2 × 1 = 2)

# Chapter 8 Money



## Learning Objectives

### Students will be able to

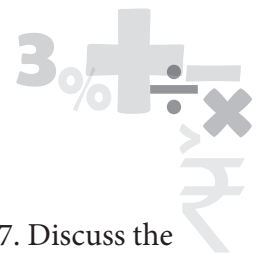
- ✦ revise addition, subtraction, multiplication and division of money
- ✦ connect decimals and money
- ✦ understand the unitary method
- ✦ understand the concept of profit and loss
- ✦ calculate profit and loss
- ✦ find the cost price or selling price of an item

## Concept Building

- Use **Roll Back** given on page 123 to revise the relation between rupee and paise.
- Discuss examples given on page 123 to explain how to find the price of 1 item, or the unit price of an item. Discuss several other situations where unitary method may be used in real life.
- Get wrappers of biscuit packets or empty cheese tin. Read out the price of a packet and the total weight or number of units mentioned on them. Tell the students that a 50 g biscuits packet costs ₹5. Now ask them to find the unit price, i.e., cost of 1 g in this case.
- For reinforcement, students should do **Maths Lab Activity** given on page 129.
- For reinforcement, ask them to do **Exercise 8.1** given on page 124.

## Cost price, selling price, profit and loss

- Narrate a story to introduce the concept of profit and loss to the children. For example, Ranjana bought two ribbons for ₹5 each. Her friend asked her to give her one. She took ₹6 from her friend. How much money did she take extra? When students say ₹1 then tell them that Ranjana made a profit of ₹1 on 1 ribbon. Use examples given on pages 124 and 125 to introduce CP, SP, profit and loss.
- For reinforcement, students should do the **Life Skills** section given on page 126.
- For reinforcement, ask them to do **Exercise 8.2** given on page 126.
- For further reinforcement, let students do the **Fun Time** section given on page 128.

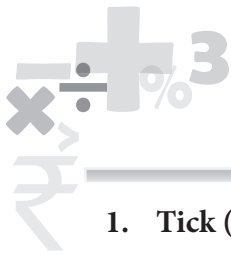


### **Finding selling price and cost price**

- Use pages 126 and 127 to find the cost price or selling price.
- For reinforcement, ask them to do the **Let's Link** section given on page 127. Discuss the role of fertilisers to grow good crops and that excessive use of fertiliser may be harmful for crop.
- For practice, students should do **Exercise 8.3** given on page 127.

To recapitulate the concepts learnt in the chapter, students should do **Let's Revise** section from their textbooks.

Use the **Let's Recap** section to revise the key points of the lesson.



## Worksheet 1

---

**1. Tick ( $\checkmark$ ) the correct answers.**

(a) If CP = ₹350 and loss = ₹175, then SP is

(i) ₹175

(ii) ₹325

(iii) ₹425

(iv) ₹250

(b) The incorrect relationship is

(i)  $CP = SP + \text{loss}$

(ii)  $\text{Loss} = CP - SP$

(iii)  $\text{Profit} = CP - SP$

(iv)  $SP = CP + \text{profit}$

**2. Find the CP when**

(a) SP = ₹575, profit = ₹130

(b) CP = ₹18,200, loss = ₹1,260

**3. Find the SP when**

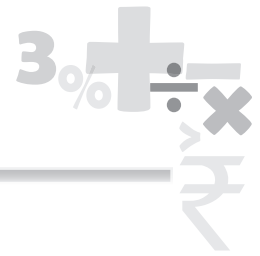
(a) CP = ₹6,540, profit = ₹970

(b) CP = ₹12,470, loss = ₹860

**4. Kanchan bought a second-hand scooter for ₹9,200. She spent ₹1,400 on its repairs. She sold the scooter for ₹10,000. Find her gain or loss.**

**5. By selling a cycle for ₹2,450 a shopkeeper made a profit of ₹310. Find the cost price of the cycle.**





## Worksheet 2

- In a transaction, there is neither profit nor loss, here**  
(a)  $SP > CP$             (b)  $SP < CP$             (c)  $SP = CP$             (d) none of these
- The cost of 6 eggs is ₹36, then the number of eggs that can be purchased for ₹96 is**  
(a) 10                        (b) 15                        (c) 16                        (d) 18
- The cost of 15 kg of rice is ₹630. Find the cost of 8 kg of rice.**

- Sourave buys a washing machine for ₹7215. He sells the washing machine for ₹8450. Find his gain or loss.**

- Sujata bought a toy car for ₹1000 and sold it for ₹1100. She bought it back for ₹1200 and sold it again for ₹1300. How much money did she gain or lose in buying and selling the toy car?**

- Kunj went to market to buy some oranges. One vendor was selling for ₹30 per dozen, the other was selling the same as 12 oranges for ₹27. Kunj bought 16 oranges from this vendor.**
  - What was the price of 1 orange in the first case?
  - How much money did Kunj pay for the oranges?
  - Had Kunj bought the oranges from the first vendor, how much money he would have paid?



# Measurement



## Learning Objectives

### Students will be able to

- ✦ review various units of measurement
- ✦ learn about millimetre and measure objects to the nearest millimetre
- ✦ understand the relation between the different units of length
- ✦ use decimals to express units of measurement
- ✦ understand the relation between different units of mass and convert g to kg and vice versa
- ✦ understand the relation between different units of capacity and convert mL to L and vice versa
- ✦ add and subtract measures of lengths, mass and capacity
- ✦ estimate measures

## Concept Building

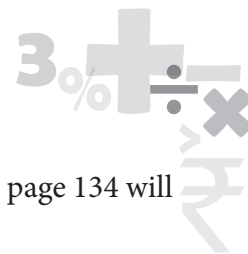
- Introduce the concept of units using the **Roll Back** section given on page 130.

### Measurement of length

- Introduce the need of millimetres with the help of an example. For example, ask students to consider the width of the tip of a pencil and ask them how one can measure it. They will understand that it is smaller than a centimetre. Make them understand how small a millimetre is. Use pages 130 and 131 to explain this further.
- For reinforcement, ask them to do the related **Try These** section given on page 131.

### Relation between different units of length

- Introduce them to the decimal place value chart of units of length on page 131. Using this to explain how a unit is 10 times less than the unit to its left and 10 times more than the unit to the right. For conversion of units, use the chart given on pages 131 and 132. Examples on page 132 will make them understand this better.
- For reinforcement, students should do the **Let's Link** section given on page 131. This section links Mathematics with Science.
- To reinforce the concept, ask them to do **Exercise 9.1** given on page 133.



### Application in real life

- To learn the application of units of length in real life, the example given on page 134 will be helpful.
- For reinforcement, students should do the **Values and Attitudes** section given on page 134.
- Discuss in class that cycling is good for health in class.
- To reinforce the concept, ask them to do **Exercise 9.2** given on page 134.

### Measurement of mass

- Use the place value chart of units of mass given on page 135 to explain the relationship of each to the basic unit. Explain how each unit is 10 times greater than the one to its right and 10 times smaller than the one to its left with special focus on g and kL, L and mL.
- For practice, ask them to do **Exercise 9.3** given on pages 135 and 136.
- To reinforce, students should do **Maths Lab Activity** given on page 141.

### Application in real life

- To learn the application of units of mass in real life, the given example given on page 136 will be helpful.

### Measurement of capacity

- Introduce students to the decimal place value chart of units of capacity given on page 137. Using this, explain how a unit is 10 times less than the unit to its left and 10 times more than the unit to the right. Examples on page 137 will make them understand this better.

### Application in real life

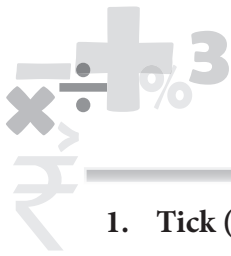
- To learn the application of units of capacity in real life, examples given on pages 137 and 138 will be helpful.
- For practice, ask them to do **Exercise 9.4** and **Mixed bag** given on pages 138 and 139.
- For reinforcement, let them do **Fun Time** given on page 140.

### Estimating measures

- Before teaching estimation, you must give them hands-on experience of measurement. This will be a good reference points for them.
- Give several objects to students to weigh. Let each student estimate and record the weight of each object and then compare the two.
- For reinforcement, let them do the related **Try These** section given on page 139.

To recapitulate the concepts learnt in the chapter, students should do the **Let's Revise** section from their textbooks.

Use the **Let's Recap** section to revise the key points of the lesson.



## Worksheet 1

### 1. Tick ( $\checkmark$ ) the correct options.

(a) Best suited unit to measure the weight of a housefly is

(i) kilogram

(ii) gram

(iii) milligram

(iv) hectogram

(b) 2 L 300 mL  $\times$  4 is equal to

(i) 8 L 200 mL

(ii) 9 L 100 mL

(iii) 9 L 200 mL

(iv) 8 L 1200 mL

### 2. Convert.

(a) 8 km into hm \_\_\_\_\_

(b) 4 m into mm \_\_\_\_\_

(c) 8630 g to kg \_\_\_\_\_

(d) 7 L into mL \_\_\_\_\_

### 3. Add/Subtract.

(a) 12 m 56 cm + 5 m 72 cm \_\_\_\_\_

(b) 37 km 832 m - 15 km 948 m \_\_\_\_\_

(c) 16 kg 372 g + 32 kg 804 g \_\_\_\_\_

(d) 25 kg 520 g - 17 kg 840 g \_\_\_\_\_

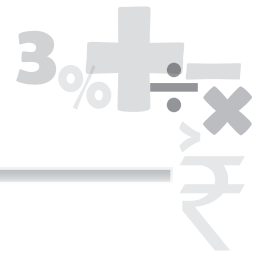
(e) 50 L 630 mL + 21 L 890 mL \_\_\_\_\_

(f) 63 L 156 mL - 34 L 475 mL \_\_\_\_\_

4. (a) A teapot has 2.5 L of tea. It is poured in cups with a capacity 250 mL each. How many cups can be filled?

(b) 1.35 m of cloth is required for making a pair of shorts and 1.75 m for making a shirt. How much cloth is required to make 2 pairs of shorts and 2 shirts?

(c) Mrs Gokhale bought 1 kg 500 g apples, 1 kg 225 g oranges and some mangoes. If the fruits she bought weighed 4.450 kg, how many kilograms of mangoes did she buy?



## Worksheet 2

### 1. Tick (✓) the correct options.

(a) To convert kilogram to gram you will

(i) multiply by 1000

(ii) divide by 1000

(iii) multiply by 100

(iv) divide by 100

(b) 7 m 6 dm is equal to

(i) 7.6 m

(ii) 0.76 m

(iii) 76 m

(iv) 760 m

### 2. Convert.

(a) 800 m into hm \_\_\_\_\_ (b) 12 hg into g \_\_\_\_\_ (c) 7 L into dL \_\_\_\_\_

### 3. Add/Subtract

(a) 32 kg 250 g – 18 kg 600 g \_\_\_\_\_

(b) 15 km 275 m + 18 km 803 m \_\_\_\_\_

(c) 44 L 92 mL + 11 L 853 mL \_\_\_\_\_

(d) 16 km 112 m – 7 km 207 m \_\_\_\_\_

(e) 16 kL 256 L + 27 kL 903 L \_\_\_\_\_

(f) 52 g 925 mg + 36 g 125 mg \_\_\_\_\_

4. Madhu purchased a 12 m cloth. She used 4 m to make her Salwar kameez, 2 m to make a shirt and 1 m 20 cm to make a pair of pants. Find the total length of the cloth left with Madhu?

5. A horse was given 1 kg 750 g of food everyday. What quantity of food is required for 7 days.

6. A fountain pen can be filled 10 times from a bottle containing 1 litre of ink. How much ink can be filled in the fountain pen at one time?



# Time and Temperature



## Learning Objectives

### Students will be able to

- ✦ develop the relationship between hours and minutes; minutes and seconds
- ✦ add and subtract measures of time
- ✦ calculate the starting time and the finishing time of an event when the duration is given
- ✦ calculate the finishing or starting date of an event when the duration is terms of days is known
- ✦ develop the understanding of temperature
- ✦ know the units of temperature

## Concept Building

- To recapitulate the relation between days, hours and minutes use **Roll Back** given on page 142.

### Units of time

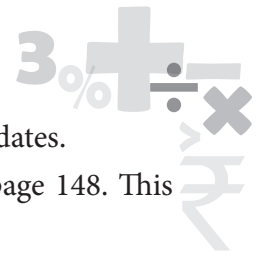
- Take a real clock and explain the concept of minutes and seconds and also the relation between a minute and a second. You can also use a stopwatch to further reinforce the concept of seconds. Use pages 143 and 144 to teach conversion of different units of time.
- For practice on the concept learnt, ask them to do **Exercise 10.1** given on page 145.

### Addition and subtraction of time

- Use pages 145 and 146 to teach addition and subtraction of time.
- To reinforce the concept, ask them to do the **Life skills** section given on page 146. Discuss why it is important to check the expiry dates on the products.
- For practice on the concept learnt, ask them to do **Exercise 10.2** given on page 147.

### Calculating the time

- Use a dummy clock to teach calculation of starting and finishing time.
- For further reinforcement, ask them to do the **Fun Time** section given on page 152.
- Before doing calculation of days, revise a calendar with the students.



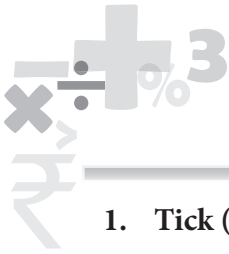
- Use a calendar to teach calculation of duration and starting and finishing dates.
- For reinforcement, students should do the **Let's Link** section given on page 148. This section links Mathematics with Science.
- For practice on the concept learnt, ask them to do **Exercise 10.3** given on page 149.

### Temperature

- The teacher can show a video or take a large cardboard cut-out of a thermometer to explain the markings on the thermometer. Hold it horizontally and explain to the students that it can be compared to a number line and the markings start from 95°F and greater numbers are to the right. The need for recording temperature should be discussed.
- Explain the Celsius and Fahrenheit scale with the help of the table given on page 150.
- For practice on the concept learnt, ask them to do **Exercise 10.4** given on pages 150 and 151.
- For reinforcement, students should do the **Maths Lab Activity** section given on page 152.

To recapitulate the concepts learnt in the chapter, students should do the **Let's Revise** section from their textbooks.

Use the **Let's Recap** section to revise the key points of the lesson.



## Worksheet 1

### 1. Tick ( $\checkmark$ ) the correct option.

- (a) What is the reading on a thermometer when water starts freezing?
- (i)  $0^{\circ}\text{F}$  (ii)  $0^{\circ}\text{C}$   
(iii)  $32^{\circ}\text{F}$  (iv) both (i) and (iii)
- (b) How many seconds are there in a day?
- (i) 24 seconds (ii)  $60 \times 60$  seconds  
(iii)  $24 \times 60$  seconds (iv)  $24 \times 60 \times 60$  seconds

### 2. Find the time.

- (a) 50 minutes after 11:25 am \_\_\_\_\_
- (b) 5 hour 10 minutes after 2:00 hours \_\_\_\_\_
- (c) 3 hours 50 minutes before 2:00 hours \_\_\_\_\_
- (d) 3 hour 45 minutes before 12:00 midnight \_\_\_\_\_

### 3. Find the date.

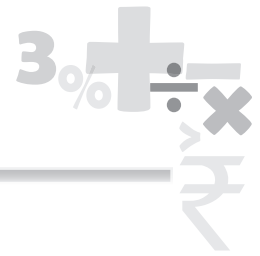
- (a) 28 days before 26 January 2016 \_\_\_\_\_
- (b) 70 days after 1 July \_\_\_\_\_

### 4. In the flight time table, fill in the missing entries.

S.No.	Flight no.	From-to	Departure Time	Arrival time	Flight duration
(a)	SG - 248	Goa to Mumbai	11:45 am	12:50 pm	
(b)	AL - 776	Mumbai to Kolkata		12:15 pm	2 h 35 min
(c)	6E - 575	Delhi to Cochin		02:10 pm	3 h 5 min

5. At Amritsar, the maximum and minimum temperatures on a certain day were  $33.8^{\circ}\text{C}$  and  $17.2^{\circ}\text{C}$ , respectively. The next day the maximum went up by  $1.7^{\circ}\text{C}$  and the minimum came down by  $1.2^{\circ}\text{C}$ . Find the maximum and the minimum temperatures on the next day.





## Worksheet 2

**1. Tick ( $\checkmark$ ) the correct option.**

(a) Boiling point of water is

(i)  $0^{\circ}\text{F}$

(ii)  $100^{\circ}\text{C}$

(iii)  $32^{\circ}\text{F}$

(iv)  $212^{\circ}\text{F}$

(b)  $5\frac{1}{4}$  minutes is

(i) 5 minutes 25 seconds

(ii) 5 minutes 30 seconds

(iii) 5 minutes 15 seconds

(iv) 5 minutes 0.25 seconds

**2. The maximum temperature in 8 Indian cities on 15 April 2015 was recorded as follows.**

**Bengaluru:  $29^{\circ}\text{C}$**

**Chennai:  $37^{\circ}\text{C}$**

**Goa:  $33^{\circ}\text{C}$**

**Kolkata:  $38^{\circ}\text{C}$**

**Mumbai:  $32^{\circ}\text{C}$**

**New Delhi:  $38^{\circ}\text{C}$**

**Manali:  $10^{\circ}\text{C}$**

**Kodaikanel:  $25^{\circ}\text{C}$**

(a) Your family is planning a one week holiday in April. Which city will you select? Why?

(b) If you had to go to Manali to visit an aunt, what kind of clothes will you carry?

**3. Sheela is a good tennis player. She spends 100 minutes every morning in tennis practice. She starts practising at 6:15 am. At what time does she end her practise?**

**4. All India School Cricket Tournament started in Mumbai on 25 February 2016. It lasted for 18 days. When did it end?**



# Perimeter, Area and Volume



## Learning Objectives

Students will be able to

- ✦ revise the concept of area and perimeter
- ✦ develop the formula for calculating perimeter of a rectangle and a square
- ✦ develop formula for calculating area of a rectangle and a square
- ✦ find area of triangle
- ✦ know the different units of area
- ✦ find the area of irregular figures
- ✦ explore the relationship between area and perimeter
- ✦ understand the concept of volume
- ✦ develop the formula to calculate volume

## Concept Building

- Use the **Roll Back** section given on pages 153 and 154 to review how to find the perimeter and the area of a closed figure using graphs.

### Perimeter of a square and a rectangle

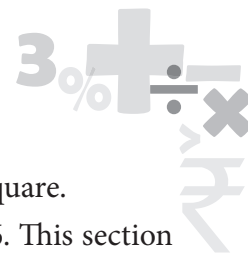
- Distribute cut-outs of rectangles and squares of different measurement to students. Ask them for the following details.

Rectangle			
S. No.	Length	Breadth	Perimeter = $(l + b)$
1			
2			
3			
4			

Square		
S. No.	Side	$P = 4 \times \text{side}$
1		
2		
3		
4		

- Verify the details mentioned above and arrive at the formula of the two, i.e., perimeter of a rectangle and a square. Use pages 154 and 155.

For practice on the concept learnt, ask them to do **Exercise 11.1** given on page 155.



### **Area of a rectangle and a square**

- Follow the same method for arriving at the formula of a rectangle and a square.
- To reinforce, students should do the **Let's Link** section given on page 156. This section links Mathematics with Social Science.
- For practice on the concept learnt, ask them to do **Exercise 11.2** given on page 157.

### **Area of a triangle**

- Use pages 157 and 158 to find the area of a triangle using a rectangle and graph.
- For practice on the concept learnt, ask them to do **Exercise 11.3** given on page 159.

### **Units of area**

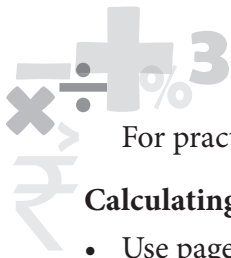
- Discuss units of area. Tell them that units are used according to the size of the area being measured, e.g., area of a country will be difficult to measure in sq. cm so it is measured in sq. km.
- Use pages 159 and 160 to find the area of an irregular shape using graphs.
- For practice on the concept learnt, ask them to do **Exercise 11.4** given on page 160.

### **Relationship between perimeter and area**

- Discuss examples given on page 161 to arrive at a relationship between the area and the perimeter.
- Discuss the use of perimeter and area in real life with the help of examples given on page 162.
- For reinforcement, students should do the **Values and Attitudes** section given on page 163, wherein an effort has been made to develop the sense of responsibility among children towards their elders.
- For practice on the concept learnt, ask them to do **Exercise 11.5** given on page 163.

### **Volume**

- Use page 163 to introduce the concept of volume. Take an empty carton. Open it to obtain its net. Now fold it back to get the carton again. Now explain to the students that the space enclosed within the carton is the volume of the carton.
- Take a variety of containers like empty toy box, cold drink can, etc. Fill these with different objects like kidney beans, sand, marbles, etc. Tell the students that the number of marbles each container contains is its volume. Repeat this with kidney beans then discuss the need for the standard unit of volumes.
- To reinforce the concept learnt, students should do the related **Try These** given on page 164.



For practice on the concept learnt, ask them to do **Exercise 11.6** given on page 165.

### Calculating volume

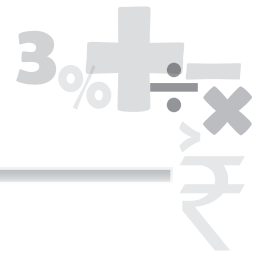
- Use pages 165 and 166 to arrive at the formula for a cube and a cuboid.
- To understand the use of volume in real life, discuss examples given on pages 166 and 167.
- For practice on the concept learnt, ask them to do **Exercise 11.7** given on pages 167 and 168.
- For reinforcement of the concept of volume, students should do the **Fun Time** section given on page 171.

### Volume of other shapes

- To find the volume of the irregular shapes, ask them to do the activity given on pages 168 and 169.
- For practice on the concept learnt, ask them to do **Exercise 11.8** given on pages 169 and 170.
- For reinforcement, ask them to do the **Maths Lab Activity** section given on page 171.

To recapitulate the concepts learnt in the chapter, students should do the **Let's Revise** section from their textbooks.

Use the **Let's Recap** section to revise the key points of the lesson.



## Worksheet 1

1. Tick (✓) the correct options.

(a) Length of the boundary of a closed figure is called its

(i) Perimeter

(ii) Area

(iii) Capacity

(iv) Measure

(b) Perimeter of a rectangle with dimensions 9 cm and 4 cm is

(i) 36 cm

(ii) 72 cm

(iii) 13 cm

(iv) 26 cm

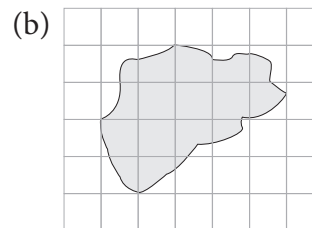
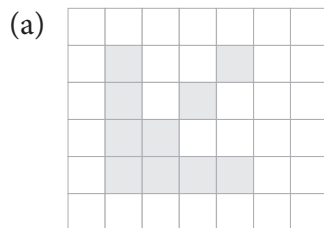
2. Find the side of the square whose perimeter is 72 cm.

3. Find the perimeter of the square whose side is 14 cm.

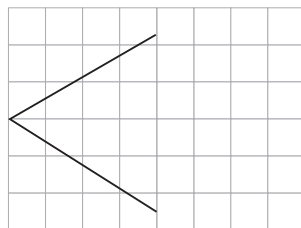
4. The length of the side of a square mat is 1 m 25 cm. Find the area of the mat.

5. Find the area of a rectangle whose length is 16 cm and breadth is 10 cm.

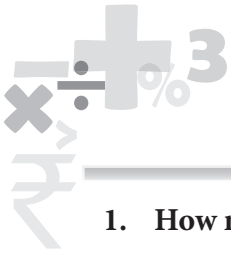
6. Find the area of the shaded part. Each square = 1 sq. cm.



7. In the shape given here two lines are drawn. Draw two more lines so as to have its area as mentioned.



17 sq. cm



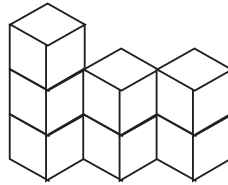
## Worksheet 2

1. How many small cubes of side 2 cm can be put inside a cubical box of side 8 cm?

2. The space occupied by a solid is called its

(a) volume                      (b) area                      (c) perimeter                      (d) circumference

3. Find the volume of the solid shown below. Each  represents 1 cm. cube.



4. The length, breadth and height of an iron trunk is 3 m, 1 m 15 cm and 30 cm, respectively. Find the volume of the trunk.

5. Find the volume of a sugar cube whose edge is 9 mm.

6. Which lunch box has greater volume — Shipra's or Kunj's?

The measure of Shipra's lunch box is 12 cm, 10 cm, 6 cm.

The measure of Kunj's lunch box is 11 cm, 11 cm 6 cm.

# Chapter 12 Mapping



## Learning Objectives

Students will be able to

- ✦ understand a plane drawing and a floor plan
- ✦ understand how to read maps
- ✦ understand how to read directions in maps
- ✦ understand scales in maps
- ✦ understand the usefulness of keys in maps

## Concept Building

- To start the topic, give them a picture each to fill the colours as per the given colour key. Use picture given on page 172, so that they can just understand directions.

### Plane drawing

- Use page 173 to explain what is a plan drawing and its usefulness.
- To reinforce the concept learnt, students should do the **Values and Attitudes** section given on page 173.

### Floor plan

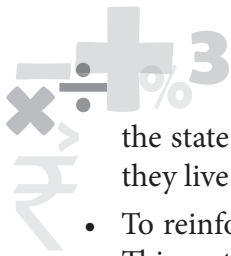
- Use page 174 to explain what is a floor plan and its usefulness.
- To reinforce the concept learnt, students should do the related **Try These** given on page 174.

### Reduction and enlargements

- Use pages 174 and 175 to understand the meaning of reduction and enlargement.
- To reinforce the concept learnt, students should do the related **Try These** section given on page 175.

### Scale and scale drawing

- With the help of reduction and enlargement, explain the concept of scale drawing.
- Show an atlas in the class to introduce the concept of the map. Start from the identification of the location of India in the world map, then in the map of India ask students to locate



the state students live in. In the state map, ask them to identify the location of the city they live in.

- To reinforce the concept, students should do the **Let's Link** section given on page 179. This section links Mathematics with GK and Science.
- Use pages 179 and 180 to explain the scale in maps.
- For reinforcement, ask them to do the **Life Skills** and **Maths Lab Activity** sections given on pages 180 and 185, respectively.
- For practice on the concept learnt, ask them to do **Exercise 12.1** given on pages 180 and 181.

### Keys in maps

- Use page 182 to explain the keys in maps.
- To reinforce the concept learnt, students should do the related **Try These** given on page 182.
- Bring real maps and a magnetic compass to class to explain how direction is oriented in a map.
- For practice on the concept learnt, ask them to do **Exercise 12.2** given on page 183.
- For reinforcement, ask them to do the **Fun Time** section on page 185.

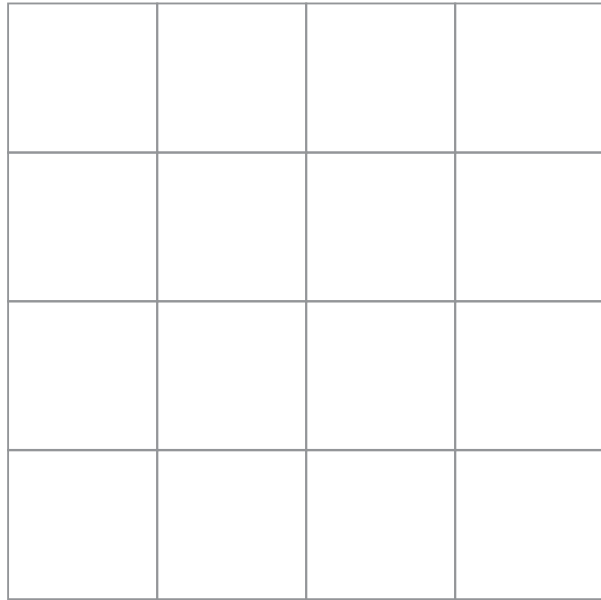
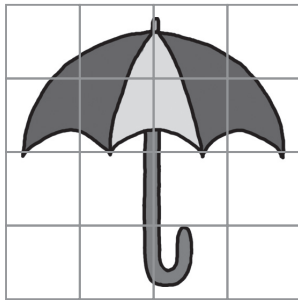
To recapitulate the concepts learnt in the chapter, students should do the **Let's Revise** section from their textbooks.

Use the **Let's Recap** section to revise the key points of the lesson.

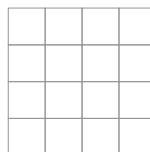
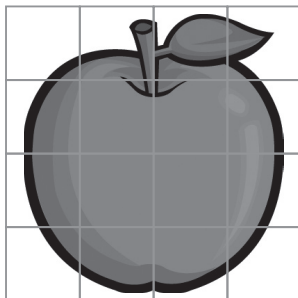


# Worksheet 1

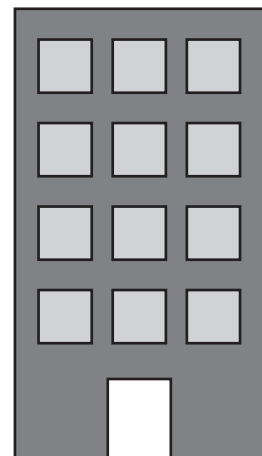
1. Enlarge this picture by drawing it on a 2-cm square grid.



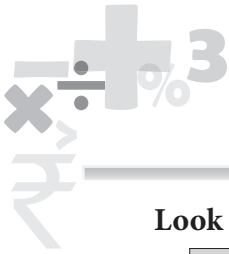
2. Reduce this picture by drawing it on  $\frac{1}{2}$  cm square grid.



3. Measure to find the scale used in the drawing.



Actual height of building = 48 m.



## Worksheet 2

Look at the map of India and fill in the blanks.



- In the map, the South direction is on the \_\_\_\_\_ . (top, bottom, right, left)
- If you want to go from Madhya Pradesh to Kashmir, you have to travel in the \_\_\_\_\_ direction.
- The state on extreme South of India is \_\_\_\_\_ .
- If you have to travel from Madhya Pradesh to Gujarat, you have to travel in the \_\_\_\_\_ direction.
- If you have to travel from Delhi to Assam, you have to travel in the \_\_\_\_\_ direction.

# Chapter 13

## Data Handling



### Learning Objectives

#### Students will be able to

- ✦ review bar graphs and pie charts
- ✦ understand more about circle graphs
- ✦ use tally marks to collect data
- ✦ understand the basics of line graphs

### Concept Building

- Use the **Roll Back** section given on page 186 to review bar graphs and circle graphs.

#### Tally marks

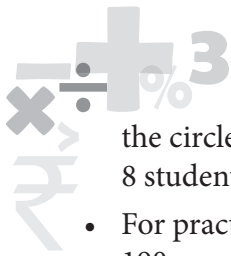
- Use page 187 to introduce the tally marks. On the board, draw a table and build a tally grid. For this the teacher may collect the data from the students like their birthdays or their favourite colour or fruit, etc. Let the students also make the tally marks on the board.

Favourite colour	Tally marks	Number of students
Yellow		2
Green		5
Red		4
Blue		8

- Once this is done, the number of students having each colour as their favourite can be found by counting tally marks.
- To reinforce the concept learnt, students should do the **Values and Attitudes** section given on page 188.
- For practice on the concept learnt, ask them to do **Exercise 13.1** given on page 188.

#### Circle graphs or pie chart

- Introduce the concept of circle graph. Take a cut-out of a circle and divide it into 8 equal parts. Now distribute these parts to 8 students. Ask them to colour these as per their favourite sport. Use colour coding for various sports, like yellow for cricket, red for football, etc. Then collect these parts and keep the similar colour parts together to form



the circle again. Now explain to students that this is a circle graph on favourite sports of 8 students. Now ask them questions based on these. Give more examples.

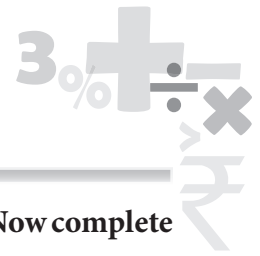
- For practice on the concept learnt, ask them to do **Exercise 13.2** given on pages 189 and 190.

### Line graphs

- Use pages 190, 191, 192 for line graphs. Several lines graphs can be discussed in class using different data.
- For practice on the concept learnt, ask them to do **Exercise 13.3** given on pages 191 and 192.
- To reinforce the concept learnt, students should do the **Fun Time** and **Maths Lab Activity** sections given on page 194.

To recapitulate the concepts learnt in the chapter, students should do the **Let's Revise** section from their textbooks.

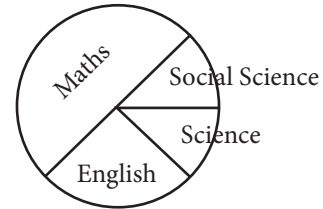
Use the **Let's Recap** section to revise the key points of the lesson.



## Worksheet 1

1. The circle graph shows the favourite subjects of 24 students of class 5. Now complete the following table.

Subject	Fraction in circle graph	Number of students
Social Science		
Science		
English		
Maths		

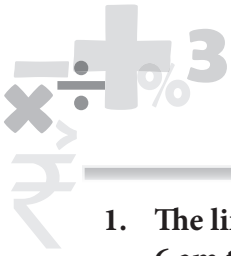


2. Draw a bar graph to represent the following data.

Subjects	Hindi	English	Maths	EVS	SST
Marks obtain	70	85	90	65	75

3. Complete the following tally chart.

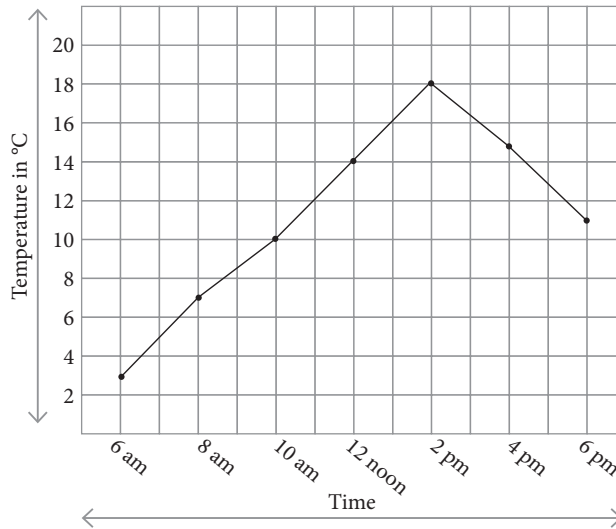
Favourite TV channel	Tally Marks	Number of students
Discovery		9
Movies		13
Music		10
Educational		6
Cartoon		5
News		2



## Worksheet 2

1. The line graph shows the day temperature of Delhi city in January, recorded from 6 am to 6 pm in 2 hour intervals. Answer the following questions.

- (a) At what time was the day warmest?  
(b) At what time was the day coolest? Why?



2. The monthly sale of books in a school book shop for the first 8 months is as follows:

Month	Jan	Feb	March	Apr	May	June	July
Sale	350	400	600	400	250	50	200

Draw a line graph to show the data.

- (a) Which month had the maximum sale?

- (b) When was the sale the least?

# Mathematics

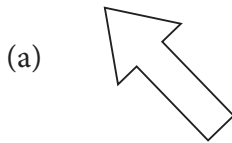
## Model Test Paper 2

Class 5

Time: 2 hours

Total Marks: 50

**1. Draw lines of symmetry for the following shapes. (2 × 3 = 6)**



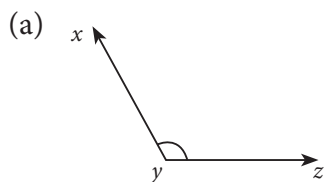
**2. Solve. (2 × 3 = 6)**

- (a) Smriti bought a scooty for ₹45,585. She bought its accessories for ₹3975 and spent another ₹2824 on getting it delivered to her house. She sold the scooty after 2 months for ₹69,875. Find her profit or loss.

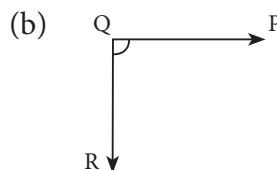
- (b) The population of a village is 87260. 1 out of 10 person is educated. How many people are educated?

- (c) Surabhi wants to cut two ribbons of lengths 350 cm and 375 cm into pieces of equal lengths without any wastage. Find the greatest possible length of the ribbons.

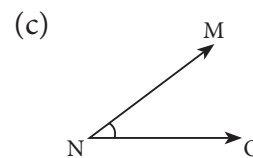
**3. Identify and name the following angles. (2 × 3 = 6)**



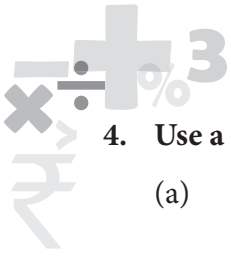
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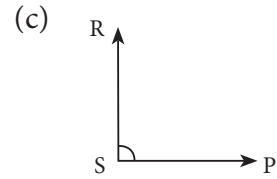
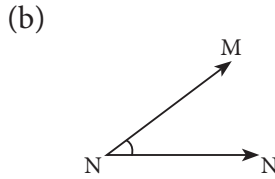
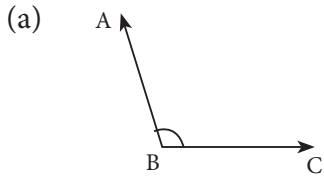
\_\_\_\_\_



\_\_\_\_\_



4. Use a protractor to measure each of the following angles: (2 × 3 = 6)



5. Convert: (1 × 3 = 3)

(a) 8700 dam = \_\_\_\_\_ km

(b) 3.9 kL = \_\_\_\_\_ L.

(c) 1879 g = \_\_\_\_\_ mg.

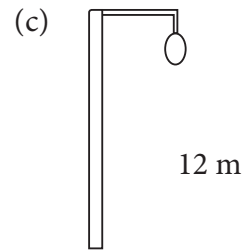
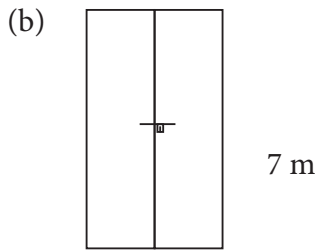
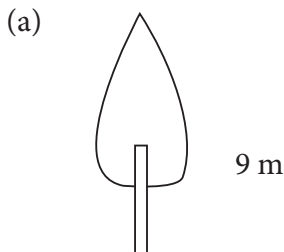
6. Find the perimeter of a rectangular scarf whose length and breadth are 5 m and 67 cm, respectively. (3)

7. A square painting is 8 m long. Find its area. (3)

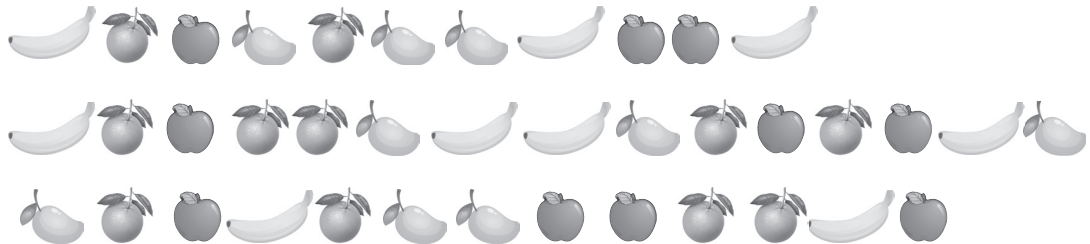
8. Find the volume of a box with each side measuring 6 cm. (3)

9. Ritika started from her house at 7:45 am. She took 50 minutes to reach her school. What time did she reach her school? (3)

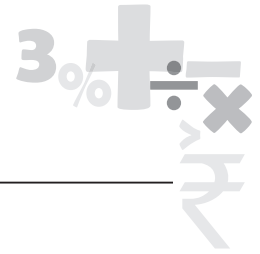
10. The actual length of the following is given. What will be their scaled down length. if 100 cm = 1 cm. (2 × 3 = 6)



11. Make a tally marks table to show the number of each fruit in the picture. (5)







# Answer Key

## Chapter-1

### Worksheet-1

1.

	Number	Indian System	International system
(a)	369512	3,69,512	369,512
(b)	2397010	23,97,010	2,397,010
(c)	32954602	3,29,54,602	32,954,602
(d)	60032051	6,00,32,051	60,032,051

2.

	Number	Indian System	International system
(a)	2389435	20,00,000	2,000,000
(b)	70453271	4,00,000	400,000

3. (a)  $3,00,00,000 + 90,00,000 + 7,00,000 + 20,000 + 400 + 7$   
 (b)  $4,00,00,000 + 40,00,000 + 9,00,000 + 6$
4. (a) 8887653 (b) 3335678
5. (a) LXIII (b) XLV (c) XCIX (d) LXXII
6. (a)  $>$  (b)  $<$  (c)  $<$  (d)  $=$
7. (a) 89,000 (b) 10,000 (c) 26,000

### Worksheet-2

1. (a) (i) (b) (i)
2. (a) Four crore thirty lakh forty-seven thousand nine hundred six.  
 $4,00,00,000 + 30,00,000 + 40,000 + 7,000 + 900 + 6$   
 (b) Twenty-eight million six hundred ten thousand seven hundred six.  
 $20,000,000 + 8,000,000 + 600,000 + 10,000 + 700 + 6$
3. (a) 40 (b) 60 (c) 57 (d) 98
4. (a) 2,07,745; 27,27,345; 27,27,745; 2,72,72,745
5. (b) 6,67,80,243; 5,76,06,432; 5,67,80,234; 5,67,06,432
5. 7000      6. 487300

## Chapter-2

### Worksheet-1

1. (a) 49875 (b) 942876 (c) 1428751  
 (d) 7342895 (e) 0

2. (a) 4,54,312 (b) 1,42,239
3. (a) 30 (b) 85
4. ₹29,710      5. ₹3,000
6. ₹3,35,677      7. ₹1,46,784

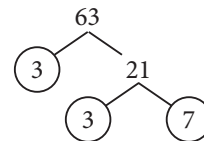
### Worksheet-2

2. (a) 0 (b) 3849743 (c) 329  
 (d) 55 (e) 587321 (f) 1 (g) 0
1. (a) 4873160 (b) 9271800  
 (c) 657400 (d) 457000
3. 44
4. (a) (i) (b) (ii)
5. 10      6. 35

## Chapter-3

### Worksheet-1

1. (a) Prime number  
 (b) Highest common factor or HCF  
 (c) Composite number
2. 17, 19, 29, 31, 37
3. 2      4.

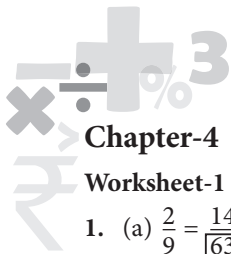


5. 1, 2, 4
- 6.

		Divisible by						
	Number	2	3	4	5	6	9	10
(a)	75	X	✓	X	✓	X	X	X
(b)	126	✓	✓	X	X	✓	✓	X
(c)	275	X	X	X	✓	X	X	X
(d)	996	✓	✓	✓	X	✓	X	X
(e)	2430	✓	✓	X	✓	✓	✓	✓
(f)	66660	✓	✓	✓	✓	✓	X	✓

### Worksheet-2

1. (a) (ii) (b) (ii)
2. (a) 6, 12, 18, 24 (b) 13, 26, 39, 52  
 (c) 20, 40, 60, 80
3. (a) 72 (b) 72 (c) 60
4. 5      5. 33      6. 84      7. 280



## Chapter-4

### Worksheet-1

- (a)  $\frac{2}{9} = \frac{14}{63}$  (b)  $\frac{3}{11} = \frac{9}{33}$
- (a)  $\frac{6}{16}, \frac{9}{24}$  (b)  $\frac{18}{32}, \frac{27}{48}$
- (a)  $>$  (b)  $=$  (c)  $<$
- (a)  $\frac{2}{3}$  (b)  $\frac{5}{9}$  (c)  $\frac{1}{2}$  (d)  $\frac{32}{39}$
- (a)  $1\frac{4}{7}$  (b)  $\frac{1}{60}$  (c)  $\frac{2}{5}$  (d)  $\frac{1}{2}$
- (a)  $\frac{14}{45}$  (b)  $\frac{3}{10}$
- (a)  $\frac{13}{4}$  (b)  $\frac{21}{7}$  (c)  $\frac{19}{8}$

### Worksheet-2

- (a) (ii) (b) (i) (c) (i)
- $1\frac{7}{8}$  3.  $\frac{1}{2}$  4.  $\frac{9}{13}$  5.  $\frac{2}{3}$
- $\frac{11}{8}$  7.  $\frac{3}{4}$  8. ₹70

## Chapter-5

### Worksheet-1

- (a) (iv) (b) (iv)

	Decimals	Like or unlike	Equivalent or not equivalent
(a)	3.90, 3.09, 3.99	Like	Not equivalent
(b)	2 tenths, 20 hundredth, 200 thousandths	Unlike	Equivalent
(c)	14.14, 25.25, 36.36	Like	Not equivalent

- (a)  $<$  (b)  $>$  (c)  $>$
- (a) 11.11 (b) 0.909 (c) 0.85 (d) 2.3  
(e) 2.82 (f) .0035 (g) 37.5 (h) 4009  
(i) 980.8 (j) 8.98

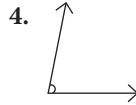
### Worksheet-2

- (a) (iii) (b) (iv)
- (a) .3 (b)  $\frac{7}{100}$  (c)  $9 + \frac{3}{10} + \frac{2}{100} + \frac{1}{1000}$   
(d) 783.14
- (a)  $<$  (b)  $<$  (c)  $=$  (d)  $>$
- (a) 4.97 (b) .06818 (c) .05187 (d) 1
- 3.695 6. 28.62 m 7. Anuja, ₹27.8

## Chapter-6

### Worksheet-1

- (b) 2. (b)
- (a)  $\angle ABC$  or  $\angle B$ , acute angle  
(b)  $\angle EFC$  or  $\angle F$ , obtuse angle  
(c)  $\angle PQR$  or  $\angle O$ , straight angle



- (a)  $\overline{AB}, \overline{BC}$  and  $\overline{CA}$   
(b)  $\overline{PT}, \overline{TS}, \overline{SR}, \overline{RQ}$  and  $\overline{QP}$
- $130^\circ, 180^\circ$

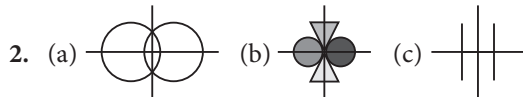
### Worksheet-2

- (a) Yes (b) No
- $\angle PSR, \angle SRQ, \angle RQP$  and QPS
- (a) Vertex - B, Arms - AB and BC  
(b) Vertex - Q, Arms - PQ and QR  
(c) Vertex - y, Arms - xy and yz
- (a) T (b) F (c) T (d) T (e) F
- Line Ray Line segment
- (a) ray (b) line segment  
(c) y (d)  $90^\circ$  and  $180^\circ$

## Chapter-7

### Worksheet-1

- (a) (iv) (b) (iv)



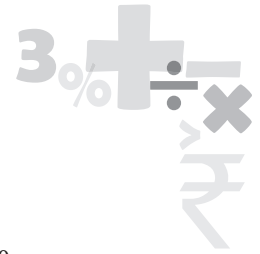
- (a) 2 (b) 4 (c) 2 (d) 2



- (a) (iii) (b) (iv) (c) (ii) (d) (i)

### Worksheet-2

- (a) (i) (iii)   
(b) (i) (ii) (iii)



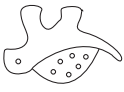


2.

	Letter	$\frac{1}{4}$ turn	$\frac{1}{2}$ turn
(a)	B	⌘	⌚
(b)	F	⌘	⌚
(c)	C	⌚	⌚
(d)	K	⌘	⌚

3. (d)

### Model Test Paper-1

- (a) 1 Hundred (b) Profit  
(d) 18 (e) composite (f) 10  
(g) < (h) 90
  - (a) Thousands periods; 900,000  
(b) Millions periods; 70,000,000  
(c) Millions periods; 0
  - (a) 163 (b) 88
  - (a) 15992589 (b) 183197139
  - (a)  $Q = 66340, R = 4$   
(b)  $Q = 4857, R = 10$
  - 5 7. 1323
  - (a)  $\frac{15}{77}$  (b)  $\frac{3}{28}$
  - (a)  $\frac{64}{121}$  (b)  $\frac{7}{30}$
  - (a) 18.198 (b) 0.56313
  - (a) 3.9 (b) 0.987
  - (a)  (b)  (c) 
13. 27 days

### Chapter-8

#### Worksheet-1

- (a) (i) (b) (iv)
- (a) ₹445 (b) ₹16,940
- (a) ₹7,510 (b) ₹11,610
- Loss ₹600 5. ₹2,140

#### Worksheet-2

- (c) 2. (c) 3. ₹336
- Gain ₹1,235 5. Profit ₹200
- (a) ₹2.50 (b) ₹36 (c) ₹40

### Chapter-9

#### Worksheet-1

- (a) (iii) (b) (iii)
- (a) 80 (b) 4000  
(c) 8 kg 630 g (d) 7000
- (a) 18 m 28 cm (b) 21 km 884 m  
(c) 49 kg 176 g (d) 7 kg 680 g  
(e) 72 L 520 mL (f) 28 L 681 mL
- (a) 9 (b) 6.20 m (c) 2 kg 175 g

#### Worksheet-2

- (a) (i) (b) (i)
- (a) 8 (b) 1200 (c) 70
- (a) 13 kg 650 g (b) 34 km 78 m  
(c) 55 L 945 mL (d) 8 km 905 m  
(e) 44 kL 159 L (f) 89 g 50 mg
- 4 m 80 cm 5. 12 kg 250 g 6. 100 mL

### Chapter-10

#### Worksheet-1

- (a) (iv) (b) (iv)
- (a) 12:15 pm (b) 7:10 hours  
(c) 22:10 hours (d) 8:15 pm
- (a) 29th December (b) 9 September
- (a) 1 h 5 min (b) 9:40 am  
(c) 11:05 am
- 35.5°C and 16°C

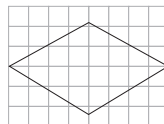
#### Worksheet-2

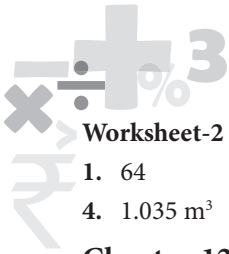
- (a) (ii) (b) (iii)
- (a) Manali (b) woollen clothes
- 7:55 4. 13th March

### Chapter-11

#### Worksheet-1

- (a) (i) (b) (iv)
- 18 cm 3. 56 cm
- 1.5625 m 5. 160 cm
- (a) 10 sq. cm (b) 12.5 sq. cm
- 7.





### Worksheet-2

1. 64      2. (a)      3.  $7 \text{ cm}^3$   
 4.  $1.035 \text{ m}^3$     5.  $729 \text{ mm}^3$     6. Kunj's lunch box

### Chapter-12

#### Worksheet-1

3.  $1 \text{ cm} = 8 \text{ cm}$

#### Worksheet-2

- (a) bottom      (b) south      (c) Kerala  
 (d) west      (e) east

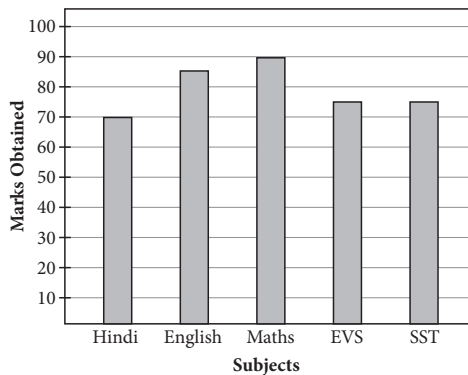
### Chapter-13

#### Worksheet-1

1.

Subject	Fraction in circle graph	Number of students
Social Science	$1/8$	3
Science	$1/8$	3
English	$1/4$	6
Maths	$1/2$	12

2.

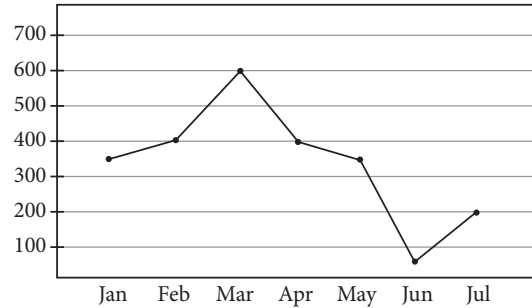


3.

Favourite TV channel	Tally Marks	Number of students
Discovery		9
Movies		13
Music		10
Educational		6
Cartoon		5
News		2

### Worksheet-2

1. (a) 2 pm      (b) 6 am  
 2.



- (a) 6 March      (b) June

### Model Test Paper-2

1. (a) (b) (c)   
 2. (a) Profit ₹17,491      (b) 8726      (c) 25 cm  
 3. (a)  $\angle xyz$       (b)  $\angle PQR$       (c)  $\angle MNO$   
 5. (a) 87      (b) 3900      (c) 1879000  
 6. 11 m 34 cm      7.  $64 \text{ m}^2$       8.  $216 \text{ cm}^3$   
 9. 8:35 am  
 10. (a) 9 cm      (b) 7 cm      (c) 12 cm  
 11.

Name	Tally Marks
banana	
mango	
apple	
orange	