



PROFESSIONAL DEVELOPMENT  
FOR QUALITY EDUCATION

## LESSON PLANS

# MATHEMATICS

## GRADE 2



BASED ON CURRICULUM 2020

Directorate of Curriculum and Teacher Education (DCTE)  
Khyber Pakhtunkhwa Abbottabad



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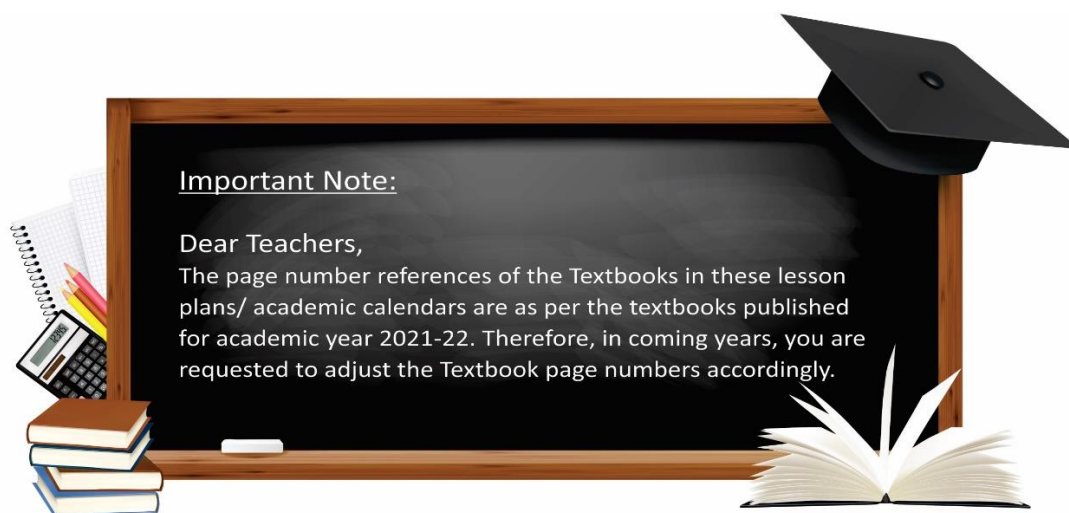
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**NOTIFICATION:**

**No.5564-5727/F.24/Vol-II/SLP/G-II/SS-M&E, dated: 30-08-2021** : Consequent upon its development and review by the respective development and review committees notified for the purpose, the Directorate of Curriculum and Teacher Education (DCTE), Khyber Pakhtunkhwa, Abbottabad, being the competent authority under the Khyber Pakhtunkhwa Supervision of Curricula, Textbooks and Maintenance of Standards of Education Act 2011, is pleased to notify the scripted lessons for Grade-II in the subjects of English, Urdu, Mathematics and General Knowledge based on Curriculum 2020 and the textbooks aligned on it for all educational institutions in Khyber Pakhtunkhwa for the Academic Year 2021-22 and onwards.

**DIRECTOR**

Copy forwarded for information and necessary action to the:

1. Secretary, Elementary & Secondary Education Department Govt. of Khyber Pakhtunkhwa, Peshawar.
2. Director, Elementary & Secondary Education Khyber Pakhtunkhwa.
3. Director, Professional Development, Khyber Pakhtunkhwa Landey Sarak Charsadda Road Larama, Peshawar.
4. All District Education Officers (M/F) in Khyber Pakhtunkhwa and Newly Merged Districts (NMDs).
5. All Sub Divisional Education Officers (M/F) in Khyber Pakhtunkhwa and Newly Merged Districts (NMDs).
6. Team Leader ASI-KESP, at Peshawar.
7. PS to Minister Elementary & Secondary Education, Khyber Pakhtunkhwa, Peshawar.
8. PS to the Director Local Office.

**ADDITIONAL DIRECTOR (SS)**



# PREFACE

The Government of Khyber Pakhtunkhwa, Elementary and Secondary Education Department, is committed to improve the quality of teaching and learning by taking a number of reforms and initiatives for the improvement of quality education in line with the national and international emerging trends. Providing quality education at primary level is the first imperative step towards achieving this goal.

For this purpose, the Directorate of Curriculum and Teacher Education Khyber Pakhtunkhwa, at Abbottabad, has been entrusted the responsibility of developing and reviewing teachers' in-service and pre-service training materials for the improvement of pedagogical skills of teachers.

These quality improving initiatives also include development of teacher's guides of scripted lesson plans at primary level that support teachers to implement new pedagogical methods. These teacher guides are intended to assist teachers with the provision of content, effective teaching methods and tools for measuring what learners have gained. These guides will ensure an effective and participative engagement of teachers with students as activities included in these lesson plans are student-centered.

These teachers' guides of Lesson Plans based on Student Learning Outcomes (SLOs) of Curriculum 2006 were developed for the first time in 2013. In 2018-2019, the Directorate of Curriculum & Teachers' Education Khyber Pakhtunkhwa undertook the task to revise and develop the Scripted Lesson Plans for Grade I-III according to the Academic Calendar on missing Students Learning Outcomes (SLOs).

As the Curriculum has been revised and new textbook are developed in 2020 for Grades Pre-I to V, hence the need has been felt that these Lesson Plans for Grades I to V are to be revised, developed and aligned with the updated Curriculum 2020, accordingly.

The Directorate of Curriculum and Teacher Education Khyber Pakhtunkhwa constituted different committees comprising of Curriculum/Subject experts and working teachers for developing these Lesson Plans based on Curriculum 2020. DCTE acknowledges the efforts of these experts for developing and reviewing these scripted lesson Plans.

The Directorate of Curriculum and Teachers Education Khyber Pakhtunkhwa is also thankful to the Technical Assistance of Khyber Pakhtunkhwa Education Sector Programme (KESP) in the finalization of these lesson plans.

**Gohar Ali Khan**  
**Director,**  
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**Khyber Pakhtunkhwa, Abbottabad.**

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# INTRODUCTION

Teaching and learning process in the classroom can vary concerning the ability, experience, and training of the teacher, which is why to standardize instruction, every good and effective teacher requires a lesson plan. The preparation of a lesson plan is important for clarity and comprehension regarding how the entire learning process will be handled as well as how students can understand and store the knowledge that is being passed onto them.

Lesson plans are vital for helping students accomplish their goals within a learning environment on a short-term and long-term basis. Lesson plans based on clearly defined Student Learning Outcomes (SLOs) concerning the textbooks ensure students are taught the required curriculum most efficiently. These ensure the teacher is adequately prepared and has a clear sense of direction for their lessons. In the context of Khyber Pakhtunkhwa, Lesson Plans are designed to support teachers to implement new pedagogical methods and help provide direction to instruction in the classrooms.

## **Traditional Teaching Style:**

Many teachers in Pakistan have come to rely on the textbook for teaching. They come into the classroom, ask students to open the textbook on a certain page, have students read a portion of the text, paraphrase the same and then ask students to answer questions that require them to reproduce material from the text. They teach every subject (the exception being mathematics) and every lesson in the same way. In some cases, the teacher is unable to complete the curriculum or impart the SLOs for a particular grade to the students effectively. Using lesson plans ensure standardization in teaching quality and provides a clear goal with relevant activities that can help students learn more effectively and achieve curriculum milestones.

## **What is a Lesson Plan?**

A lesson plan is a description of the instructions for the purpose of teaching the contents of the textbook of a particular subject and achieving Student Learning Outcomes (SLOs).

A lesson plan is the road map for teachers for the achievement of SLOs effectively during class time. The teachers design appropriate learning activities and develop strategies to obtain feedback on students' learning. A carefully constructed lesson plan allows the teacher to enter the classroom with more confidence and maximizes the chance of having a meaningful learning experience with the students.

A successful lesson plan addresses and integrates three key components:

- Student Learning Outcomes (SLOs).
- Learning activities.
- Assessment to check for students' understanding.

## Benefits of Lesson Planning

Most important benefits of lesson planning are to:

- Improve the quality of teaching and learning.
- Establish clarity of purpose.
- Facilitate achievement of student learning outcomes.
- Use available time effectively.
- Develop appropriate materials and ensure their effective use.
- Develop the confidence of teachers.

## Development Process of a Lesson Plan

Lesson plan usually starts with a thinking process. This thinking process is basically completed in four parts.

- **First**, determine the SLO; that is, what the children will learn, what they will be able to do upon completing the activities or work of the lesson.
- **Second**, determine what the students already know, before beginning of the lesson that can lead into a new curriculum of the day.
- **Third**, determine at least one way to assist the students in learning the new curriculum.
- **Fourth**, determine a way to evaluate the learning outcomes of the students.

## Components of a Lesson Plan

Common elements of lesson plans are; unit of study, a title/topic/problem, identification of student learning outcomes (SLOs), a sequence of learning activities including introductory, developmental and concluding activities, list of materials to be used and assessment strategies.

- **Choosing the Topic.** You can choose any topic from the textbook of the designated grade, a skill such as information gathering, a value such as peace, a current affair topic or an area of special concern such as the environmental pollution etc.
- **Identifying Student Learning Outcomes (SLOs) from the Curriculum.** The Curriculum has identified the student learning outcomes to be achieved for each topic. Identifying the student learning outcomes will help you to clarify the knowledge, skills, attitudes and values to be developed. Choose only one to three SLOs to develop your lesson (many more for a unit plan).
- **Material Resources.** A key part of planning is to ensure the identification, adaptation and development of resources required for the lesson for both teachers and students.
- **Development:**  
**Introductory Activities:** Introductory activities are designed to introduce the topic, a subtopic or establish connection with the previous lesson. They are designed to build readiness, create interest, raise questions and explore what children already know about the topic, recall relevant information, motivate students and focus their attention

on the topic/ theme/problem to be studied. Introductory activities can include an arrangement of pictures and other times that stimulate interest and questions. Others may be based on the teacher posing questions, reading a poem or story etc. A test, an inventory, or a quiz may be used to find out what students know in order to build on their existing knowledge.

### **Developmental Activities:**

Developmental activities should emerge out of the introductory activities. There should be smooth transitions between the activities to provide a smooth learning sequence. These activities are designed to actualize the student learning outcomes. They introduce new concepts, skills and values or build on past learning and should be linked with each other. Applicative or demonstrative activities extend learning and develop the ability to use concepts and skills. Creative and expressive activities enrich learning and develop the ability to improvise and apply learning in original ways.

- **Concluding the lesson:** Conclusion includes activities that serve to consolidate, summarize, or facilitate application of knowledge and skills of students to a new situation. They are generally related to the main idea of the lesson. The concluding activities could bring together the different main ideas of the unit. In this case, the emphasis should be on the educational outcomes and not on “putting on a show”.
- **Assessment of Learning.** Assessment strategies can tell us how well or to what extent the student learning outcomes have been met. Assessment of learning is important in all phases of the lesson/unit from introduction to conclusion. A variety of tools can be used to assess the realization of the chosen learning outcomes. Some of these will be prepared as part of the learning activities. For example, the drawing and labeling of a map, the checklist for evaluating a discussion or simply asking questions relevant to the day’s topic. Other tools such as tests can be prepared ahead of time as well.
- **Follow up/homework task.** This component includes follow up activities or home assignments to be undertaken by students at home.

**Month**

**1**

# ORDINAL NUMBERS



## STUDENT LEARNING OUTCOME

- Write ordinal numbers from first to twentieth.

## INFORMATION FOR TEACHERS

Teachers should know that ordinal numbers (up to twentieth) are used to represent the position of the objects.



**DURATION / NO. OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/ Chalk, Flashcards showing ordinal numbers, Sticker saying 'start point', Textbook



## INTRODUCTION

- Write the name of 10 students and their scores on a test on the board.
- Ask all the students to read the given scores carefully.
- Choose a student randomly and ask, who has the highest score on the given test.
- Take student's response. Write 'first' above the highest score.
- Similarly, ask another student, who scored the highest after the 'first' student.
- Take student's response. Write 'second' above that score.

		First							Second	
Name	Sara	Asif	Farah	Amna	Sana	Yasir	Amir	Hira	Munir	Imran
Score	12	15	3	5	9	8	6	11	13	10

- Repeat the above step for the rest of the numbers to the lowest score.
- Tell students that in today's lesson they will be learning how numbers are used to represent the position of the objects.



## DEVELOPMENT

### Activity 1:

- Distribute twenty flashcards (with ordinal numbers up to twentieth) randomly among students.

- On one end of a wall of the classroom, paste a sticker saying, 'start point'.
- Instruct students to read the number on their respective flashcards and respond when that number is called.
- Call out the ordinal number 'first'. The student, with the flashcard 'first' written on it, should come forward and stand at the start point.

1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>

- Call the ordinal number 'second'. The student, with the flashcard 'second' written on it, should come forward and stand next to the first student.
- Repeat the above step till all students are lined up till the twentieth.,
- Pointing out the first student, start reading aloud the ordinal numbers; ask students to repeat after you till the twentieth.
- Ask a student (other than in the line), name the student who is standing at the fifth position.
- Take student's response.
- Repeat step 8 with few more students. This will help students understand the concept of using numbers for positions.



## CONCLUSION / SUM UP

Tell students that:

- Ordinal numbers are used to represent the position of different objects.
- To write ordinal numbers, we add 'st', 'nd', 'rd', and 'th' with the regular numbers.



## ASSESSMENT

- Draw the given table on the board:
- Call students one by one to write the ordinal number against each number on the board.
- Guide students where necessary.

Number	Ordinal Number	Number	Ordinal Number
1		11	
2		12	
3		13	
4		14	
5		15	
6		16	
7		17	
8		18	
9		19	
10		20	



## HOMEWORK / FOLLOW UP

- Ask students to do exercise 1 given on page 3 of their textbooks.

# ORDINAL NUMBERS



## STUDENT LEARNING OUTCOME

- Write numbers 1 – 100 in words.

## INFORMATION FOR TEACHERS

The teachers should know the numbers in words with correct spellings from 1 to 100.



**DURATION / NO. OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/ Chalk, Duster, Chart with numbers in numeral and words from 1 to 20, Textbook



## INTRODUCTION

1. Paste the chart with numbers in numerals and words from 1 to 20 on the board.
2. Ask all the students to read the numbers in numerals only from 1 to 20.
3. Ask few students to tell their name with spellings to the class as follows:  
S A R A H – Sarah
4. Take students' responses.
5. Tell students that the way we have a name, each number also has a name written in words.
6. Tell students that in today's lesson they will be learning about how to write names of numbers in words in English.

Number Words			
1	one	11	eleven
2	two	12	twelve
3	three	13	thirteen
4	four	14	fourteen
5	five	15	fifteen
6	six	16	sixteen
7	seven	17	seventeen
8	eight	18	eighteen
9	nine	19	nineteen
10	ten	20	twenty



## DEVELOPMENT

### Activity 1

1. Using the chart pasted earlier on the board, read out the spellings of each number in words up to 20. E.g., O N E – One, T W O – Two
2. Ask students to read out after you.

- Repeat steps 1 and 2 thrice. (This will enable students to memorize the spellings of the numbers in words.)
- Write the following matching exercise on the writing board:

Number in Numeral	Number in Word
Ten	3
Seventeen	9
One	15
Three	2
Seven	10
Fifteen	17
Nine	1
Two	5
Twelve	20
Five	7
Twenty	12

- Call students one by one on the board to match each number (in numerals) with its name (in words) and complete the exercise.
- Take students' responses.
- Guide students where required.

## Activity 2

- Draw the following table on the board:

30	Thirty
40	Forty
50	Fifty
60	Sixty
70	Seventy
80	Eighty
90	Ninety
100	Hundred

- Read out the spellings of each number in words given in the above table.
- Ask students to read out after you.
- Repeat steps 2 and 3 twice. (This will enable students to memorize the spellings of the numbers in words.)
- Tell students that the remaining number in words can be made from the words learned so far. E.g.,

$$21 = 20 + 1 = \text{Twenty-one}$$

$$34 = 30 + 4 = \text{Thirty-four}$$

$$45 = 40 + 5 = \text{Forty-five}$$

$$73 = 70 + 3 = \text{Seventy-three}$$



## CONCLUSION / SUM UP

Tell students that:

1. Each number has a name that is written in words.
2. If we learn the number in words from 1 to 20 and in tens (30, 40, ....100), we can make the rest of the number in words ourselves.



## ASSESSMENT

1. Divide students into suitable groups and give five numbers in numerals to each group.
2. Ask each group to write the names of the numbers given to them using the chart and table provided on the board.
3. Visit each group and guide them where necessary.



## HOMEWORK / FOLLOW UP

Ask students to do exercises given on pages 4 to 7 of their textbooks.

## NUMBERS UP TO 1000



## STUDENT LEARNING OUTCOMES

- Read numbers up to 999.
- Write numbers up to 999.

## INFORMATION FOR TEACHERS

The teachers should know how to read and write numbers from 1 to 999.



**DURATION / NO. OF PERIODS: 35 MINUTES / PERIOD 1**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/ Chalk, Duster, Chart showing counting, Charts showing blocks, Textbook.



## INTRODUCTION

1. Draw the following table on the board.

	Hundreds	Tens	Ones
Row 1			4
Row 2		4	4
Row 3	4	4	4

2. Ask students to read the number in row 1.
3. Take students' responses.
4. Ask students to read the number in row 2.
5. Take students' responses. This will help students recall their prior knowledge about 2-digit numbers.
6. Ask students, what is the highest 2-digit number.
7. Take students' responses.
8. Tell students that after 99, the series of 3-digit numbers starts from 100.
9. Tell students that in today's lesson they will be learning about 3-digit numbers starting from 100 and ending at 999.



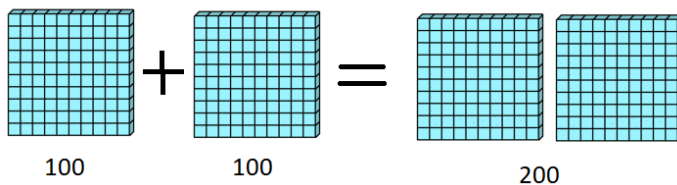
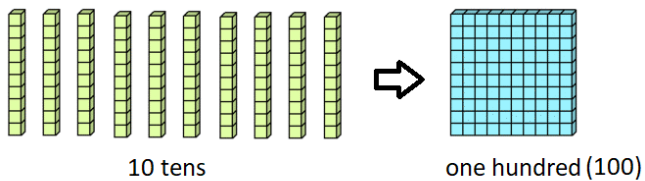
## DEVELOPMENT

### Activity 1:

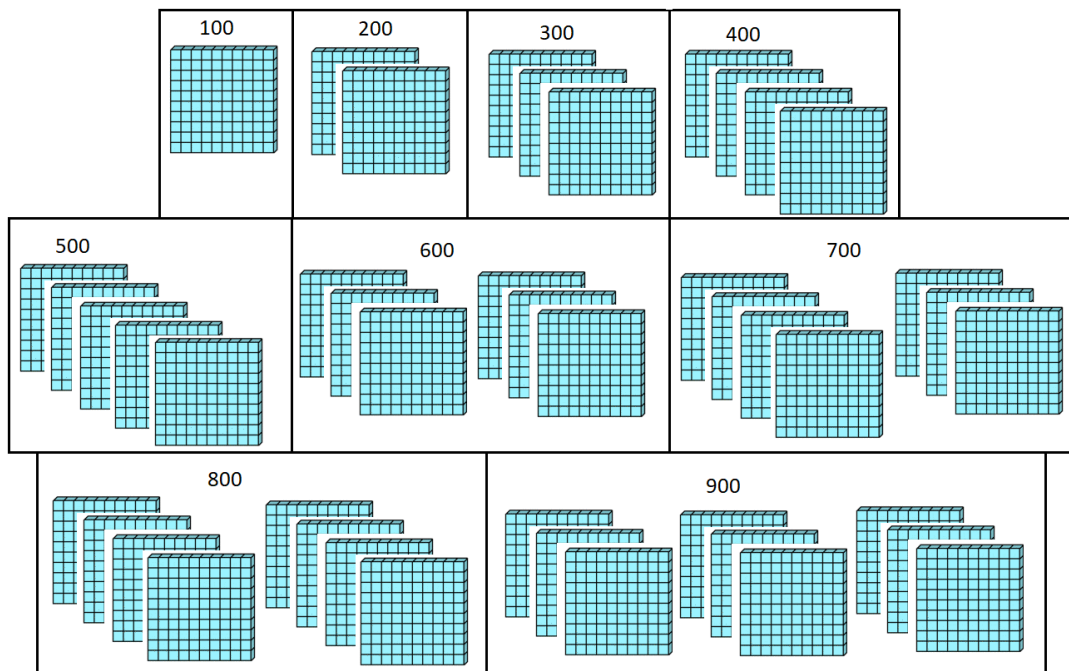
1. Paste the following chart showing counting on the board.

Column 1	Column 2	Column 3
1	10	20
2	11	30
3	12	40
4	13	50
5	14	60
6	15	70
7	16	80
8	17	90
9	18	
	19	

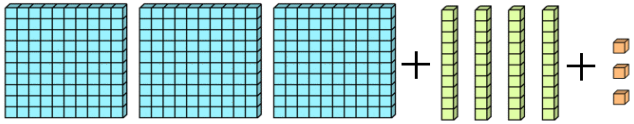
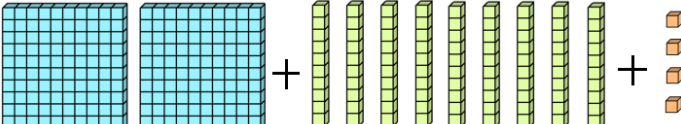
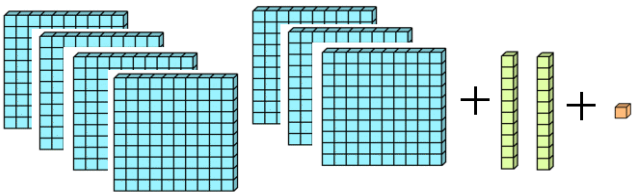
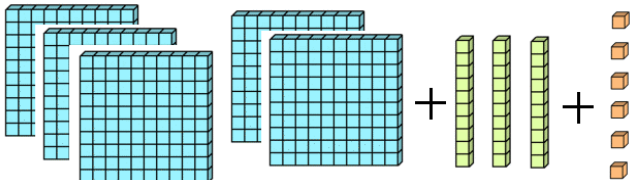
2. Select any three students randomly and ask them to read aloud the numbers in columns 1, 2 and 3 one by one.
3. Ask students to point out the difference between numbers in each column.
4. Take students' responses.
5. Help students reach the answers (such as column 1 shows 1-digit numbers, column 2 shows 2-digit numbers and column 3 shows counting in 10s)
6. Paste the following chart on the board.



7. Explain to students that when we add 10 tens, it makes a 3-digit number, 100 (one hundred).
8. Using the given chart, tell students how to count in 100s.



9. Read the counting aloud in the class and ask all the students to repeat after you.
10. Tell students that they can easily make 3-digit numbers up to 999 using the blocks.
11. Paste the following chart on the board.

	$300 + 40 + 3$	343
		
		
		

12. Explain the first row as follows:
  - i. Three blocks of hundreds make 300, four blocks of tens make 40 and three blocks of ones make 3.
  - ii. Write the three numbers together as,  $300 + 40 + 3$ .
  - iii. Write the 3-digit number as 343.
13. Ask a student to come on the board and do the second question.
14. Check student's work and guide where required.
15. Repeat steps 13 and 14 for the other two questions.



## CONCLUSION / SUM UP

Tell students that:

1. The highest 2-digit number is 99.
2. The series of 3-digit numbers starts from 100 and ends at 999.
3. The place value of each digit is found by its position in a number.

## NUMBERS UP TO 1000



## STUDENT LEARNING OUTCOMES

- Read numbers up to 999.
- Write numbers up to 999.



DURATION / NO. OF PERIODS: 35 MINUTES / PERIOD 2



## MATERIALS / RESOURCES REQUIRED

- Board, Marker, Duster, Chart showing counting, Chart showing tasks for four groups, Textbook



## INTRODUCTION

1. Recap the concept of place value for 3-digit numbers.
2. Write few examples of 3-digit numbers on the board.
3. Tell students that in today's lesson they will be practicing writing 3-digit numbers.



## DEVELOPMENT

## Activity 2:

1. Divide students into four groups.
2. Paste the following chart on the board showing tasks for each group.

<b>Group 1</b> $400 + 20 + 3 = \underline{\hspace{2cm}}$ $300 + 90 + 1 = \underline{\hspace{2cm}}$ $600 + 30 + 7 = \underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$ $800 + 10 + 6 = \underline{\hspace{2cm}}$	<b>Group 2</b> $500 + 10 + 7 = \underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$ $600 + 40 + 2 = \underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$ $700 + 70 + 6 = \underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$ $400 + 40 + 4 = \underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$
<b>Group 3</b> $200 + 10 + 9 = \underline{\hspace{2cm}}$ $400 + 50 + 2 = \underline{\hspace{2cm}}$ $500 + 30 + 3 = \underline{\hspace{2cm}}$ $900 + 20 + 8 = \underline{\hspace{2cm}}$	<b>Group 4</b> $300 + 20 + 6 = \underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$ $100 + 30 + 5 = \underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$

	$700 + 50 + 9 =$ ----- $400 + 10 + 4 =$ -----
--	--

3. Ask students of each group to discuss and write in a notebook the 3-digit numbers assigned to them. Also, paste the below chart on the wall to help students.

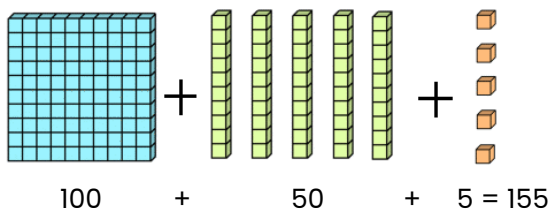
Column 1	Column 2	Column 3	Column 4
1	10	20	100
2	11	30	200
3	12	40	300
4	13	50	400
5	14	60	500
6	15	70	600
7	16	80	700
8	17	90	800
9	18		900
	19		

4. Ask a student from each group to come to the board and fill the blanks for their group.  
 5. Ask other students to see the answers on the board and comment if the answer is right or wrong.  
 6. Take students' responses. Help students arrive at the correct answer.  
 7. Repeat steps 4-6 for other groups.



## CONCLUSION / SUM UP

Tell students that one can easily make 3-digit numbers using the blocks. E.g.,



## ASSESSMENT

1. Write the following 3-digit numbers on the board.  
 135, 253, 472, 584, 862  
 2. Choose any five students randomly and ask them to read aloud one number.  
 3. Write the following 3-digit numbers on the board.

$$200 + 40 + 2 = \text{-----}$$

$$300 + 60 + 5 = \text{-----}$$

$$400 + 70 + 8 = \text{-----}$$

$$500 + 20 + 2 = \text{-----}$$

$$600 + 40 + 9 = \text{-----}$$

4. Choose any five students randomly and ask each of them to write one 3-digit number on the board.



## **HOMEWORK / FOLLOW UP**

Ask students to do exercise 3 given on page 14 and 15 of their textbooks.

# NUMBERS UP TO 1000



## STUDENT LEARNING OUTCOMES

- Recognize the place value of a 3-digit number.
- Identify the place value of a specific digit in a 3-digit number.

## INFORMATION FOR TEACHERS

The teachers should:

1. Be able to differentiate between a digit and a number.
2. Know the place value of digits in 3-digit numbers.



**DURATION / NO. OF PERIODS: 35 MINUTES / PERIOD 1**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/ Chalk, Duster, Three Headbands with 'H', 'T' and 'O' written, Paper chits, Charts showing Hundreds, Tens and Ones, Flashcards, Textbook



## INTRODUCTION

1. Ask students to tell the difference between a digit and a number.
2. Note down students' answers on the board.
3. Tell students that a digit is a single numerical symbol, from 0 to 9 whereas, a number is a string of one or more digits. E.g., 258
4. Tell students that in today's lesson they will be learning how to identify the place value of a specific number in 3-digit numbers.



## DEVELOPMENT

### Activity 1

1. Select any three students of different heights in the class.
2. Provide headbands to the selected students as follows:
  - ✧ Headband with 'H' to the tallest student
  - ✧ Headband with 'T' to the middle one
  - ✧ Headband with 'O' to the shortest student

- Ask the three students to stand in front of the class in a way that the tallest is on the left-hand side, the shortest is on the right-hand side and the third one is in the middle of the tallest and shortest students.
- Ask students to read the alphabets written on the headbands of each of the three students.
- Tell them that 'H' denotes hundreds, 'T' denotes tens, and 'O' denotes ones.
- Provide the following charts to the selected students as per the alphabet on their headbands.

H	T	O
<u>1</u> 00	1 <u>0</u>	0
<u>2</u> 00	2 <u>0</u>	1
<u>3</u> 00	3 <u>0</u>	2
<u>4</u> 00	4 <u>0</u>	3
<u>5</u> 00	5 <u>0</u>	4
<u>6</u> 00	6 <u>0</u>	5
<u>7</u> 00	7 <u>0</u>	6
<u>8</u> 00	8 <u>0</u>	7
<u>9</u> 00	9 <u>0</u>	8
		9

- Give the following prepared chits to the three students (as per the alphabet O, T and H).

**O:** ones and I have only one digit.

**T:** I am tens and I have two digits. Read me from your right-hand side as ones and tens.

**H:** I am hundreds and I have three digits. Read me from your right-hand side as ones, tens and hundreds.

- Each student will read aloud his/her paper to the class.
- Go back to the chart and point out the column of 2-digit numbers.
- Tell that in the first number, there is 0 ones and 1 tens, so it will be read as ten (10). In the second number, there is 0 ones and 2 tens, so it will be read as twenty (20). In the third number, there is 0 ones and 3 tens, so it will be read as thirty (30).
- Ask all the students to read after you the rest of the numbers of column 2.
- Point out the column of 3-digit numbers in the same chart.
- Tell that in the first number, there is 0 ones, 0 tens and 1 hundreds, so it will be read as one hundred (100). In the second number, there is 0 ones, 0 tens and 2 hundreds, so it will be

read as two hundred (200). In the third number, there is 0 ones, 0 tens and 3 hundreds, so it will be read as three hundred (300).

14. Ask all the students to read after you the rest of the numbers of column 3.
15. Repeat steps 12-14. This will help students memorize the 3-digit numbers.

### Activity 2:

1. Write the number 329 on the board.
2. Explain to students that it is a 3-digit number. We will read the place value from right-hand side. In 329, 9 is ones, 2 is tens and 3 is hundreds.

←		
H	T	O
3	2	9

3. Read it as three hundred and twenty-nine.
4. Write the following numbers one by one on the board and ask all the students to read it.  
957, 587, 154, 265, 389
5. Take students' responses.
6. Guide students where required.



### CONCLUSION / SUM UP

Tell students that in 3-digit numbers, every digit has some specific place value i.e., ones, tens, or hundreds.

## NUMBERS UP TO 1000

**DURATION / NO. OF PERIODS: 35 MINUTES / PERIOD 2****MATERIALS / RESOURCES REQUIRED**

- Board, Marker, Duster, Flashcards, Textbook

**INTRODUCTION**

- Recap the concept of place value for 3-digit numbers.
- Write few examples of 3-digit numbers on the board and ask students to identify ones, tens, and hundreds.
- Tell students that in today's lesson they will learn about the place value of a specific digit in a 3-digit number.

**DEVELOPMENT****Activity 3:**

- Distribute the following flashcards among 28 students. (one flashcard for each student)

0	1	2	3	4	5	6	7	8	9
10	20	30	40	50	60	70	80	90	
100	200	300	400	500	600	700	800	900	

- Write a number 764 on the board.
- Ask students with flashcards to look at their numbers carefully and come forward if they think they can make the number 764. This means, students with flashcard 700, 60 and 4 will come forward only to make 764.
- Guide them to line up as H T O.  
Left ----- Right  
700        60        4
- Repeat steps 2-4 using different numbers such as 529, 841, and 652.



## CONCLUSION / SUM UP

1. Tell students that in 3-digit numbers, place values to remember are ones, tens, and hundreds.
2. These place values should be read from the right-hand side of the number.



## ASSESSMENT

1. Write the following 3-digit numbers on the board and ask students to tell the place value of underlined digits.     267     379     425     531     748
2. Note their responses on the board.
3. Guide students where necessary.



## HOMEWORK / FOLLOW UP

1. Draw the following table on the board.
2. Ask students to copy the table in their notebooks and complete it.

Number	Place Value		
	Hundreds	Tens	Ones
531			
612			
742			
925			
511			

## NUMBERS UP TO 1000



## STUDENT LEARNING OUTCOMES

- Compare 2-digit numbers with 3-digit numbers (hundreds, tens, ones).
- Compare 3-digit numbers with 3-digit numbers (hundreds, tens, ones).

## INFORMATION FOR TEACHERS

The teachers should:

1. Be able to differentiate between a digit and a number.
2. Know the difference between 2-digit and 3-digit numbers.
3. Know the place value of 2 and 3-digit numbers.
4. Be able to compare hundreds with hundreds, tens with tens, and ones with ones in two given numbers.



**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD**



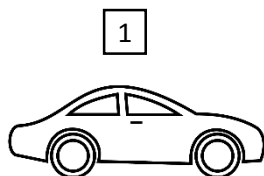
## MATERIALS / RESOURCES REQUIRED

- Board, Marker, Duster, Chart showing pictures of toys, Textbook.

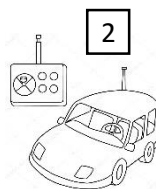


## INTRODUCTION

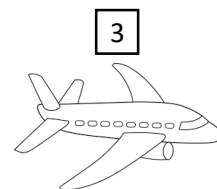
1. Paste the following chart showing pictures of three toys on the board.



10 rupees



100 rupees



200 rupees

2. Ask students which toy is the cheapest.
3. If the students say toy 1, ask them how did they know?
4. Note students' responses and tell them that in today's lesson we will learn about the comparison of numbers.



## DEVELOPMENT

### Activity 1

1. Ask students the following question.  
I have 60 rupees and I want to buy a toy that costs 160 rupees. Do you think I can buy that toy?
2. If the students say NO, ask them why do they think so.
3. Take students' responses.
4. Write the following pairs of 2-digit and 3-digit numbers on the board:  
i. (72 , 345)                      ii. (36 , 629)                      iii. (48 , 715)
5. Ask students to identify the greater number in each pair.
6. Take students' responses and tell them that a 3-digit number is always greater than a 2-digit number.

### Activity 2:

1. Write the following 3-digit numbers on the board.  
$$\begin{array}{r} \text{H T O} \\ \underline{4} 3 1 \\ 2 8 3 \end{array}$$
2. Select a student randomly and ask, which underlined digit, in the hundreds place, is greater.
3. Tell students that since 4 is greater than 2, the number 431 will be greater than 283.
4. Write another pair of 3-digit numbers on the board.  
$$\begin{array}{r} \text{H T O} \\ \underline{8} 9 2 \\ \underline{8} 7 4 \end{array}$$
5. Select a student randomly and ask, which underlined digit, in the hundreds place, is greater.
6. Take the student's response.
7. Tell students that when the digit in hundreds place is the same, look up for the next number i.e., tens.
8. Rewrite the above pair of 3-digit numbers as follows.  
$$\begin{array}{r} \text{H T O} \\ 8 \underline{9} 2 \\ 8 \underline{7} 4 \end{array}$$
9. Select a student randomly and ask, which underlined digit, in the tens place, is greater.
10. Take the student's response.
11. Tell students that since 9 is greater than 7, the number 892 will be greater than 874.
12. Write a set of 3-digit numbers on the board.  
$$\begin{array}{r} \text{H T O} \\ 7 6 2 \\ 7 6 5 \\ 7 6 1 \end{array}$$

13. Select a student randomly and ask, which number is the greatest.
14. Take the student's response.
15. Tell students that when the digit in hundreds place is the same, look up for the next digit i.e., tens. If the digit in tens place is also the same, look up for the digit in the ones place.
16. Ask students which digit in ones place is the greatest.
17. Take students' responses.
18. Tell students that since 5 is greater than 2 and 1, the number 765 is the greatest..



## CONCLUSION / SUM UP

Tell students that:

1. A 3-digit number is always greater than a 2-digit number.
2. When comparing two 3-digit numbers, the place value of the digits plays a very important role.
3. Compare hundreds with hundreds, tens with tens, and ones with ones to find out which number is greater than the other.



## ASSESSMENT

1. Copy the following pairs of numbers on the board.

521	52
892	792
358	384
90	700
243	247
659	648

2. Ask students to identify the greater number in each pair and write it down in their notebooks.



## HOMEWORK / FOLLOW UP

Ask students to do exercise 4 given on page 21 of the mathematics textbook.

## NUMBERS UP TO 100



## STUDENT LEARNING OUTCOME

- Count backward ten steps down from any given number.

## INFORMATION FOR TEACHERS

- The teachers should know the ascending and descending order of numbers.



DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD



## MATERIALS / RESOURCES REQUIRED

- Board, Marker, Duster, Chart showing a ladder with numbers, Textbook



## INTRODUCTION

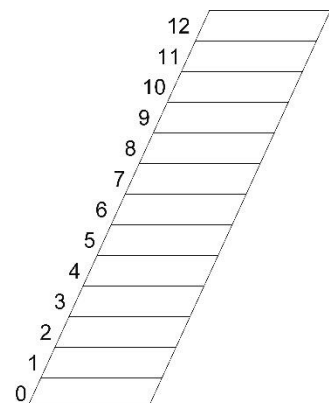
- Select few students randomly and ask them to count from 1 to 100. (One student should count from 1-20, other from 21-40 and so on)
- Explain to the students that we can count from 1 to 100 easily because we know that every following number is 1 greater than every previous number. This is called increasing order of numbers. For example, 1, 2, 3.
- Tell students that in today's lesson they will learn to count backward which means decreasing order of numbers. This means every following number is 1 less than every previous number. For example, 9, 8, 7.



## DEVELOPMENT

## Activity 1:

- Paste the given chart showing counting from 0-12 on the board.
- Tell students to suppose that this is a ladder.
- Ask students if you are on number 12 and want to come down to 0, what will you do.
- Take students' responses.
- Ask students to read the numbers down the ladder at least three times to practice backward counting.



### Activity 2:

1. Select six students randomly and assign number range to them as follows:  
*Student 1 - From 100 to 91 as 99, 98, 97, 96, 95, 94, 93, 92, 91*  
*Student 2 - From 90 to 81*  
*Student 3 - From 80 to 71*  
*Student 4 - From 70 to 51*  
*Student 5 - From 50 to 31*  
*Student 6 - From 30 to 1*
2. Tell students that keeping in mind backward counting from 9 to 1, you can count backward the rest of the numbers easily.
3. Ask student 1 to start backward counting followed by student 2, 3, 4, 5, and 6.
4. Guide students during the activity where necessary.



### CONCLUSION / SUM UP

Tell students that in backward counting, numbers are arranged from greater to smaller. This is called decreasing order of numbers.



### ASSESSMENT

1. Write the following numbers on the board.
  - i. 115, 114, 113, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
  - ii. 26, 25, 24, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
  - iii. 65, 64, 63, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
  - iv. 180, 179, 178, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
  - v. 95, 94, 93, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
2. Ask students to copy the above in their notebooks and fill in the missing numbers.
3. Guide students where required.



### HOMEWORK / FOLLOW UP

Ask students to do exercise 6 given on page 22 of the mathematics textbook.

**Month**

**2**

# NUMBERS UP TO 1000



## STUDENT LEARNING OUTCOMES

1. Arrange numbers up to 999, written in mixed form in increasing or decreasing order.
2. Identify the smallest/greatest number in a given set of numbers.

## INFORMATION FOR TEACHERS

The teachers should be able to:

1. Arrange numbers in Increasing and decreasing order.
2. Find the smallest and the greatest numbers in the given sequence.



**DURATION / NO OF PERIODS: 35 MINUTES / PERIOD 1**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker, Duster, Chart showing ascending and descending order, Textbook, Flashcards showing numbers 1-10



## INTRODUCTION

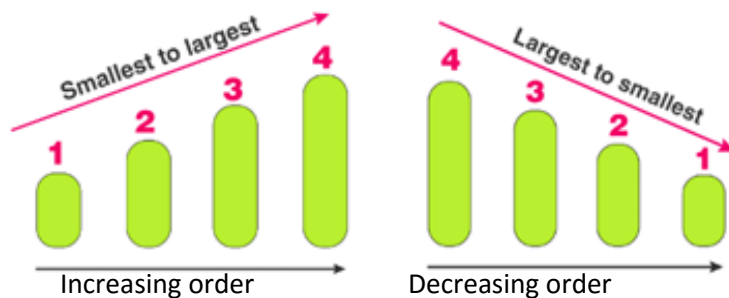
1. Make flashcards showing numbers 1-10 and give them to any 10 students.
2. Call out the students (with flashcards 1-10) randomly.
3. Make them stand in a group and call them Group 1.
4. Make flashcards showing numbers 11-20 and give them to any other 10 students.
5. Call out the students (with flashcards 11-20) randomly.
6. Make them stand in a group and call them Group 2.
7. Ask students of Group 1 to arrange themselves in increasing order i.e., from 1 to 10.
8. Ask students of Group 2 to arrange themselves in decreasing order i.e., from 20 to 11.
9. Call out the numbers of both groups one by one in the order arranged.
10. Tell students that in today's lesson they will learn about arranging numbers in increasing and decreasing order.



## DEVELOPMENT

### Activity 1:

1. Paste the following chart on the board.



2. Divide the class into four groups.
3. Assign each group a set of numbers written on the flashcards as follows.  
*Group 1: 850, 115, 751, 345, 192, 469, 260, 546, 975, 683*  
*Group 2: 149, 465, 750, 252, 864, 357, 488, 597, 980, 630*  
*Group 3: 249, 485, 379, 155, 633, 394, 825, 566, 940, 783*  
*Group 4: 543, 255, 163, 387, 688, 465, 965, 730, 184, 825*
4. Ask groups 1 and 2 to arrange the given set of numbers in increasing order.
5. Ask groups 3 and 4 to arrange the given set of numbers in decreasing order.  
Students may take help from the chart placed on the board to recall the meaning of increasing and decreasing order.
6. Ask each group to tell the sequence in which they have arranged their numbers.
7. Write the answers from each group on the board.
8. Ask anyone student from each group to encircle the smallest and the greatest number in their respective set of numbers.
9. Check students' responses.
10. Guide students where necessary.



## CONCLUSION / SUM UP

Tell students that increasing order means arranging numbers from smallest to greatest whereas, decreasing order means arranging numbers from greatest to smallest.



## ASSESSMENT

Write the following set of numbers on the board and ask students to arrange them in decreasing order in their notebooks.

- i. 450, 742, 90, 341, 657
- ii. 50, 913, 530, 825, 131



## HOMEWORK / FOLLOW UP

Ask students to do exercise 5 given on page 22 of the mathematics textbook.

## NUMBERS UP TO 1000



## STUDENT LEARNING OUTCOMES

1. Count and write in 10s (e.g., 10, 20, 30, .....)
2. Count and write in 100s (e.g., 100, 200, 300, .....)

## INFORMATION FOR TEACHERS

The teachers should know multiples of 10s and 100s.



**DURATION / NO. OF PERIODS: 35 MINUTES / PERIOD 2**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker, Duster, 2 ten-rupee notes, 10 bundles of 10 toothpicks, Textbook.



## INTRODUCTION

1. Draw the following table on the board.

--	--	--	--	--

2. Show students a 10-rupee note and ask how much money it is.
3. Take students' responses and write them in the table.
4. Take out another 10-rupee note and ask how much total money is it now.
5. Take students' responses and write them in the table.
6. Ask students how much money it would be if we have five 10-rupee notes.
7. Take students' responses and write them in the table.

10	20			50
----	----	--	--	----

8. Ask students to guess the missing numbers in the table.
9. Take students' responses and write them in the table.
10. Guide students where necessary.
11. Tell students that in today's lesson they will learn counting in 10s and 100s.



## DEVELOPMENT

### Activity 2:

1. Select any ten students of the class to make a group.
2. Ask them to stand in front of the class.
3. Give a bundle of ten toothpicks to each of the students in the group.
4. Number the students as 1, 2, 3 to 10.
5. Ask student 1 to count the number of toothpicks in his/her bundle and pass it on to student 2 in the group. (Student 1 will count 10 toothpicks)
6. Ask student 2 to continue the sequence while counting the number of toothpicks in his/her bundle. (Student 2 will show the first bundle of toothpicks and say 10 and then start from 11 when counting his/her toothpicks till 20)
7. Write  $10 + 10 = 20$  on the board.
8. Ask student 2 to pass on the two bundles of toothpicks to student 3.
9. Ask student 3 to continue the sequence while counting the number of toothpicks in his/her bundle. (Student 3 will show the two bundles of toothpicks and say 20 and then start from 21 when counting his/her toothpicks till 30)
10. Write  $20 + 10 = 30$  on the board.
11. Carry on the activity till all bundles of toothpicks are passed on to student 10. (Student 10 will count till 100)  
 $30 + 10 = 40$   
 $40 + 10 = 50$   
 $50 + 10 = 60$   
 $60 + 10 = 70$   
 $70 + 10 = 80$   
 $80 + 10 = 90$   
 $90 + 10 = 100$
12. Tell students that each bundle represents 10. Adding one bundle of toothpicks to the other bundle makes it 20 ( $10 + 10 = 20$ ). Similarly, adding another bundle of ten toothpicks to 20 will make it 30 ( $20 + 10 = 30$ ).

### Activity 3:

1. Tell students that counting in 100s follows the same pattern.
2. Write the following on the board to start counting in 100s.  
 $100 + 100 = 200$   
 $200 + 100 = 300$
3. Tell students that by adding the digits at hundreds, they can easily get the answer.

( $1 + 1 = 2$  so 200 and  $2 + 1 = 3$  so 300)

4. With the help of students, write down the remaining counting in 100s on the board.

$$300 + 100 = 400$$

$$400 + 100 = 500$$

$$500 + 100 = 600$$

$$600 + 100 = 700$$

$$700 + 100 = 800$$

$$800 + 100 = 900$$



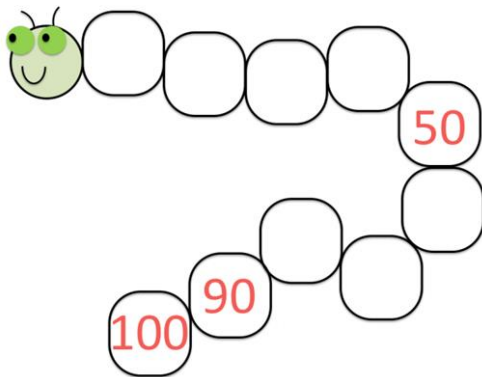
## CONCLUSION / SUM UP

Tell students that we can write the numbers in 10s by adding 10s to the preceding number and the number in 100s by adding 100 to the preceding number.



## ASSESSMENT

1. Draw the following on the board.



2. Ask students to fill in the missing numbers in 10s.  
3. Take students' responses.  
4. Guide students where required.  
5. Write the following on the board and ask students to fill in the missing numbers in 100s.

200		400			700		
-----	--	-----	--	--	-----	--	--



## HOMEWORK / FOLLOW UP

1. Do questions 1 and 2 on pages 23 and 24 of the mathematics textbook.  
2. Do questions 6 and 7 on page 28 of the mathematics textbook.

## NUMBERS UP TO 1000



## STUDENT LEARNING OUTCOME

- Recognize that 1000 is one more than 999 and the first 4-digit number.

## INFORMATION FOR TEACHERS

The teachers should know that:

- 100 is the smallest and 999 is the greatest 3-digit number.
- 1000 is the smallest 4-digit number.



**DURATION / NO. OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker, Duster, Textbook



## INTRODUCTION

Ask students the following questions.

“What number comes after 9?”

- Take students’ responses and write the correct answer on the board.

“What number comes after 99?”

- Take students’ responses and write the correct answer on the board.
- Tell students that in today’s session they will learn what number comes after 999.



## DEVELOPMENT

## Activity 1:

- Write the following questions on the board and ask students to answer:

$$7 + 1 = \underline{\hspace{2cm}}$$

$$8 + 1 = \underline{\hspace{2cm}}$$

$$9 + 1 = \underline{\hspace{2cm}}$$

- Tell students that 10 is the smallest 2-digit number (one more than 9).
- Write the following questions on the board and ask students to answer.

$$96 + 1 = \underline{\hspace{2cm}}$$

$$97 + 1 = \text{-----}$$

$$98 + 1 = \text{-----}$$

$$99 + 1 = \text{-----}$$

4. Tell students that 100 is the smallest 3-digit number (one more than 99).

5. Write the following questions on the board and ask students to answer.

$$996 + 1 = \text{-----}$$

$$997 + 1 = \text{-----}$$

$$998 + 1 = \text{-----}$$

$$999 + 1 = \text{-----}$$

6. Tell students that like 10 and 100, the number 1000 is the smallest 4-digit number (1 more than 999).

7. Draw the following table on the board and ask students to place 1000 in it.

Thousands	Hundreds	Tens	Ones

8. Guide students to start reading the place values from right-hand side.

9. Take their responses.

10. Guide where required.



## CONCLUSION / SUM UP

Tell students that:

1. The smallest 2-digit number is 10.
2. The smallest 3-digit number is 100.
3. The smallest 4-digit number is 1000.



## ASSESSMENT

1. Write the following questions on the board and ask students to answer.

$$10 - 1 = \text{-----}$$

$$100 - 1 = \text{-----}$$

$$1000 - 1 = \text{-----}$$

2. Record students' responses on the board.

3. Tell students that 10 is a 2-digit number. If we subtract 1 from it, it becomes 9 which is a 1-digit number. Similarly, 100 is a 3-digit number. If we subtract 1 from it, it becomes 99 which is a 2-digit number.

4. Ask anyone student to describe  $1000 - 1$  in the same way.

5. Take his/her response and guide if required.



## HOMEWORK / FOLLOW UP

Copy down the following questions and answer them in your notebooks.

- i. What is the greatest 2-digit number?
- ii. What is the smallest 3-digit number?

# ADDITION OF 2-DIGIT NUMBERS (WITH CARRYING)



## STUDENT LEARNING OUTCOMES

- Add ones and ones.
- Add ones and 2-digit numbers with carrying.

## INFORMATION FOR TEACHERS

The teachers should be able to:

1. Add ones with ones and ones with 2-digit numbers.
2. Carry in addition.



**DURATION / NO. OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, 8 Toffees, Chart showing a boy and a girl with sticks, Textbook



## INTRODUCTION

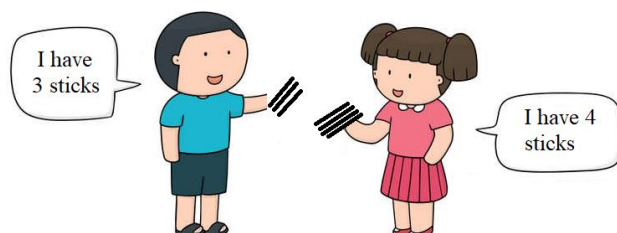
1. Select two students randomly and ask them to stand in front of the class.
2. Give 3 toffees to one student and 5 toffees to the other student.
3. Ask the class to count the total number of toffees both the students have.
4. Take students' responses.
5. Tell students that in today's lesson they will be doing the addition of 1-digit and 2-digit numbers with carrying.



## DEVELOPMENT

### Activity 1:

1. Paste the following chart on the wall.



2. Ask students to tell the total number of sticks both children have.

- Take students' responses.
- Tell students that we will find out how many sticks both children have altogether.
- Draw the following table on the board:

Tens	Ones	
	3	
	4	
	7	

- Tell students that 1-digit numbers are written in the column labelled as 'ones'.
- Tell students that the lines 'I' in the table represent the number of sticks. The boy has 3 sticks whereas, the girl has 4 sticks.
- Draw 3 sticks and 4 sticks together in the last box. Count the total number of sticks and write the answer.

### Activity 2:

- Draw 14 stars and 8 matchsticks on the board.



- Ask students to count and tell the number of stars and matchsticks.
- Take students' responses and tell them that we will add 14 and 8 to find out the total number of objects.
- Explain to students that in the case of 2-digit number (14) '4' will be written in the column labelled as 'ones' whereas, '1' will be written in the column labelled as 'tens'.
- The 1-digit number (8) will be written in the column labelled as 'ones'.
- First add ones with ones i.e., 4 and 8. The answer will be a 2-digit number i.e., 12.
- Tell the students that when the sum of ones is more than 9 after adding, then 10 ones make 1 ten. In this case, 12 is 1 tens and 2 ones. Carry 1 ten to the tens place as shown below:

		Tens	Ones
Stars	=	1 <sup>(1)</sup>	4
Matchsticks	=	0	8
Total	=	2	2

- Add the tens to get the answer.



## CONCLUSION / SUM UP

Tell students that:

1. Ones are added with ones.
2. Tens are added with tens.
3. When the sum of ones is more than 9 after adding, then 10 ones make 1 ten.



## ASSESSMENT

1. Ask students to fill in the given blanks.

$$7 + 2 = \text{-----}$$

$$3 + 3 = \text{-----}$$

$$6 + 7 = \text{-----}$$

2. Take students' responses.
3. Guide where necessary.
4. Write the following question on the board and ask students to solve it in their notebooks.

T	O
---	---

$$4 \quad 8$$

$$+ \quad 6$$

-----

-----

5. Take students' responses.
6. Guide where necessary.



## HOMEWORK / FOLLOW UP

Do the first seven questions of exercise 1 on page 32 of the mathematics textbook.

**LESSON****13****UNIT 2: NUMBER OPERATIONS****ADDITION OF 2-DIGIT NUMBERS (WITH CARRYING)****STUDENT LEARNING OUTCOMES**

1. Add 2-digit numbers and 2-digit numbers with carrying.
2. Solve real-life number stories, involving the addition of 2-digit numbers with carrying.

**INFORMATION FOR TEACHERS**

The teachers should know how to:

1. Add two 2-digit numbers with carrying.
2. Solve real-life number stories, involving the addition of 2-digit numbers with carrying

**DURATION / NO. OF PERIODS: 35 MINUTES / 1 PERIOD****MATERIALS / RESOURCES REQUIRED**

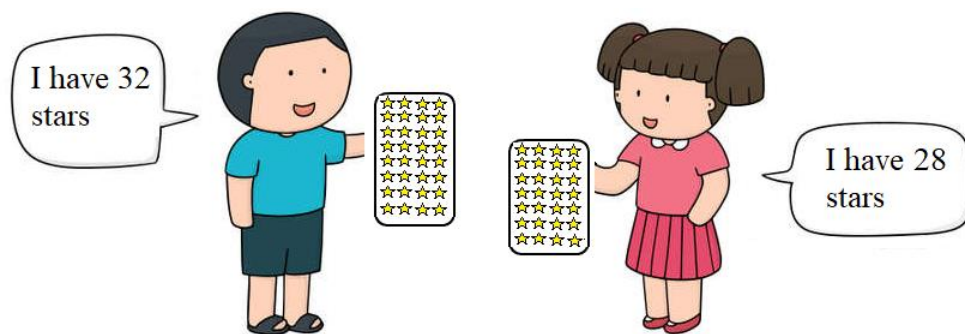
- Board, Marker/Chalk, Duster, Chart showing a boy and girl with stars, Money (25 & 45 rupees), Textbook

**INTRODUCTION**

1. Tell students to suppose that there are 25 students present in class 1 and 15 students present in class 2 today. If we want to know how many students are present in classes 1 and 2 altogether, what can we do?
2. Take students' responses.
3. Ask students to focus on the numbers i.e., 25 and 15.
4. Tell students that both are 2-digit numbers and in today's session they will learn the addition of 2-digit numbers with carrying.

**DEVELOPMENT****Activity 1:**

1. Paste the following chart on the wall.



- Tell students that we will find out how many stars both children have altogether.
- Draw the following table on the board.

	Tens	Ones
	3	2
+	2	8

- Tell students that we will add 32 and 28 to find out the total number of stars.
- Explain to students that in the case of 2-digit number (32) '2' will be written in the column labelled as 'ones' whereas, '3' will be written in the column labelled as 'tens'.
- Following the above rule, write 28 in the box.
- First add ones with ones i.e., 2 and 8. The answer will be a 2-digit number i.e., 10.
- Tell the students that when the sum of ones is more than 9 after adding, then 10 ones make 1 ten and 0 ones. Carry 1 ten to the tens place as shown below.

	Tens	Ones
Boy has 32 stars	= 3 <sup>(1)</sup>	2
Girl has 28 stars	= 2	8
Total stars	= 6	0

- Add the tens to get the answer.

### Activity 2:

- Tell students that we can use 2-digit addition in our daily life.
- Select randomly two students and ask them to stand in front of the class.
- Give 25 rupees to one student and 45 rupees to the other student.
- Ask the class, how much money both the students have altogether.
- Take students' responses.
- Ask anyone student to come and write both numbers (25 and 45) on the board vertically for addition.
- Ask another student to come and add both numbers to find out the total money.
- Take the student's response.
- Guide students where required.



## CONCLUSION / SUM UP

Tell students that:

1. Ones are added with ones.
2. Tens are added with tens.
3. When the sum of ones is more than 9 after adding, then 10 ones make 1 ten.  
We can use 2-digit addition in real-life situations.



## ASSESSMENT

1. Write the following question on the board and ask students to answer it in their notebooks.  
Ali bought mangoes of Rs. 35 and apples of Rs. 25. How much amount did he spend altogether?
2. Observe students and guide them where needed.



## HOMEWORK / FOLLOW UP

Do the last five questions of exercise 1 on page 32 of the mathematics Textbook.

# ADDITION OF 2-DIGIT NUMBERS (WITH CARRYING)



## STUDENT LEARNING OUTCOME

- Add numbers up to 50 using mental calculations.

## INFORMATION FOR TEACHERS

The teachers should know:

1. Place value of 2-digit numbers.
2. Mental strategy for the addition of numbers.



**DURATION / NO. OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Textbook



## INTRODUCTION

1. Write the numbers 2 and 6 on the writing board.
2. Ask students how can we add these two numbers without doing the calculation in the notebooks.
3. Take students' responses.
4. Tell students that these are 1-digit numbers so can be added easily without the calculation. In today's session, they will learn the addition of 2-digit numbers using a mental strategy.



## DEVELOPMENT

### Activity 1:

1. Write the numbers 25 and 20 on the board.
2. Ask students to break the given numbers into tens and ones.
3. Draw the following diagram on the board to help students understand the idea.



Tens		Ones			Tens		Ones		
20 + 20	+	5 + 0	=		40	+	5	=	45

4. Add tens with tens ( $20 + 20$ ) and ones with ones ( $5 + 0$ ) to get the answer.

### Activity 2:

1. Divide the class into four groups.
2. Write the following questions on the board.

Group 1	Group 2	Group 3	Group 4
$20 + 24$	$10 + 17$	$30 + 14$	$20 + 27$

3. Assign one question to each group.
4. Ask each group to answer the assigned question using a mental calculation strategy.
5. Take students' responses.
6. Guide students where required.



### CONCLUSION / SUM UP

Tell students that:

1. We can do 2-digit addition using a mental calculation strategy.
2. Break the 2-digit number into tens and ones.
3. Add tens with tens and ones with ones.
4. Add tens and ones to get the answer.



### ASSESSMENT

1. Write the following questions on the board.
 

$18 + 10 = \text{-----}$   
 $15 + 20 = \text{-----}$
2. Ask students to answer the given questions using mental calculation strategies and write answers in their notebooks.

3. Take students' responses.
4. Guide students where required.



## **HOMEWORK / FOLLOW UP**

Do questions (a) to (k) given on pages 34 and 35 of the mathematics textbook.

**Month**

**3**

# ADDITION OF 3-DIGIT NUMBERS (WITHOUT CARRYING)



## STUDENT LEARNING OUTCOMES

1. Add 3-digit numbers and ones without carrying.
2. Add 3-digit numbers and 2-digit numbers without carrying.
3. Add 3-digit numbers and 3-digit numbers without carrying.

## INFORMATION FOR TEACHERS

The teachers should be able to:

1. Identify place value till hundred.
2. Add 3-digit numbers without carrying.



**DURATION / NO. OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Textbook



## INTRODUCTION

1. Ask students, what is the smallest 3-digit number.
2. Take students' responses and write 100 on the board.
3. Ask students to give some examples of 2-digit numbers.
4. Take students' responses and write some of them (11, 21, 32) on the board.
5. Ask students to give examples of 1-digit numbers.
6. Take students' responses and write 1-9 on the board.
7. Tell students that in today's session they will learn to add 3-digit numbers to 1-digit and 2-digit numbers.

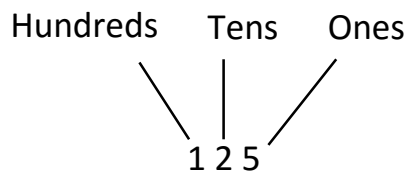


## DEVELOPMENT

### Activity 1:

1. Write the following question on the board:  
 $125 + 4$

- Tell students that 125 is a 3-digit number and 4 is a 1-digit number.
- Show the place value of each digit in the given number (125) as follows:



- Draw the following table on the board:

	Hundreds	Tens	Ones
+			

- Ask a student to write 125 and 4 in the box for addition.

	Hundreds	Tens	Ones
	1	2	5
+			4

- Ask the other students to note that 5 is written in the column of 'ones', 2 in the column of 'tens', and 1 in the column of 'hundreds'.
- Tell students that we will add ones with ones only as 4 is a 1-digit number.
- Call a student and ask him/her to answer the question on the board.
- Guide the student where necessary.

### Activity 2:

- Divide the class into 6 groups.
- Assign each group an addition question as follows:

<b>Group 1</b> $\begin{array}{r} \overline{524} \\ + \underline{23} \end{array}$	<b>Group 2</b> $\begin{array}{r} \overline{422} \\ + \underline{52} \end{array}$	<b>Group 3</b> $\begin{array}{r} \overline{725} \\ + \underline{23} \end{array}$
<b>Group 4</b> $\begin{array}{r} \overline{655} \\ + \underline{334} \end{array}$	<b>Group 5</b> $\begin{array}{r} \overline{324} \\ + \underline{243} \end{array}$	<b>Group 6</b> $\begin{array}{r} \overline{449} \\ + \underline{430} \end{array}$

- Ask each group to discuss and answer the question in a notebook.

4. Instruct students to write H, T, and O in the space provided above the 3-digit number.
5. Tell students to start addition from the ones and move to tens and hundreds.
6. Tell students to follow the rules of addition, add ones with ones, tens with tens, and hundreds with hundreds to get the answer.
7. Ask one student from each group to write their answer on the board.
8. Check students' answers and guide where required.



## CONCLUSION / SUM UP

Tell students that:

1. In 3-digit numbers, the place value of the digits is H, T, and O.
2. Place 1-digit number under the 'ones' of 3-digit number.
3. Add ones with ones, tens with tens, and hundreds with hundreds.



## ASSESSMENT

1. Write the following questions on the board.
2. Ask students to copy the questions in their notebooks and answer them.

144	155	163
+ 5	+ 22	+ 133
_____	_____	_____

3. Check students' work.
4. Guide students where required.



## HOMEWORK / FOLLOW UP

- Do question 1 of exercise 2 on pages 37 and 38 of their textbook.

**LESSON****16****UNIT 2: number operations****ADDITION OF 3-DIGIT NUMBERS  
(WITHOUT CARRYING)****STUDENT LEARNING OUTCOME**

- Solve real-life numbers stories involving the addition of 3-digit numbers without carrying.

**INFORMATION FOR TEACHERS**

The teachers should know how to:

1. Solve real-life number stories, involving the addition of 3-digit numbers without carrying.

**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD****MATERIALS / RESOURCES REQUIRED**

- Board, Marker/Chalk, Duster, Textbook

**INTRODUCTION**

1. Ask students to suppose that there are 150 girls and 120 boys in your school.
2. Ask students, how do we know how many students are there in the school altogether.
3. Take student's responses.
4. Tell students that we can use 3-digit addition in our daily life situations, and in today's lesson we will solve some real-life numbers stories involving the addition of 3-digit numbers.

**DEVELOPMENT****Activity 1:**

1. Write the following question on the board and ask students to copy it in their notebooks.  
*Sara and Jameel went to the market for shopping. Sara bought a cake for Rs. 550 for her mother and Jameel bought a shirt for Rs. 240 for his father. Find the total amount of money they spent altogether?*
2. Read the question aloud.

3. Ask a volunteer to explain the question to the class.
4. Clarify the question where required.
5. Select student randomly and ask him/her to write the values of the given question in vertical form for addition.
6. Ask students to answer the question following the rules of the 3-digit addition learned in the previous class.
7. Check students' work and guide where necessary.

### Activity 2:

1. Divide students into 3 groups.
2. Ask each group to think of some everyday examples where 3-digit addition is used at their homes and make a list. (Expected responses: Calculating money for shopping, runs in a cricket match, counting marks in a report card, etc.)
3. Give them appropriate time for brainstorming and discussion.
4. Divide the board into three columns and label them as 'Group 1', 'Group 2' and 'Group 3'.
5. Take students' responses group-wise and write in their respective columns.
6. Guide students where necessary.



### CONCLUSION / SUM UP

Tell students that:

1. We can use 3-digit addition to solve real-life situations.
2. Ones are added with ones, tens with tens, and hundreds with hundreds.



### ASSESSMENT

1. Write the following question on the board.  
*In a basket, there are 111 red balls and 110 green balls. Find out the total number of balls in the basket.*
2. Ask students to answer the given question in their notebooks.
3. Check students' responses.
4. Guide students' where necessary.



### HOMEWORK / FOLLOW UP

Do question 2 of exercise 2 on page 38 of the textbook.

**LESSON****17****UNIT 2: NUMBER OPERATIONS****ADDITION OF 3-DIGIT  
NUMBERS (WITH CARRYING)****STUDENT LEARNING OUTCOMES**

1. Add 3-digit number and 1-digit number with carrying of tens and hundreds.
2. Add 3-digit number and 2-digit number with carrying of tens and hundreds.
3. Add 3-digit number and 3-digit number with carrying of tens and hundreds.

**INFORMATION FOR TEACHERS**

The teachers should know the process of addition with carrying of tens and hundreds.

**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD****MATERIALS / RESOURCES REQUIRED**

- Board, Marker/Chalk, Duster, Textbook

**INTRODUCTION**

1. Ask students what is the greatest 2-digit number.
2. Take their responses and write 99 on the board.
3. Ask students what is the greatest 3-digit number.
4. Take their responses and write 999 on the board.
5. Ask them what do we get when we add 9 and 9.
6. Take their responses and write 18 on the board.
7. Show students addition of two 1-digit numbers with carrying resulting in a 2-digit number.
8. Tell students that in today's session they will learn how to add 1-digit and 2-digit numbers to 3-digit numbers with carrying.

**DEVELOPMENT****Activity 1:**

1. Divide the board into three columns.

2. Label the columns as '1-digit', '2-digit' and '3-digit'.
3. Write one question in each column as follows.

1-digit	2-digit	3-digit
$\begin{array}{r} \text{H T O} \\ 165 \\ + \quad 8 \\ \hline \end{array}$	$\begin{array}{r} \text{H T O} \\ 523 \\ + \quad 87 \\ \hline \end{array}$	$\begin{array}{r} \text{H T O} \\ 239 \\ + 496 \\ \hline \end{array}$

4. Answer the first question (1-digit) with students.
5. Draw their attention towards the placement of digits i.e., 'ones' is placed under 'ones'.
6. Randomly select a student and ask him/her to add 5 and 8.
7. Take student's response and tell him/her that the answer is a 2-digit number i.e., 13. Write 3 at ones place. Carry 1 ten to the tens place (write small 1 above 6).
8. Again, randomly select a student to add 6 and 1.
9. Take the student's response and write 7 at the 'tens' place.
10. Ask the whole class what to do with the last digit '1'.
11. Take students' responses and tell them that there is no digit under 1 so it means there is  $1 + 0 = 1$
12. Write down 1 at the 'hundreds' place.
13. Answer the second question (2-digit) with students.
14. Draw their attention towards the placement of digits i.e., 'ones' is placed under 'ones' and 'tens' is placed under 'tens'.
15. Randomly select a student and ask to add 3 and 7.
16. Take student's response and write 0 at ones place. Carry 1 ten to the tens place (write small 1 above 2).
17. Again, randomly select a student to add 8 and 2 and then add small 1 (carry).
18. Take student's response and write 1 at the 'tens' place. Carry 1 hundred to the hundreds place (write small 1 above 5).
19. Select a student and ask what to do with the last digit '5' and small 1 (carry).
20. Take his/her response and write 6 at the 'hundreds' place.
21. Answer the third question (3-digit) with students.
22. Draw their attention towards the placement of digits i.e., 'ones' is placed under 'ones', 'tens' is placed under 'tens' and 'hundreds' is placed under 'hundreds'.
23. Randomly select a student and ask to add 9 and 6.
24. Take student's response and write 5 at ones place. Carry 1 ten to the tens place (write small 1 above 3).

25. Again, randomly select a student to add 3 and 9 and then add small 1 (carry).
26. Take student's response and write 3 at the 'tens' place. Carry 1 hundred to the hundreds place (write small 1 above 2).
27. Ask another student to add 2 and 4 and then add small 1 (carry).
28. Take his/her response and write 7 at the 'hundreds' place.



## CONCLUSION / SUM UP

Tell students that:

1. Ones are added with ones, tens are added with tens, and hundreds are added with hundreds.
2. When the sum of ones is more than 9 after adding, then 10 ones make 1 ten. Carry 1 ten to the tens place.
3. When the sum of tens is more than 9 after adding, then 10 tens make 1 hundred. Carry 1 hundred to the hundreds place.



## ASSESSMENT

1. Write the following questions on the board.
2. Ask students to copy and answer the questions in their notebooks.

$$\begin{array}{r} 222 \\ + 8 \\ \hline \end{array}$$

$$\begin{array}{r} 345 \\ + 55 \\ \hline \end{array}$$

$$\begin{array}{r} 546 \\ + 366 \\ \hline \end{array}$$

3. Check students' work.
4. Guide students where required.



## HOMEWORK / FOLLOW UP

Do question 1 of exercise 3 given on pages 41 and 42 of their textbook.

# ADDITION OF 3-DIGIT NUMBERS (WITH CARRYING)



## STUDENT LEARNING OUTCOME

- Solve real-life number stories involving the addition of 3-digit numbers with carrying of tens and hundreds.

## INFORMATION FOR TEACHERS

The teachers should be able to:

- Add two 3-digit numbers with carrying.
- Solve real-life number stories, involving the addition of 3-digit numbers with carrying.



**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Textbook



## INTRODUCTION

- Call a volunteer to stand in front of the class.
- First, give him/her 145 rupees and then 165 rupees.
- Ask students how can they find the amount of money given to him/her altogether.
- Take students' responses.
- Tell students that in today's session they will learn how to use 3-digit addition with carrying in real-life situations.



## DEVELOPMENT

### Activity 1:

- Write the following question on the board.  
*Sana and Asif went to the market for shopping. Sana bought a wristwatch for Rs. 655 for her mother and Asif bought sunglasses for Rs. 265 for his brother. How much money did they spend altogether?*
- Ask a students to read the given question aloud and explain it to the class.
- Ask another student, what mathematical operation will be used in this question.

4. Take student's response and write 'addition' on the board.
5. Select a student randomly and ask him/her to copy down the numbers in a vertical form on the board.
6. Remind him/her that ones are written under ones, tens are written under tens and hundreds are written under hundreds.

$$\begin{array}{r} 655 \text{ wristwatch} \\ + 265 \text{ sunglasses} \\ \hline \end{array}$$

7. Tell them that when the sum of ones is more than 9 after adding, then 10 ones make 1 ten. Carry 1 ten to the tens place. Similarly, when the sum of tens is more than 9 after adding, then 10 tens make 1 hundred. Carry 1 hundred to the hundreds place.
8. Check students' work.
9. Guide students where necessary.



## CONCLUSION / SUM UP

1. Tell students that we can use the addition of 3-digit numbers with carrying in real-life situations.



## ASSESSMENT

1. Write the following question on the board. Ask students to copy and answer the question in their notebooks.

*In a box, there are 173 green balls and 147 red balls. Find the total number of balls (both green and red) in the box?*

2. Check students' work.
3. Guide students where required.



## HOMEWORK / FOLLOW UP

Do question 2 of exercise 3 given on page 42 of their textbook.

# SUBTRACTION OF 2-DIGIT NUMBERS (WITH BORROWING)



## STUDENT LEARNING OUTCOMES

- Subtract 1-digit number from 2-digit numbers with borrowing.
- Subtract 2-digit numbers from 2-digit numbers with borrowing.
- Solve real-life number stories of subtraction of 2-digit numbers with borrowing.

## INFORMATION FOR TEACHERS

The teachers should be able to:

1. subtract 2-digit numbers with borrowing.
2. use subtraction in real-life situations.



**DURATION / NO OF PERIODS: 35 MINUTES / PERIOD 1**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Chart showing toffees, Textbook



## INTRODUCTION

1. Write down the following question on the board and read aloud.  
*Suppose that you have 24 rupees. You buy toffees for 5 rupees. The money that is left after buying toffees would be more than 24 rupees or less than 24 rupees.*
2. Take students' responses.
3. Tell students that the money left would be less than 24 rupees. This is called subtraction.
4. Tell students that in today's session they will learn how to do subtraction of 1-digit and 2-digit numbers with borrowing.



## DEVELOPMENT

### Activity 1:

1. Paste the following chart on the board:



Packet containing 20 toffees

$$\begin{array}{c}
 \text{---} \quad \begin{array}{c} \diagup \quad \diagup \quad \diagup \\ \diagdown \quad \diagdown \quad \diagdown \end{array} \quad = \quad ? \\
 \text{6 toffees given to} \\
 \text{the brother}
 \end{array}$$

2. Write the following question on the board and read aloud.  
*You have a packet of 20 toffees. You give 6 toffees to your brother. How many toffees are left in the packet?*
3. Ask one student to explain the question to the class.
4. Guide the student where required.
5. Ask students, which mathematical operation will be used to answer the given question.
6. Take students' responses and write 'subtraction' on the board.
7. Ask a student to write the given numbers in vertical form on the board.

$$\begin{array}{r}
 \text{T} \quad 0 \\
 2 \quad 0 \\
 - \quad 6 \\
 \hline
 \end{array}$$

8. Ask students, can you subtract 6 from 0.
9. Take students' responses and tell them we cannot subtract a bigger number from a smaller number. Suppose you have 1 pencil and your class fellow asks you to give him/her 3 pencils, can you give?
10. Tell students that since you cannot subtract 6 from 0, you can borrow (1 ten) from the tens place and carry to the ones place (as shown below). 1 tens + 0 ones = 10 ones. In this way, 2 at tens place will become 1.

Tens	Ones
2	0



Tens	Ones
1	4

$$\begin{array}{r}
 \text{T} \quad 0 \\
 1 \quad \cancel{2} \quad 0 \\
 - \quad \quad 6 \\
 \hline
 \end{array}$$

11. Ask students to subtract 6 from 10.
12. Take students' responses and write 4 on the board.
13. Ask students to look at the digit at tens place. It is 1. Since there is no digit under 1, it means it is 0. Subtracting 0 from 1 will give 1.
14. Write 1 at tens place in the answer.
15. Guide students to write the answer as a statement i.e., There are 14 toffees left in the packet.
16. Go back to the chart, cross out 6 toffees of the packet and ask students to count the remaining ones.



Packet containing 20 toffees

$$\begin{array}{c}
 \text{---} \\
 \text{---} \\
 \text{---} \\
 \text{---} \\
 \text{---}
 \end{array}
 -
 \begin{array}{c}
 \text{---} \\
 \text{---} \\
 \text{---} \\
 \text{---} \\
 \text{---} \\
 \text{---}
 \end{array}
 = 14$$

6 toffees given to the brother

17. Take students' responses and write 14 in place of the answer.

18. Guide students where required.



## CONCLUSION / SUM UP

Tell students that:

1. While solving the question, subtract ones first.
2. Borrow means to take 1 ten from the tens place and carry to the ones place.  
1 tens + 0 ones = 10 ones

# LESSON

# 20

## UNIT 2: NUMBER OPERATIONS

# SUBTRACTION OF 2-DIGIT NUMBERS (WITH BORROWING)



### STUDENT LEARNING OUTCOMES

- Recap the concept of subtraction and borrowing in 1-digit subtraction.
- Tell students that in today's lesson they will be practising subtraction of 2-digit numbers from 2-digit numbers with borrowing.



### DURATION / NO OF PERIODS: 35 MINUTES / PERIOD 2



### MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Chart showing subtraction word problem, Textbook



### DEVELOPMENT

#### Activity 1:

- Divide the class into 4 groups.
- Assign each group a 2-digit subtraction question as follows.

Group 1	Group 2	Group 3	Group 4
<div>T O</div> <div>7 5</div> <div>- 3 7</div> <div>_____</div>	<div>T O</div> <div>6 8</div> <div>- 1 9</div> <div>_____</div>	<div>T O</div> <div>4 6</div> <div>- 2 8</div> <div>_____</div>	<div>T O</div> <div>3 1</div> <div>- 1 3</div> <div>_____</div>

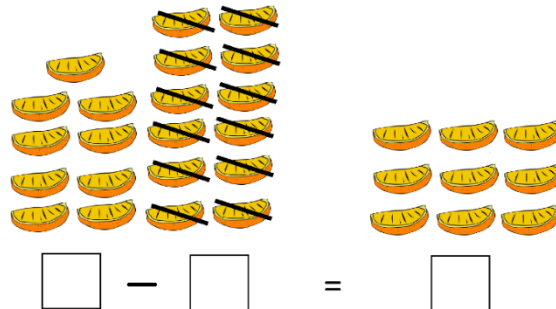
- Ask each group to discuss and answer the question in a notebook.
- Tell them to follow the rules of subtraction with borrowing learned in the previous lesson.
  - Subtract ones with ones and tens with tens.
  - When borrowing, you can take (1 ten) from the tens place and carry to the ones place. 1 tens + 0 ones = 10 ones  
In this way, the number at tens place will become one less.
- Ask one student from each group to write their answer on the board.
- Ask other students to see the answers on the board and comment if the answer is right or wrong.

- Take students' responses. Help students arrive at the correct answer.

### Activity 2:

- Paste the following chart on the board.

*There are 21 orange slices. Sana eats 12 of them. How many orange slices are left now?*



- Read the question aloud.
- Ask a volunteer to describe the question to the class.
- Guide the student if required.
- Ask the students to work in pairs to fill in the boxes in the chart.
- Guide them to:
  - Count the total number of orange slices and write in the first box.
  - Count the crossed-out orange slices and write in the second box.
  - Write these numbers in vertical form to perform subtraction with borrowing.
  - Write the answer in the third box.
- Randomly select a few students to come to the board and fill the boxes on the chart.



### CONCLUSION / SUM UP

Give some clue words for subtraction to the students. This will help them to identify the mathematical operation required in the given question.

left, how many more, how many less/fewer, remain, difference



### ASSESSMENT

- Write the following word problems on the board.
  - Yasir has 34 pencils and Aslam has 18 pencils. How many more pencils does Yasir have than Aslam?

Number of pencils Yasir has = 34 pencils

Number of pencils Aslam has = 18 pencils

---

Difference = pencils

---

---

Yasir has \_\_\_\_\_ pencils more than Aslam.

- ii. Saima had 85 rupees for shopping. She spent 29 rupees only. What amount is left with her?

Amount of money Saima had = 85 rupees

Amount of money spent = -29 rupees

---

Difference = \_\_\_\_\_ rupees

---

Saima has \_\_\_\_\_ rupees left with her.

2. Ask the students to solve the given problems in their notebooks.
3. Select any two students randomly and ask them to come one by one and copy their work on the board.
4. Guide students' where required.



## **HOMEWORK / FOLLOW UP**

Do question 2 of exercise 1 given on page 50 in their textbook.

**Month**

**4**

**LESSON****21****UNIT 2: NUMBER OPERATIONS****SUBTRACTION OF 3-DIGIT NUMBERS  
(WITHOUT BORROWING)****STUDENT LEARNING OUTCOMES**

- Subtract 1-digit number from 3-digit number without borrowing.
- Subtract 2-digit number from 3-digit number without borrowing.
- Subtract 3-digit number from 3-digit number without borrowing.

**INFORMATION FOR TEACHERS**

1. The teachers should be able to subtract 1-digit number, 2-digit number and 3-digit numbers from 3-digit number.

**DURATION / NO. OF PERIODS: 35 MINUTES / PERIOD 1****MATERIALS / RESOURCES REQUIRED**

- Board, Marker/ Chalk, Duster, Flashcards (Hundreds, Tens, Ones), Chart showing blocks, Textbook

**INTRODUCTION**

1. Write the following question on the board:

$$\begin{array}{r} 387 \\ - 53 \\ \hline \end{array}$$

2. Ask a student to come on board and answer the question.
3. Ask other students to see the answer on the board and comment if the answer is right or wrong.
4. Guide students where required.
5. Tell students that in today's lesson they will learn to subtract 3-digit numbers without borrowing.



## DEVELOPMENT

### Activity 1:

1. Make three flashcards.

Hundreds

Tens

Ones

2. Select three students randomly and ask them to stand in front of the class.
3. Give one flashcard to each student and ask them to clip their cards on their chest.
4. Ask students (with flashcards) to stand in order of hundreds, tens and ones facing the class.
5. Make three sets of pencils. One set should have 3 pencils, the second set should have 2 pencils and the last set should have 5 pencils.
6. Place these sets of pencils on the teacher's table in the order shown below.



7. Write the number 325 on the board.
8. Give the set of pencils to the students (with flashcards) as follows:  
Student with flashcard Hundreds: Set of three 3 pencils  
Student with flashcard Tens: Set of 2 pencils  
Student with flashcard Ones: Set of 5 pencils
9. Ask the class if you want to subtract 3 from 325, from which student you will take the pencils.
10. Take students' responses and take 3 pencils from the student with flashcard Ones.
11. Ask the student (with flashcard Ones), how many pencils you have now.
12. Take his/her response.
13. Ask a student to come and write the numbers in vertical form on the board.

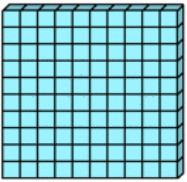
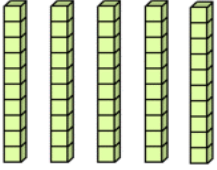
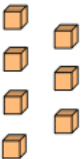
$$\begin{array}{r} 325 \\ - \quad 3 \\ \hline \end{array}$$

14. Select a student randomly and ask him/her to answer the question on the board.
15. Write 2 at ones place in the answer box.
16. Ask students (with flashcards Tens and Hundreds), how many pencils do you have.

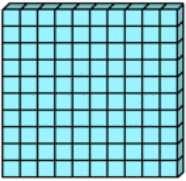
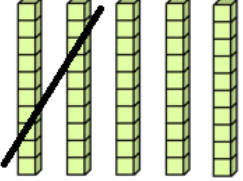
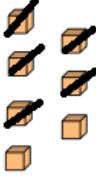
17. Take their responses and write 2 at tens place and 3 at hundreds place.
18. Tell students that in 1-digit subtraction, we subtract one number from the other at ones place only.

### Activity 2:

1. Paste the following chart on the board.

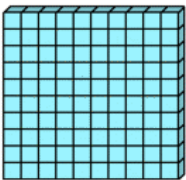
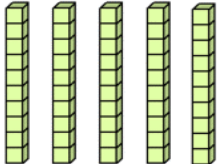
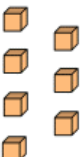
Hundreds	Tens	Ones
		
1	5	7
-		

2. Ask the whole class to read the number written in the table.
3. Take their responses and repeat the number as one hundred and fifty-seven.
4. Tell students that we have to subtract 25 from 157.
5. Ask the class, where should we write 25 in the given table.
6. Take their responses.
7. Tell them that 25 is a 2-digit number and we will write ones under ones and tens under tens.
8. Write 5 in the column of 'ones' and 2 in the column of 'tens'.

Hundreds	Tens	Ones
		
1	5	7
-	2	5
<b>1</b>	<b>3</b>	<b>2</b>

9. Select a student randomly and ask him/her to subtract 5 from 7 and enter the answer in the table. Ask the student to cross out blocks in the given chart to show subtraction.
10. Guide the student if required.

11. Select another student randomly and ask him/her to subtract 2 from 5 and enter the answer in the table. Ask the student to cross out blocks in the given chart to show subtraction.
12. Guide the student if required.
13. Ask students to look at the number at hundreds place. It is 1. There is no digit under 1. It means there is 0.  $1 - 0 = 1$
14. Write 1 at hundreds place and the answer will be 132.

	Hundreds	Tens	Ones
			
	1	5	7
-		2	5
	<b>1</b>	<b>3</b>	<b>2</b>



## CONCLUSION / SUM UP

Conclude the lesson by telling the students that in subtraction without borrowing we subtract the digit at ones place from the digit at ones place and the digit at tens place from the digit at tens place.

## LESSON

# 22

## UNIT 2: NUMBER OPERATIONS

# SUBTRACTION OF 3-DIGIT NUMBERS (WITHOUT BORROWING)



## INTRODUCTION

1. Recap 2-digit subtraction by writing the following questions on the board.
2. Ask students to copy the questions in their notebooks and answer them.

Hundred	Ten	Ones
6	4	7
–	3	4
<hr/>		

Hundred	Ten	Ones
5	8	3
–	6	1
<hr/>		

3. Check students' responses. Help students reach the right answer.
4. Tell students that in today's lesson they will learn 3-digit subtraction without borrowing.



## DURATION / NO. OF PERIODS: 35 MINUTES / PERIOD 2



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/ Chalk, Duster, 3 Number trays, Textbook



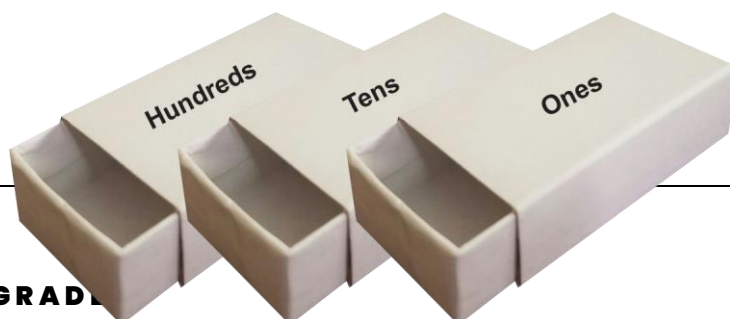
## DEVELOPMENT

### Activity 1:

1. Divide the class into four groups. Give each group a 'number tray' and some pebbles.

Method of making NUMBER TRAY

Take three empty matchboxes and consider them as trays. Put them together in such a way that they open easily like drawers (as shown below). Label the first matchbox as ones, the second matchbox as tens and the third matchbox as hundreds.





2. Write a 3-digit number 457 on the board.
3. Tell students of each group to put the pebbles in their number tray as follows:
  - 4 pebbles in the matchbox labelled as 'hundreds'
  - 5 pebbles in the matchbox labelled as 'tens'
  - 7 pebbles in the matchbox labelled as 'ones'
4. Instruct students to place the number trays in the correct order i.e., H T O
5. Write another 3-digit number 235 on the board.
6. Tell students, we have to subtract 235 from 457. For this, we will take out pebbles from the number tray.
7. Ask each group to recall the rule (subtract ones from ones, tens from tens and hundreds from hundreds) and take out pebbles from the number tray as follows:
  - 2 pebbles from the matchbox labelled as 'hundreds'. This means subtracting 2 hundreds from 4 hundreds.
  - 3 pebbles from the matchbox labelled as 'tens'. This means subtracting 3 tens from 5 tens.
  - 5 pebbles from the matchbox labelled as 'ones'. This means subtracting 5 ones from 7 ones.
8. Ask each group to count the remaining number of pebbles in their number tray.
9. Select a student randomly and ask him/her to write the numbers in vertical form on the board.
10. Call a student from any one group on the board and ask him/her to write the answer.
$$\begin{array}{r} 457 \\ - 235 \\ \hline 222 \end{array}$$
11. Check student's response.
12. Guide the group if required.
13. Ask the remaining groups to match their answer with the one written on the board.
14. In case of discrepancy, explain the solution again.



## CONCLUSION / SUM UP

Conclude the lesson by telling the students that in subtraction without borrowing, we subtract:

1. the digit at ones place from the digit at ones place,
2. the digit at tens place from the digit at tens place, and
3. the digit at hundreds place from the digit at hundreds place.



## ASSESSMENT

1. Divide the board into three columns. Label each column as follows:

1-digit Subtraction	2-digit Subtraction	3-digit Subtraction

2. Write the following questions in the table.

1-digit Subtraction	2-digit Subtraction	3-digit Subtraction
$\begin{array}{r} 348 \\ - 5 \\ \hline \end{array}$	$\begin{array}{r} 688 \\ - 27 \\ \hline \end{array}$	$\begin{array}{r} 946 \\ - 325 \\ \hline \end{array}$

3. Select three students randomly and ask them to come on the board to answer one question.
4. Check the answers one by one and ask the rest of the students to comment if the answers are right.
5. Guide students where required.



## HOMEWORK / FOLLOW UP

- Do question 1 of exercise 2 on page 53 of their textbooks.

**LESSON****23****UNIT 2: NUMBER OPERATIONS****SUBTRACTION OF 3-DIGIT NUMBERS  
(WITHOUT BORROWING)****STUDENT LEARNING OUTCOME**

- Solve real-life number stories of subtraction up to 3-digit without borrowing.

**INFORMATION FOR TEACHERS**

The teachers should be able to use subtraction of 3-digit numbers in real-life situations.

**DURATION / NO. OF PERIODS: 35 MINUTES / 1 PERIOD****MATERIALS / RESOURCES REQUIRED**

- Board, Marker/Chalk, Duster, Textbook

**INTRODUCTION**

1. Ask students to suppose, you have received 300 rupees from your elders on Eid day. You spent 250 rupees to buy a toy. Now, you want to know how much money is left. What would you do to find out the money left?
2. Take students' responses. Tell them, you will subtract 250 rupees from 300 rupees to find out how much money is left.
3. Tell students that in today's lesson they will learn how to use subtraction of 3-digit numbers to solve daily life problems.

**DEVELOPMENT****Activity 1:**

1. Write the following question on the board and ask students to copy it in their notebooks.  
*There are 128 guests at a party. 5 of them left early. How many guests are left?*
2. Read the question aloud.
3. Ask a volunteer to explain the question to the class.

4. Clarify the question where required.
5. Guide students to write the numbers vertically for subtraction.

$$\begin{array}{r} 128 \\ - \quad 5 \\ \hline \end{array}$$

6. Ask students to answer the question following the rules of the 3-digit subtraction learned in the previous class.
7. Check students' work and guide where necessary.
8. Repeat steps 2-7 for the following questions.
  - i. *There are 149 pages in a book. If Saleem has read 16 pages of that book, how many pages are left?*
  - ii. *There are 365 days in a year. If a man works 234 days in a year, how many days does he not work?*



## CONCLUSION / SUM UP

Tell students that:

1. We can use 3-digit subtraction to solve real-life problems.
2. Subtract ones from ones, tens from tens and hundreds from hundreds



## ASSESSMENT

1. Write the following question on the board.

Your father gives you 685 rupees. You buy a shirt for 253 rupees. How much money do you have now?

Money given by father	=	rupees
Money spent to buy shirt	=	rupees
Money left	=	

2. Read the question aloud.
3. Ask a volunteer to come on the board and enter values in the first two rows.
4. Ask the rest of the students to check if the values are placed correctly.
5. Ask another volunteer to come on the board, carry out subtraction and write the answer.

Money given by father = 685 rupees

Money spent to buy shirt = 253 rupees

Money left = - 432 rupees

---

You have 432 rupees now.

---

6. Ask the rest of the students to check if the answer is correct.
7. Guide students' where necessary.



## **HOMEWORK / FOLLOW UP**

Do question 2 of exercise 2 on page 53 of the textbook.

# SUBTRACTION OF 3-DIGIT NUMBERS (WITH BORROWING)



## STUDENT LEARNING OUTCOMES

- Subtract 1-digit number from 3-digit number with borrowing.
- Subtract 2-digit number from 3-digit number with borrowing.
- Subtract 3-digit number from 3-digit number with borrowing.

## INFORMATION FOR TEACHERS

The teachers should be able to subtract 1-digit, 2-digit and 3-digit number from 3-digit number with borrowing.



**DURATION / NO. OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Textbook



## INTRODUCTION

1. Ask students what is the smallest 3-digit number.
2. Take students' responses. On the board, write 100 as the smallest 3-digit number.
3. Ask students, what is the biggest 1 - digit number.
4. Take students' responses. On the board, write 9 as the biggest 1-digit number.
5. Ask students, how we can subtract 9 from 100.
6. Take students' responses and write 9 and 100 vertically on the board with a subtraction sign.

$$\begin{array}{r} 100 \\ - \quad 9 \\ \hline \end{array}$$

7. Select a student randomly and ask him/her to subtract 9 from 0.
8. Take student's response that 9 cannot be subtracted from 0 because 9 is a bigger number than 0.
9. Ask the student what do we do in such case?
10. Take student's response that we borrow.
11. Tell students that in today's lesson they will learn to do 3-digit subtraction with borrowing.



## DEVELOPMENT

### Activity 1:

- Write the following question on the board.

$$\begin{array}{r} 143 \\ - \quad 7 \\ \hline \end{array}$$

- Ask students, can we subtract 7 from 3.
- Take students' responses that we cannot subtract 7 from 3 as 7 is greater than 3.
- Ask students, what should we do?
- Take students' responses that we will borrow.
- Place the following chart on the board.

Hundreds	Tens	Ones
1	4	3

→

Hundreds	Tens	Ones
1	3	6

- Tell students that we will borrow 1 ten as 10 ones from the tens place and carry to the ones place. Thus, 1 tens will be borrowed by 3 ones to become 13.
- Now, carry out subtraction as follows:

- Subtract the ones. Borrow 1 tens as 10 ones from the tens place and carry to the ones place. 13 ones – 7 ones = 6 ones

$$\begin{array}{r} 1^3 \overset{1}{\cancel{4}} 3 \\ - \quad 7 \\ \hline 6 \end{array}$$

- Subtract the tens. 3 tens – 0 tens = 3 tens

$$\begin{array}{r} 1^3 \overset{1}{\cancel{4}} 3 \\ - \quad 7 \\ \hline 3 \quad 6 \end{array}$$

- Subtract the hundreds. 1 hundreds – 0 hundreds = 1 hundreds

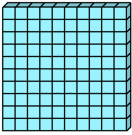
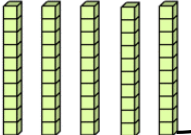

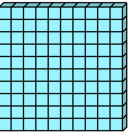
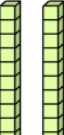
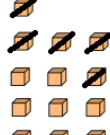
$$\begin{array}{r} 1^3 \overset{1}{\cancel{4}} 3 \\ - \quad 7 \\ \hline 1 \quad 3 \quad 6 \end{array}$$

## Activity 2:

- Write the following question on the board:

$$\begin{array}{r} 153 \\ - 25 \\ \hline \end{array}$$

- Ask students to answer the question in their notebooks.
- Make pairs of students and tell them to exchange their answer with each other.
- Show the working on the board and ask students to check their peer's work from it.
- Place the following chart on the board.

Hundreds	Tens	Ones		Hundreds	Tens	Ones
			→			
1	5	3		1	2	8

- Tell students that 1 tens will be borrowed by 3 ones to become 13.
- Now, carry out subtraction as follows:
  - Subtract the ones. Borrow 1 tens as 10 ones from the tens place and carry to the ones place. 13 ones – 5 ones = 8 ones

$$\begin{array}{r} 1^4 \cancel{5}^1 3 \\ - 25 \\ \hline 8 \end{array}$$

- Subtract the tens. 4 tens – 2 tens = 2 tens

$$\begin{array}{r} 1^4 \cancel{5}^1 3 \\ - 25 \\ \hline 28 \end{array}$$

- Subtract the hundreds. 1 hundred – 0 hundreds = 1 hundred

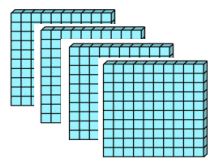
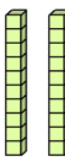
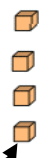
$$\begin{array}{r} 1^4 \cancel{5}^1 3 \\ - 25 \\ \hline 128 \end{array}$$

### Activity 3:

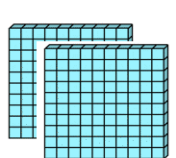
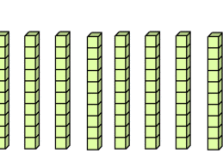

- Write the following question on the board.

$$\begin{array}{r} 424 \\ - 135 \\ \hline \end{array}$$

- Make suitable groups of the students.
- Ask students, to answer the given question in groups in a notebook.
- Visit each group and guide students where required.
- Answer the question on the board and ask all the groups to match their working with the ones shown on the board.
- Place the following chart on the board.

Hundreds	Tens	Ones
		
4	2	4

→

Hundreds	Tens	Ones
		
2	8	9

- Tell students that 1 tens will be borrowed by 4 ones to become 14.
- Now, carry out subtraction as follows:
  - Subtract the ones. 2 is at tens place. So, we borrow 1 hundred as 10 tens from the hundreds place and carry to the tens place. Then, we borrow 1 ten as 10 ones from the tens place and carry to the ones place. 14 ones – 5 ones = 9 ones

$$\begin{array}{r} \overset{3}{\cancel{4}}\overset{11}{\cancel{2}}\overset{1}{\cancel{4}} \\ - 135 \\ \hline 9 \end{array}$$

- Subtract the tens. 11 tens – 3 tens = 8 tens

$$\begin{array}{r} \overset{3}{\cancel{4}}\overset{11}{\cancel{2}}\overset{1}{\cancel{4}} \\ - 135 \\ \hline 89 \end{array}$$

- Subtract the hundreds. 3 hundreds – 1 hundreds = 2 hundreds

$$\begin{array}{r} \overset{3}{\cancel{4}}\overset{11}{\cancel{2}}\overset{1}{\cancel{4}} \\ - 135 \\ \hline 289 \end{array}$$



### CONCLUSION / SUM UP

Tell students that in today's lesson we have learned about the subtraction of 1-digit number, 2-digit number and 3-digit number from 3-digit number with borrowing.



## ASSESSMENT

1. Write the following questions on the board and ask students to answer in their notebooks.

$$\begin{array}{r} 723 \\ - 77 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 156 \\ - 78 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 831 \\ - 153 \\ \hline \\ \hline \end{array}$$

2. Check students' responses.
3. Guide students where required.



## HOMEWORK / FOLLOW UP

Do question 1 of exercise 3 on page 57 of the textbook.

# SUBTRACTION OF 3-DIGIT NUMBERS (WITH BORROWING)



## STUDENT LEARNING OUTCOME

- Solve real-life number stories of subtraction up to 3-digit with borrowing.

## INFORMATION FOR TEACHERS

The teachers should be able to use subtraction of 3-digit numbers in real-life situations.



**DURATION / NO. OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Money (9 ten-rupee notes and 2 five-rupee coins), Textbook



## INTRODUCTION

1. Call two students to stand in front of the class.
2. Give one student 100 rupees (9 ten-rupee notes and 2 five-rupee coins).
3. Ask that student to give 65 rupees to the other student.
4. Ask the student (who had 100 rupees), what would you do to find out the money that is left with you.
5. Take his/her response and tell that we will subtract 65 rupees from 100 rupees.
6. Tell students that in today's lesson they will learn to use 3-digit subtraction with borrowing to solve real-life problems.



## DEVELOPMENT

### Activity I:

1. Write the following question on the board.

*There are 635 pages in a book. You have read 457 pages. How many more pages do you have to read to finish the book?*

	H	T	O
Total pages =			
Pages read = -			
Pages left =			

- Teacher should read the question aloud and explain it.
- Ask all the students to copy the table in their notebooks and enter the values of the given question in it.
- Ask them to answer the question and share their answer.
- Take students' responses and guide if required.
- Ask a volunteer to answer the given question and write the answer in the table.
- Ask the rest of the students to check and comment whether the answer is correct.
- Guide students where required. Explain the concept of borrowing for subtraction in this case. You cannot subtract 7 from 5 which is why you need to borrow 1 from 3, which leaves behind two and 5 becomes 15. 15 minus 7 is 8. When you move to tens again you cannot subtract 5 from 2, so you borrow 1 from 6, which leaves behind 5. And 2 becomes 12, 12 minus 5 will be 7. Lastly you have 5 minus 4 which is 1.

	H	T	O
Total pages =	6	3	5
Pages read = -	4	5	7
Pages left =	1	7	8

- Tell students that the answer will be written as:

*I will read 178 pages more to finish the book.*

### Activity 2:

- Write the following question on the board and ask students to answer it in their notebooks.

*On a train, there are 265 passengers. If 169 passengers get off the train at a station, how many passengers are left on the train?*

Total number of passengers =

Number of passengers get off =

Number of passengers left =

There are \_\_\_\_\_ passengers left on the train.

- Ask the class to answer the given questions in their notebook.
- Make pairs of students and ask them to check each other's work.

4. Monitor's students' work and guide if needed.



## CONCLUSION / SUM UP

Tell students that:

1. We can use subtraction of 3-digit numbers with borrowing to solve real-life problems.
2. After reading the question copy down numbers in vertical form.
3. Subtract ones with ones, tens with tens and hundreds with hundreds.
4. Write the answer in the form of a statement.



## ASSESSMENT

1. Write the following question on the board and ask students to answer it in their notebooks.

*In a basket, there are 265 marbles. If Zaid gives 176 marbles to Rashid, how many marbles are left in the basket?*

Total number of marbles                      =

Number of marbles given                      =

Number of marbles left                      =

---

There are \_\_\_\_\_ marbles left in the basket.

---

2. Check students' responses and guide where required.



## HOMEWORK / FOLLOW UP

Do question 2 of exercise 3 on page 57 of the textbooks.

**LESSON****26****UNIT 2: NUMBER OPERATIONS****SUBTRACTION OF 3-DIGIT NUMBERS  
(WITH BORROWING)****STUDENT LEARNING OUTCOME**

- Analyze simple situations identifying correct operation of addition and subtraction with carrying/borrowing in mixed form.

**INFORMATION FOR TEACHERS**

The teachers should be able to identify and use mixed operations in simple situations.

**DURATION / NO. OF PERIODS: 35 MINUTES / 1 PERIOD****MATERIALS / RESOURCES REQUIRED**

- Board, Marker/Chalk, Duster, Chart showing mixed operation questions, Textbook

**INTRODUCTION**

1. Select two students randomly and ask them to stand in front of the class.
2. Call one student as Student A and the other as Student B.
3. Give some pencils (13 pencils) to Student A and ask him/her to count them.
4. Take Student A's response and give 7 more pencils to him/her.
5. Ask Student A to count the total number of pencils he/she has now.
6. Ask Student A to give 3 pencils to Student B.
7. Ask Student A, count and tell how many pencils do you have now?
8. Take student's response.
9. Ask the rest of the class, what Student A has done to find the answer.
10. Take students' responses.
11. Tell them that in today's lesson they will learn to solve questions in which they have to use addition and subtraction together in simple situations.



## DEVELOPMENT

### Activity 1:

1. Copy the following table showing clue words on the board:

Clue Words for Addition	Clue Words for Subtraction
Total	Left
In all	More than
Altogether	How many more
Sum	Remaining
Added to	Difference

2. Read both lists aloud in the class and ask students to repeat after you.
3. Tell students that these clue words will help them to identify whether they have to carry out addition or subtraction first.
4. Paste the following chart on the board.

Question	Step 1	Step 2
There are 528 birds and 395 animals in a zoo. <b>How many</b> more birds are there than animals? What is the <b>total</b> number of birds and animals altogether in the zoo?	Subtraction	Addition
A bookseller has 385 books. He buys 145 more books. Find the <b>total</b> number of books. He sells 265 books. How many books are <b>left</b> with him?		
A factory produced 624 dolls and 128 toy cars in a month. 435 dolls were sold. What is the number of <b>remaining</b> dolls? What is the <b>total</b> number of toys produced by the factory in a month?		
Sana got Rs. 500 from her mother and 300 from her father. How much money did Sana get <b>in all</b> ? She gave 400 to her brother. How much money is <b>left</b> with Sana?		

5. Tell students that in the given table different questions include both addition and subtraction. Identify which process (addition or subtraction) will be carried out first and which will be carried out next.

6. Read the first question aloud and ask students to focus on the clue words in bold.
7. Tell students that the first one is done for you. In the given question, the clue word 'how many' gives a hint that we will carry out subtraction at step 1 whereas, the clue word 'total' gives a hint that we will carry out addition at step 2.
8. Make pairs of students and ask them to answer the rest of the questions in their notebooks. Check each other's responses.
9. Select three students randomly and ask them to come on the board and share their answers one by one.
10. Guide where required.

### Activity 2:

1. Write the following question on the board.  
*A bookseller has 475 books. He buys 165 more books. Find the total number of books. If he sells 365 books. Find the number of books left with him.*
2. Read the question aloud.
3. Select a student randomly and ask him/her to underline the clue words in the question. (The words 'total' and 'left' will be underlined)
4. Ask the student, which operation will be carried out first and which will be carried out next.
5. Take his/her response and tell students that the word 'total' gives a hint that addition will be carried out first and the word 'left' gives a hint that subtraction will be carried out next.
6. Call a student to answer the question on the board.
7. Take his/her response. Ask the rest of the class to comment if the solution is correct.
8. Guide students where required.



### CONCLUSION / SUM UP

Tell students that:

1. The questions we have done in today's session involve mixed operation which means we have to do addition as well as subtraction.
2. Use clue words to identify which process, addition or subtraction, will be carried out first.



### ASSESSMENT

1. Write the following question on the board and ask the students to solve it in their notebooks.

In an aeroplane, there are 175 passengers. 85 more passengers get into the aeroplane at the next airport. Find the total number of passengers in the aeroplane?

If 75 passengers get down from the aeroplane at the next airport, how many passengers are left in the aeroplane now?

2. Check students' responses.
3. Guide students where required.



## **HOMEWORK / FOLLOW UP**

Do questions 1 and 2 on page 58 of the textbook.

## LESSON

# 27

## UNIT 2: NUMBER OPERATIONS

# SUBTRACTION OF 3-DIGIT NUMBERS (WITH BORROWING)



### STUDENT LEARNING OUTCOME

- Subtract numbers up to 50 using mental calculation strategies.

### INFORMATION FOR TEACHERS

The teachers should be able to:

- Convert a 2-digit number into ones and tens and then subtract it.
- Subtract a 2-digit number using mental calculation strategies.



**DURATION / NO. OF PERIODS: 35 MINUTES / 1 PERIOD**



### MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Textbook



### INTRODUCTION

- Write the numbers 28 and 13 on the board.
- Ask students, how can we subtract 13 from 28 without physical calculation.
- Note their responses and tell them that first, we convert the number 28 into  $20 + 8$  and the number 13 into  $10 + 3$ .
- Write the following on the board to explain the mental strategy.

$$\begin{array}{rcl}
 28 & - & 13 \\
 \swarrow & & \swarrow \\
 20 + 8 & & 10 + 3
 \end{array}
 \qquad
 \begin{array}{rcl}
 \boxed{20} & - & \boxed{10} = \boxed{10} \\
 \boxed{8} & - & \boxed{3} = \boxed{5} \\
 \hline
 28 & - & 13 = 15
 \end{array}$$

- Split 28 into tens and ones it becomes  $20 + 8$ . Split 13 into tens and ones, it becomes  $10 + 3$ . Subtract ones from ones i.e.  $8 \text{ minus } 3 = 5$ . Subtract tens from tens, i.e.  $20 \text{ minus } 10 = 10$ . In total how much is left? 5 and 10 which is 15.
- Tell students that in today's session they will learn to subtract numbers using mental calculation strategies.



## DEVELOPMENT

### Activity 1:

1. Write the following question on the board.  
 $35 - 12 = ?$
2. Ask all the students to answer the question.
3. Select a student randomly and ask him/her to explain the steps of subtraction using a mental strategy.
4. Tell the student, in your mind break 35 into  $30 + 5$  and 12 into  $10 + 2$ .
5. Subtract tens from tens and ones from ones to get the answer.  
 $20 - 10 = 10$  and  $8 - 3 = 5$
6. Take his/her response.
7. Guide where required.



## CONCLUSION / SUM UP

Tell students to remember the following steps.

- i. In your mind break the number into its tens and ones.
- ii. Subtract tens from tens and ones from ones to get the answer.



## ASSESSMENT

1. Write the following questions on the board.
  - i.  $49 - 17 = ?$
  - ii.  $30 - 10 = ?$
  - iii.  $32 - 21 = ?$
  - iv.  $15 - 11 = ?$
  - v.  $27 - 13 = ?$
2. Divide the class into five groups.
3. Ask each group to answer these five questions using mental strategy. Raise their hands when they are done. The group to give all correct answers in the least time will win.
4. Check answers of each group and declare the winner.



## HOMEWORK / FOLLOW UP

Do questions (c) to (k) on page 60 of the textbook.

**Month**

**5**

# MULTIPLICATION



## STUDENT LEARNING OUTCOME

- Recognize multiplication is repeated addition (e.g.,  $2 + 2 + 2 = 6$  is equivalent to 3 times 2 = 6 and  $3 \times 2 = 6$ ) and use multiplication symbol "x".

## INFORMATION FOR TEACHERS

The teachers should be able to:

- Know the sign of multiplication (x).
- Know that multiplication is a repeated process of addition.
- Carry out the process of multiplication.



**DURATION / NO. OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Chart showing cricket balls, Chart showing teacups, 70 pebbles, Textbook



## INTRODUCTION

Ask students the following questions:

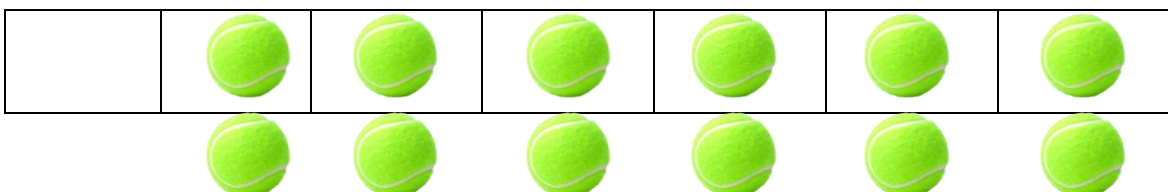
- How many eyes does a boy have? (Expected answer: 2)
- How will you find how many eyes do 10 boys have? (Expected answer:  $2 + 2 + 2 + 2 + 2 = 10$ )
- Take students' responses and tell students that there is an easier way to find out the answer.
- Tell students that in today's lesson they will learn that multiplication is a repeated process of addition.

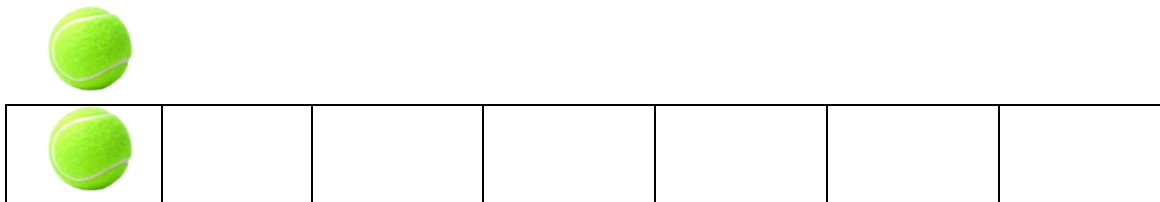


## DEVELOPMENT

### Activity 1:

- Display the following chart on the board.





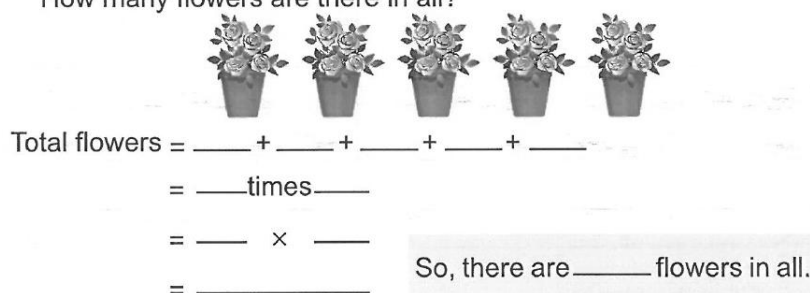
2. Ask students the following questions:
  - i. How many pairs of balls are shown on the chart? (Answer: 7)
  - ii. How many balls are there in each pair? (Answer: 2)
3. Select a student randomly and ask him/her to count the total number of balls. (Answer 14)
4. Take student's response.
5. Call another student and ask him to add 2 seven times i.e.,  $2+2+2+2+2+2+2 = 14$
6. Ask students, how many times we added 2? (Answer: 7 times)
7. Tell students that for 'times' we use the sign "x" This is called 'multiplication'.

So,  $2+2+2+2+2+2+2 = 14$

It can be written as:  $2 \times 7 = 14$  and read as: 2 times 7 equals to 14.

8. Repeat the activity using the following chart.

How many flowers are there in all?



9. Draw the given figures on the board.

## Activity 2:

1. Divide the class into four groups.
2. Give each group a set of pebbles as follows:
  - 12 pebbles to group 1
  - 15 pebbles to group 2
  - 18 pebbles to group 3
  - 21 pebbles to group 4
3. Tell each group to arrange their pebbles in triplets, like  $3 + 3 + 3$
4. Call a student from group 1 and ask him/her, write your triplets in the form of addition on the board. (Answer:  $3+3+3+3 = 12$ )
5. Ask another student of group 1, how many triplets you have. (Answer: 4)
6. Select another student of group 1 and ask, how many pebbles are there in a triplet. (Answer: 3)
7. Tell the whole class that 4 times 3 can be written as  $4 \times 3 = 12$ .
8. Repeat steps 4 - 7 with groups 2, 3, and 4.
9. Guide students where necessary.



## CONCLUSION / SUM UP

Tell students that for repeated addition we simply use the sign “x” and the number with the times of repetition.



## **ASSESSMENT**

1. Ask students the following questions:
  - i. One car has 4 wheels. How many wheels will 5 cars have?
  - ii. How many eyes will 6 men have?
2. Take students' responses.
3. Guide students where necessary.



## **HOMEWORK / FOLLOW UP**

Do questions 1 and 3 of exercise 1 on page 65 of the textbook.

**LESSON****29****UNIT 2: NUMBER OPERATIONS****MULTIPLICATION****STUDENT LEARNING OUTCOME**

- Complete number sequence in steps of 2, 3, 4, 5, and 10 (e.g., in steps of 2, the sequence is expressed as 2, 4, 6 ...)

**INFORMATION FOR TEACHERS**

The teachers should know the multiples of 2, 3, 4, 5, 10

**DURATION / NO. OF PERIODS: 35 MINUTES / 1 PERIOD****MATERIALS / RESOURCES REQUIRED**

- Board, Marker/Chalk, Duster, Charts, Toothpicks, Textbook

**INTRODUCTION**

1. Write the following on the board.  
2, 4, 6, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
2. Ask the whole class to tell what number will come after 6.
3. Take students' responses and tell them that in today's lesson they will learn about number sequence in steps of 2, 3, 4, 5, and 10.

**DEVELOPMENT****Activity 1:**

1. Call ten students to stand in front of the class in a line.
2. Ask the first student, raise your hands.
3. Ask the class to count the number of hands and say loudly the number. (Answer: 2)
4. Ask the second student, raise your hands.
5. Ask the class to continue count (go on after 2) and say loudly the number. (Answer: 4)
6. Ask the third student, raise your hands.

7. Ask the class to continue count (go on after 4) and say loudly the number. (Answer: 6)
8. Repeat steps 6–7 with the fourth, fifth, sixth student till the tenth one. As a result, the class will count the hands in pairs as 8, 10, 12, 14, 16, 18, 20.

### Activity 2:

1. Divide the class into four groups and distribute toothpicks to each group as follows:  
 30 toothpicks to group 1  
 40 toothpicks to group 2  
 50 toothpicks to group 3  
 100 toothpicks to group 4
2. Instruct each group to divide the toothpicks as follows:  
 Group 1 to divide toothpicks in sets of 3 toothpicks  
 Group 2 to divide toothpicks in sets of 4 toothpicks  
 Group 3 to divide toothpicks in sets of 5 toothpicks  
 Group 4 to divide toothpicks in sets of 10 toothpicks
3. Ask all the groups to write their results in the following table drawn on the board:

Group 1	3, 6, 9, 12, 15, 18, 21, 24, 27, 30
Group 2	4, 8, 12, 16, 20, 24, 28, 32, 36, 40
Group 3	5, 10, 15, 20, 25, 30, 35, 40, 45, 50
Group 4	10, 20, 30, 40, 50, 60, 70, 80, 90, 100



### CONCLUSION / SUM UP

1. Conclude the lesson by telling the students that in groups we can count a large number of things easily.



### ASSESSMENT

Ask the following question from the students.

- i. If you have 4 packets containing 5 toffees each, how many toffees you will have?
- ii. If you have 60 pencils in a box, how many sets of 5 pencils you can make?



### HOMEWORK / FOLLOW UP

Write counting up to 100 in your notebook and encircle every fifth number.

# MULTIPLICATION



## STUDENT LEARNING OUTCOMES

- Develop multiplication tables of 2, 3, 4, 5, and 10 till the multiplication of 10 x 10.
- Multiply numbers within multiplication tables.

## INFORMATION FOR TEACHERS

The teachers should know about:

1. Concept of multiplication
2. Formation of tables
3. Multiplication of numbers



**DURATION / NO. OF PERIODS: 35 MINUTES / PERIOD 1**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Toffees, Charts showing multiplication tables of 2, 3, 4, 5, and 10, Textbook



## INTRODUCTION

1. Place 15 pairs of toffees on the table.
2. Call 5 students to stand in front of the class.
3. Distribute 15 pairs of toffees to the five students as follows:

1 pair to the first student	2 pairs to the second student	3 pairs to the third student
4 pairs to the fourth student	5 pairs to the fifth student	
























































4. Explain to the students that a pair means a group of two things.
5. Ask the first student:
  - How many pairs of toffees do you have? (Answer: 1 pair)
  - How many toffees do you have? (Answer: 2)
6. Write on the board  $1 \times 2 = 2$
7. Ask the second student:
  - How many pairs of toffees do you have? (Answer: 2 pairs)
  - How many toffees do you have? (Answer: 4)
8. Write on the board  $2 \times 2 = 4$
9. Ask the third student:
 

How many pairs of toffees do you have? (Answer: 3 pairs)

How many toffees do you have? (Answer: 6)

- ## DEVELOPMENT

### Activity 1:

- |   |  |           |  |
|---|--|-----------|--|
|    |  | <b>1</b>  |  |
|     |  | <b>2</b>  |  |
|      |  | <b>3</b>  |  |
|       |  | <b>4</b>  |  |
|        |  | <b>5</b>  |  |
|         |  | <b>6</b>  |  |
|          |  | <b>7</b>  |  |
|           |  | <b>8</b>  |  |
|            |  | <b>9</b>  |  |
|           |  | <b>10</b> |  |

## GRADE 2

2. Tell students that this can be written as

$$2 \times 1 = 2$$











Such that:  $2$  = number of things in a set

$\times$  = multiplication symbol

$1$  = number of pairs

$2$  = total number of things

3. Call students one by one on the board to fill in the last column of the table.

	<b>1</b>	$2 \times 1 = 2$	1 time 2 is 2
	<b>2</b>	$2 \times 2 = 4$	2 times 2 is 4
	<b>3</b>	$2 \times 3 = 6$	3 times 2 is 6
	<b>4</b>	$2 \times 4 = 8$	4 times 2 is 8
	<b>5</b>	$2 \times 5 = 10$	5 times 2 is 10
	<b>6</b>	$2 \times 6 = 12$	6 times 2 is 12
	<b>7</b>	$2 \times 7 = 14$	7 times 2 is 14
	<b>8</b>	$2 \times 8 = 16$	8 times 2 is 16
	<b>9</b>	$2 \times 9 = 18$	9 times 2 is 18
	<b>10</b>	$2 \times 10 = 20$	10 times 2 is 20

4. Tell students that if we write these in the form of a table, it is called a multiplication table of 2.

2 x	1 =	2
2 x	2 =	4
2 x	3 =	6
2 x	4 =	8
2 x	5 =	10
2 x	6 =	12
2 x	7 =	14
2 x	8 =	16
2 x	9 =	18
2 x	10 =	20

5. Divide the class into four groups.
6. Ask each group to develop a multiplication table using the guidelines given in the previous activity (students may take help from the chart pasted on the board).
7. Assign the multiplication table to each group as follows:
- Group 1: Multiplication table of 3
- Group 2: Multiplication table of 4
- Group 3: Multiplication table of 5
- Group 4: Multiplication table of 10
8. Guide students where necessary.



## CONCLUSION / SUM UP

Tell students that in today's lesson they have learned to develop a multiplication table of 2 and they can develop multiplication tables of 3, 4, 5, and 10 on their own using this method.

# MULTIPLICATION



## INTRODUCTION

Recap the multiplication tables of 2, 3, 4, 5, and 10 with the help of the charts prepared for the previous lesson.



**DURATION / NO. OF PERIODS: 35 MINUTES / PERIOD 2**



## MATERIALS / RESOURCES REQUIRED

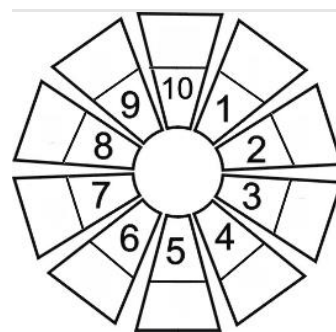
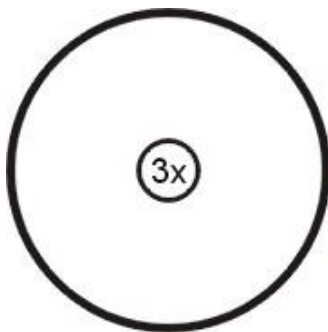
- Board, Marker/Chalk, Charts showing multiplication tables of 2, 3, 4, 5, and 10, two flashcards (one round and the other cut into 10 strips), Tape/Glue, Textbook



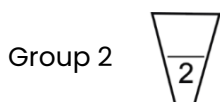
## DEVELOPMENT

### Activity 2:

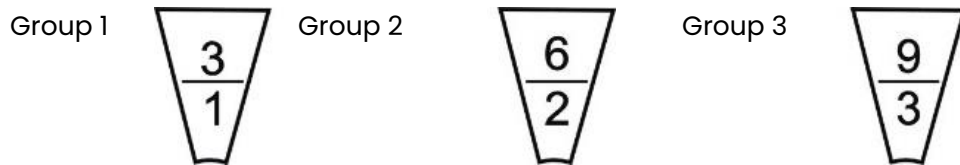
- Cut two round flashcards of equal size.
- Cut the second flashcard in 10 equal strips. Prepare them as shown below.



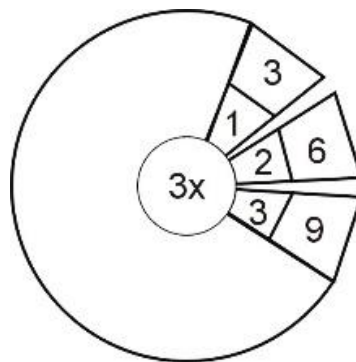
- Divide the class into ten groups.
- Distribute one strip to each group in a way that students of group 1 should get the strip with the number '1' written on it and so on.



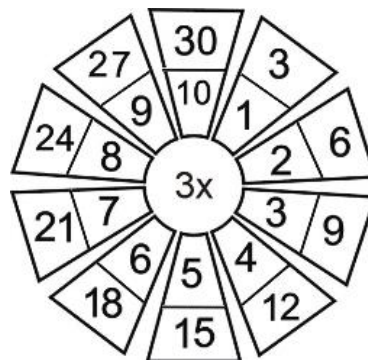
5. Paste the round flashcard on the board.
6. Tell each group to multiply the number 3 with the number written on their strip.
7. Tell them to write the answers in the space provided on their strip as shown below:



8. Ask one student from each group to come on board and paste their strip on the round flashcard.



9. Let all the groups complete their work.



10. Tell students, you can easily read the table of 3 with the help of this figure.
11. Ask the whole class to repeat the table of 3 after you.



## CONCLUSION / SUM UP

Tell students that in today's class they have learned to develop a multiplication table of 3.



## ASSESSMENT

Ask students to answer the following questions using the flashcard wheel.

1.  $3 \times 5 =$
2.  $3 \times 7 =$
3.  $3 \times 2 =$
4.  $3 \times 4 =$
5.  $3 \times 9 =$



## HOMEWORK / FOLLOW UP

Memorize tables of 2, 3, 4, 5, and 10 on pages 69–73 of the textbook.

# MULTIPLICATION



## STUDENT LEARNING OUTCOMES

- Write a number sentence for multiplication from the picture such as  $2 \times 6 = 12$
- Solve number stories on multiplication up to 1-digit number.

## INFORMATION FOR TEACHERS

The teachers should be able to:

1. Recall multiplication table.
2. Solve real-life problems involving multiplication.



**DURATION / NO. OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Charts showing pictures, Textbook



## INTRODUCTION

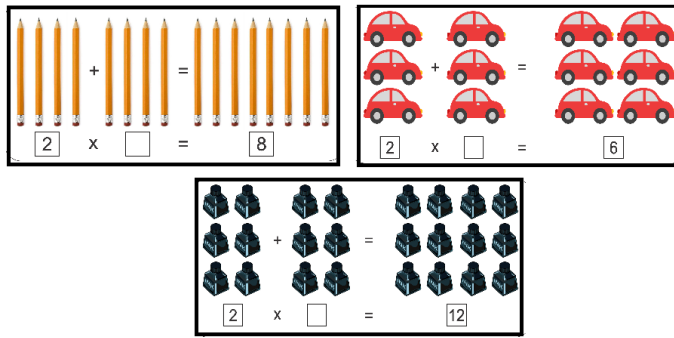
1. Write the following question on the board.  
*If Arif, Abid, and Aslam have got 3 toffees each from their father, how many times his father would have distributed the toffees?*  
i.e.  $3 \times \square = 9$
2. Ask the class to answer the question.
3. Take students' responses and write 3 in the box.
4. Tell students that in today's lesson they will learn to write a number sentence and solve number stories based on multiplication.



## DEVELOPMENT

### Activity 1:

1. Divide the class into three groups. Give each group a chart (or draw on the board) with one of the following pictures:



2. Ask each group to study their picture and complete the number sentence for multiplication.
3. Call each group one by one on the board.
4. Ask one student from each group to show their picture with the answer.
5. Ask other students to check the answer and comment if it is correct.
6. Guide where required.

### Activity 2:

1. Write the following number story on the board.  
*There are 4 friends. If each of them has 2 toffees, how many toffees they have altogether?*
2. Call four students from the class and give each student two toffees.
3. Ask them to tell one by one to the class the number of toffees they have.
4. Ask the class to write the given question in vertical form.

$$\begin{array}{r} 2 \\ \times 4 \\ \hline \end{array}$$

5. Ask one of the four students to multiply 2 with 4.
6. Take student's response and write the answer on the board.

$$\begin{array}{r} 2 \\ \times 4 \\ \hline 8 \end{array}$$



### CONCLUSION / SUM UP

Tell students that there are clue words that can help you to make a number sentence for multiplication. Such as Product, In all, Times, Altogether



### ASSESSMENT

1. Write the following questions on the board and ask students to answer them in their notebooks.
  - i. There are 4 flowerpots and each flowerpot has 3 flowers. How many flowers are there altogether?
  - ii. There are 2 classrooms and each classroom has 5 windows. Find the total number of windows.
2. Check students' work and guide them where necessary.



### HOMEWORK / FOLLOW UP

Do questions 5 to 8 on page 77 of the textbook.

## DIVISION



## STUDENT LEARNING OUTCOMES

1. Recognize division as successive subtraction.

## INFORMATION FOR TEACHERS

The teachers should know:

1. The symbol of division.
2. That division is successive subtraction.



**DURATION / NO. OF PERIODS: 35 MINUTES / PERIOD 1**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, 6 biscuits, 20 pencils, Textbook



## INTRODUCTION

1. Ask a volunteer to come on the board and draw the symbol for addition.
2. Take student's response. (Answer: +)
3. Call another student to come on the board and draw the symbol for subtraction.
4. Take student's response. (Answer: -)
5. Select a student randomly and ask him/her to draw the symbol for multiplication on the board.
6. Take student's response. (Answer: x)
7. Tell students that the way we have symbols for addition, subtraction, and multiplication, we also have a symbol for division.
8. Tell students that in today's lesson we will identify and use the symbol for division.



## DEVELOPMENT

## Activity 1:

1. Draw the symbol ' $\div$ ' on the board and tell students that this is the symbol for division.
2. Explain to students the use of the symbol with the help of the following example.  
Divide 12 toy cars among 3 boys, we will write it as  $12 \div 3$ .

3. Draw the following table on the board. Tell students that in the first column there are questions based on division.

Question without symbol	Question with symbol
Divide 16 toffees among 4 boys	
Divide 12 balloons among 3 children	
Divide 18 books among 6 students	
Divide 10 balls among 5 girls	

4. Make groups of four students. Ask each group to fill in the table in their notebooks.
5. Call a student from each group to write the answer of one question on the board.
6. Ask other groups to comment if the answers are correct or incorrect.

Question without symbol	Question with symbol
Divide 16 toffees among 4 boys	$16 \div 4$
Divide 12 balloons among 3 children	$12 \div 3$
Divide 18 books among 6 students	$18 \div 6$
Divide 10 balls among 5 girls	$10 \div 5$

7. Check students' responses and guide if required.



## CONCLUSION / SUM UP

Tell students that:

1. Division is successive subtraction.
2. It is denoted by the symbol ' $\div$ '

## DIVISION



## STUDENT LEARNING OUTCOMES

2. Recognize and use division symbols.



**DURATION / NO. OF PERIODS: 35 MINUTES / PERIOD 2**



## INTRODUCTION

1. Place a plate having 6 biscuits on the table.
2. Ask students the following question.  
*If we distribute 6 biscuits between 2 children, will each child get 6 biscuits or less than 6 biscuits?*
3. Take students' responses. Tell them that when we distribute something equally among two or more people, each person gets less than the total amount/number of things.
4. Tell students that in today's lesson they will learn how to distribute something equally among two or more people. The process is called 'division'.



## DEVELOPMENT

**Activity 2:**

1. Call any two students to stand in front of the class.
2. Place six biscuits on the table.
3. Pick up two biscuits and give one biscuit to each student.
4. Ask any one of the two students, how many biscuits are left on the table.
5. Take his/her response. Write the numbers in vertical form as shown below. Also, write the answer.

$$\begin{array}{r} 6 \\ - 2 \\ \hline 4 \end{array}$$

6. Tell the class that we will divide the remaining four biscuits again between these two students.
7. Pick up two biscuits and give one biscuit to each student.
8. Ask the class, how many biscuits are left on the table.
9. Take students' responses. Write 2 under the answer to the previous question as shown below:

$$\begin{array}{r} 6 \\ - 2 \\ \hline 4 \\ - 2 \\ \hline 2 \end{array}$$

10. Tell the class that we will divide the remaining two biscuits again between these two students.
11. Pick up two biscuits and give one biscuit to each student.
12. Ask the class, how many biscuits are left on the table.
13. Take students' responses. Write 2 under the answer to the previous question as shown below:

$$\begin{array}{r} 6 \quad 1^{\text{st}} \text{ time} \\ - 2 \\ \hline 4 \\ - 2 \quad 2^{\text{nd}} \text{ time} \\ \hline 2 \\ - 2 \\ \hline 0 \quad 3^{\text{rd}} \text{ time} \end{array}$$

14. Ask the class, how many biscuits do each student has now.
15. Take students' responses (answer: 3 biscuits) and tell them that both students have got an equal number of biscuits.
16. Ask the class, what mathematical sign they see in the questions (vertical form).
17. Take students' responses and tell them that at every step subtraction is taking place.
18. Tell students that division is the successive process of subtraction.

### Activity 3:

1. Take 20 pencils and tell students that we will divide these 20 pencils equally among 4 students using repeated division till we get zero.
2. Write the following on the board:

$$\begin{array}{r} 20 \\ - 4 \\ \hline 16 \end{array}$$

3. Separate 4 pencils from 20 pencils and put them aside as a set.
4. Repeat steps 2 and 3 as follows:

20	
- 4	
16	1 <sup>st</sup> time
- 4	
12	2 <sup>nd</sup> time
- 4	
8	3 <sup>rd</sup> time
- 4	
4	4 <sup>th</sup> time
- 4	
0	5 <sup>th</sup> time

5. Tell students that at the end we have 5 sets of 4 pencils which means if we divide 20 pencils among 4 students, each student will get 5 pencils.



## CONCLUSION / SUM UP

Tell students that:

1. When we distribute something equally among two or more people, each person gets less than the total amount/number of things.
2. The division is successive subtraction.



## ASSESSMENT

1. Write down the following question on the board.

Match the questions without symbols with their questions with symbols correctly.

Question without symbol	Question with symbol
Divide 15 apples among 3 children	$20 \div 5$
Divide 20 balloons among 5 girls	$14 \div 2$
Divide 24 books among 2 teachers	$15 \div 3$
Divide 14 balls among 2 boys	$24 \div 2$

2. Call four students one by one to solve the above question.
3. Ask the rest of the class to see and comment if the answers are correct.
4. Guide students where required.



## HOMEWORK / FOLLOW UP

Copy down the following questions in their notebooks and write them without symbols.

- i.  $8 \div 2$
- ii.  $24 \div 4$
- iii.  $27 \div 3$

**LESSON****35****UNIT 2: NUMBER OPERATIONS****DIVISION****STUDENT LEARNING OUTCOME**

- Divide numbers within the multiplication tables with remainder zero.

**INFORMATION FOR TEACHERS**

The teachers should be able to:

1. Divide numbers involving tables of 2, 3, 4, 5, and 10.
2. Divide a number completely so that remainder is zero.

**DURATION / NO. OF PERIODS: 35 MINUTES / 1 PERIOD****MATERIALS / RESOURCES REQUIRED**

- Board, Marker/Chalk, Duster, Flashcards showing division questions, Textbook

**INTRODUCTION**

1. Write the following number story on the board.  
*Ali has 12 pencils. He wants to divide them among 3 friends equally. How many pencils will each friend get?*
2. Call a student on the board and ask him/her to answer the question using the process of successive subtraction till he/she reaches zero.
3. Ask the rest of the class to see the steps of division and comment if it is correct.
4. Guide students where required.

$$\begin{array}{r}
 12 \\
 - 3 \\
 \hline
 9 \\
 - 3 \\
 \hline
 6 \\
 - 3 \\
 \hline
 3 \\
 - 3 \\
 \hline
 0
 \end{array}$$

5. Tell students that each friend will get 4 pencils.
6. Call another student on the board and write the given question using the symbol for division. (Answer:  $12 \div 3$ )
7. Take student's response and complete the equation by adding the answer.  
 $12 \div 3 = 4$
8. Tell students that in today's lesson they will learn about the number within the multiplication table of 2, 3, 4, 5, and 10 with remainder zero.



## DEVELOPMENT

### Activity 1:

1. Write the following question on the board.  
 $15 \div 3 = ?$
2. Ask a student to recall the table of 3.
3. Tell the student to stop when he/she reaches 15.

$$3 \times 1 = 3$$

$$3 \times 2 = 6$$

$$3 \times 3 = 9$$

$$3 \times 4 = 12$$

$$3 \times 5 = 15$$

4. Tell the whole class that as  $3 \times 5 = 15$  so the answer of  $15 \div 3$  will be 5.
5. Repeat steps 2 to 4 for the following question.

$$27 \div 3 = ?$$

### Activity 2:

1. Divide the class into five groups.
2. Give one flashcard to each group with one of the following questions.

$24 \div 4 = \square$	$40 \div 5 = \square$	$18 \div 2 = \square$
$80 \div 10 = \square$	$21 \div 3 = \square$	

- Ask each group to discuss and answer the given question and write the answer on the flashcard. Tell them to recall the tables they have learned earlier.
- Go to each group and check their response.
- Guide where required.



## CONCLUSION / SUM UP

Tell students that they can perform division by recalling the tables.



## ASSESSMENT

- Write the following questions on the board.

$$14 \div 2 = \square$$

$$15 \div 3 = \square$$

$$16 \div 4 = \square$$

$$10 \div 10 = \square$$

- Ask students to answer the questions in their notebooks.
- Call four students one by one on the board.
- Ask each student to answer one question.
- Check each response and guide where required.



## HOMEWORK / FOLLOW UP

Solve question 5 on page 88 of the textbook.

**Month**

**6**

**LESSON****36****UNIT 2: NUMBER OPERATIONS****DIVISION****STUDENT LEARNING OUTCOME**

- Solve number stories involving division up to 1-digit number.

**INFORMATION FOR TEACHERS**

The teachers should know:

1. That the concept of division is used in solving real-life situations.
2. Some clue words used for division. E.g., Shared, Divided, Equal, How many, Each will get.

**DURATION / NO. OF PERIODS: 35 MINUTES / 1 PERIOD****MATERIALS / RESOURCES REQUIRED**

- Board, Marker/Chalk, Duster, Textbook

**INTRODUCTION**

1. Write the following question on the board.  
 $20 \div 4$
2. Tell students, we will use these numbers to make it a word problem.
3. Ask the class to think of a real-life situation.
4. Take students' responses and write some ideas on the board.
5. Pick any one of the students' ideas and transform  $20 \div 4$  into a word problem.  
E.g., I have 20 books. If I distribute them among 4 students equally, how many books will each student get?
6. Tell students that in today's lesson they will learn to solve real-life problems involving division.

**DEVELOPMENT****Activity 1:**

1. Write the following clue words on the writing board:

How many will each get, share, distribute, divided.

2. Tell the class that when you come across these words in real life, you should know that you can solve that problem through division.
3. Write the following question on the board.  
*Saif has 14 balls. He wants to distribute them among his 2 friends equally. How many balls will each friend get?*
4. Tell students, we will write the numbers with symbols horizontally.

$$14 \div 2 = \underline{\hspace{2cm}}$$

5. Ask the class to recall the table of 2 and stop when reached 14.

$$2 \times 1 = 2$$

$$2 \times 2 = 4$$

$$2 \times 3 = 6$$

$$2 \times 4 = 8$$

$$2 \times 5 = 10$$

$$2 \times 6 = 12$$

$$2 \times 7 = 14$$

6. Tell students that  $2 \times 7 = 14$ , so the answer will be 14.

$$14 \div 2 = 7$$

7. Write the answer statement on the board and ask students to fill it.  
Each friend will get          balls.



## CONCLUSION / SUM UP

Tell students that:

1. To solve a word problem, write the figures in the question with symbols horizontally.
2. Recall multiplication tables.
3. Write the answer in the form of a statement.



## ASSESSMENT

1. Write the following question on the board.  
*Amjad has 5 children. He bought 15 toffees from the market. He distributed the toffees among his children equally. How many toffees did each child get?*

$$\boxed{\phantom{00}} \div \boxed{\phantom{00}} = \boxed{\phantom{00}}$$

2. Ask a volunteer to come on the board and answer the given question.
3. Ask the rest of the students to see the work and comment if the steps are correct.
4. Check student's response and guide where necessary.

**LESSON****37****UNIT 2: NUMBER OPERATIONS****DIVISION****HOMEWORK / FOLLOW UP**

Do questions 6 and 7 on page 88 of the textbook.

**STUDENT LEARNING OUTCOME**

- Solve real-life situations (using Pakistani currency as well) involving addition, subtraction, multiplication and division. Give reason for choosing the correct operations.

**INFORMATION FOR TEACHERS**

The teachers should know:

- correct operation of division using clue words.
- process of solving the questions in real-life stories (using Pakistani currency as well).

**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD****MATERIALS / RESOURCES REQUIRED**

- Board, Marker/Chalk, Duster, Chart showing clue words, 4 flashcards with different number stories, Chart with questions, Textbook

**INTRODUCTION**

1. Place the following chart showing one clue word for addition, subtraction, multiplication, and division used in number stories on the board.

**Clue words for addition**

**Clue words for subtraction**

<ul style="list-style-type: none"> <li>• Total</li> </ul>
---

<ul style="list-style-type: none"> <li>• Left</li> </ul>
--

Clue words for multiplication
<ul style="list-style-type: none"> <li>• Product</li> </ul>

Clue words for division
<ul style="list-style-type: none"> <li>• How many in each group</li> </ul>

2. Ask students to come up with more clue words.
3. Take students' responses and write in the chart.

Clue words for addition
<ul style="list-style-type: none"> <li>• Total</li> <li>• Altogether</li> <li>• In all</li> <li>• Sum</li> <li>• Added to</li> </ul>

Clue words for subtraction
<ul style="list-style-type: none"> <li>• Left</li> <li>• More than</li> <li>• How many less/fewer</li> <li>• Remain</li> <li>• Difference</li> </ul>

Clue words for multiplication
<ul style="list-style-type: none"> <li>• Product</li> <li>• Times</li> <li>• In all</li> <li>• Altogether</li> <li>• How many</li> </ul>

Clue words for division
<ul style="list-style-type: none"> <li>• How many in each group</li> <li>• Shared</li> <li>• Divided</li> <li>• Equal / Equally</li> </ul>

4. Read out all the clue words on the chart and describe their meanings to the class.
5. Tell students that these clue words tell us which mathematical operation should be used to solve the question/problem.



## DEVELOPMENT

### Activity 1

1. Divide the class into four groups.
2. Give each group the following set of four flashcards.

#### Flashcard 1

If we distribute 12 rupees to 3 children equally, how many rupees will each child get?

Clue words : \_\_\_\_\_

Operation : \_\_\_\_\_

Solution :

\_\_\_\_\_

### Flashcard 2

Ahsan bought biscuits for 12 rupees and Hareem bought biscuits for 15 rupees. What is the total amount of money they have spent altogether?

Clue words : \_\_\_\_\_

Operation : \_\_\_\_\_

Solution :

\_\_\_\_\_

### Flashcard 3

Saif reads 10 pages of a book daily. How many pages will he read in 7 days?

Clue words : \_\_\_\_\_

Operation : \_\_\_\_\_

Solution :

\_\_\_\_\_

### Flashcard 4

Sidra had 30 color pencils. She gave 12 pencils to her friend. How many pencils are left with Sidra?

Clue words : \_\_\_\_\_

Operation : \_\_\_\_\_

Solution :

\_\_\_\_\_

3. Ask each group to read the number stories and discuss.
4. To answer the given question, ask each group to:
  - i. Underline the clue words in the question and write in the space provided.
  - ii. With the help of clue words, identify the mathematical operation to be used and write in the space provided.
  - iii. Write the the answer on the given flashcard.

5. Go to each group and guide students where required.
6. Collect the flashcards from all the groups.
7. Paste these flashcards on the walls of the classroom.
8. Ask students to come and read the work of each other.



## CONCLUSION / SUM UP

Tell students that to solve a real-life story follow the given steps.

Step 1: Read the number stories carefully.

Step 2: Underline the clue words to identify the operation.

Step 3: Write the number sentence.

Step 4: Write the answer.



## ASSESSMENT

1. Paste the following table on the board and ask students to tick (✓) the correct answer.

Question	Tick (✓) the correct answer	
Hamid eats 3 bananas daily. How many bananas he will eat in 10 days?	<input type="checkbox"/> 13	<input type="checkbox"/> 30
Sarim eats 12 bananas in 4 days. How many bananas does he eat each day?	<input type="checkbox"/> 3	<input type="checkbox"/> 16

2. Check students' answers.
3. Guide students where required.



## HOMEWORK / FOLLOW UP

Do questions 1-4 on page 90 of the textbook.

## FRACTIONS



## STUDENT LEARNING OUTCOMES

- Recognize fractions as equal parts of a whole.
- Identify half, one third and quarter with the help of objects and figures (without writing  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$ ).

## INFORMATION FOR TEACHERS

The teachers should know that:

1. Equal parts have the same shape and size.
2. The concept of fractions using teaching aids.



**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD**



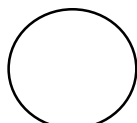
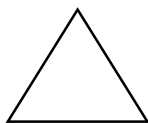
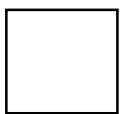
## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Flashcards, Paper cuttings showing different shapes (square, triangle, round, rectangle), Textbook



## INTRODUCTION

1. Call three students to come and stand in front of the class.
2. Give one of the following shapes (made of paper) to each student.



3. Ask each student to divide his/her shape into two equal parts and show it to the class.

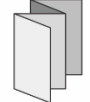
Guide students in folding the paper shapes as shown in the box (Hint).

4. Draw the following shapes on the board showing a line in the centre.

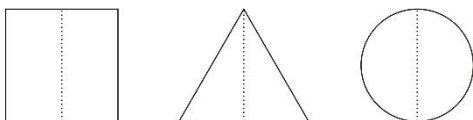
**Hint:** To divide square, rectangle, triangle and circle into half, one third, one forth, cut a paper in the above shapes then fold as:



Half-Fold

Tri-Fold  
(3-Panel Roll Fold)Z-Fold  
(3-Panel Accordion Fold)

4-Panel Accordion Fold



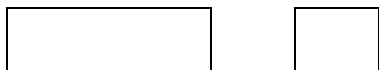
5. Tell students that in today's lesson they will learn about fractions as equal parts of a whole.



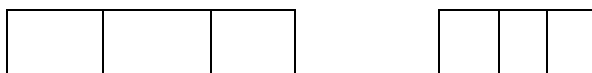
## DEVELOPMENT

### Activity 1:

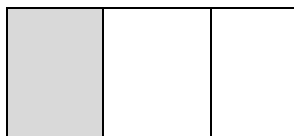
1. Divide the class into 2 groups.
2. Take two rectangular pieces of paper of different sizes.
3. Give group 1 a bigger rectangular piece of paper than group 2.



4. Ask both groups to divide the given paper into three equal parts by folding.
5. Take those rectangular papers from both groups and paste them on the board.



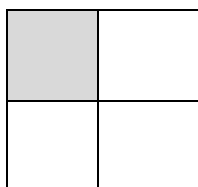
6. Ask group 1, how many equal parts do you see in your rectangular paper?
7. Take their collective response and write 3 on the board.
8. Ask group 2, if we colour one part of the three parts, how would you read it.



9. Take their collective response. Tell students that if one part is shaded out of three, it is called one-third of the whole.

### Activity 2:

1. Take a square-shaped piece of paper.
2. Divide the paper into four equal parts.
3. Ask the class, how many equal parts do you see in this square?
4. Take students' responses and tell them that there are four equal parts.
5. Ask students, if we colour one part of the four parts, how would you read it.



6. Take students' responses. Tell students that if one part is shaded out of four, it is called one-fourth of the whole or one quarter.



## CONCLUSION / SUM UP

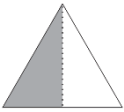
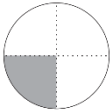

Tell students that:

1. Fractions as equal parts of a whole.
2. If a shape or an object is divided into two equal parts, each part is called half of the whole.
3. If one part of a shape or an object is shaded out of three, it is called one-third of the whole.
4. If one part of a shape or an object is shaded out of four, it is called one-fourth of the whole or one-quarter.



## ASSESSMENT

1. Draw the following table on the board:

	Half
	
	

2. Ask students to copy down the given table in their notebooks.
3. Ask students to write the fraction form of the shaded parts of the given figures. (One is done for you.)
4. Check students' responses and guide where required.



## HOMEWORK / FOLLOW UP

Do question 2 of exercise 1 on page 102 of the textbook.

# FRACTIONS



## STUDENT LEARNING OUTCOMES

1. Represent half, one-third, and a quarter in numerical form ( $\frac{1}{2}$ ,  $\frac{1}{3}$ , and  $\frac{1}{4}$ ).
2. Shade the equal parts of a given figure to match a given fraction.

## INFORMATION FOR TEACHERS

The teachers should know:

1. Fractions are equal parts of the whole.
2. How to write a numerical representation of half, one-third, and quarter.



**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD**



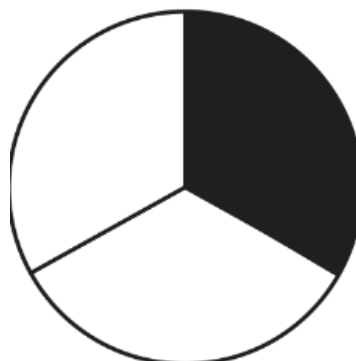
## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, 3 rectangular pieces of cards, Textbook



## INTRODUCTION

1. Ask the following question to the class.  
If 3 friends want to divide a cake equally, what would they do?
2. Take students' responses and tell them that first, they will count their number (i.e., 3) and then will divide the cake into the same numbers of equal pieces.
3. Draw the following diagram on the board.



4. Ask students to look at the given diagram and tell how many equal parts are there.
5. Take students' responses and write 3 on the board.
6. Ask students, how many parts are shaded.
7. Take students' responses and write 1 on the board.
8. Ask students, suppose that the given diagram is of the cake, how much cake will each friend get.
9. Take students' responses and write one-third.
10. Ask students, how can we write it in fraction form. Tell students that the number above the line shows how many parts you have and the number below the line shows how many equal parts the whole is divided into.
11. Take students' responses and write  $\frac{1}{3}$
12. Tell students that in today's lesson they will learn how to present different forms of fractions in numerical form.



## DEVELOPMENT




### Activity 1:

1. Divide the class into three groups.
2. Take three rectangular pieces of cards and give one to each group.
3. Assign the task to each group as follows:  
 Group 1: Divide the card into two equal parts and shade one part  
 Group 2: Divide the card into three equal parts and shade one part  
 Group 3: Divide the card into four equal parts and shade one part
4. Meanwhile, draw the following table on the board.

Group No.	Paste the card	Represent the shaded part in words	Represent the shaded part in fraction form
1			
2			
3			

5. Call one student from each group to paste their card into the table.
6. Call another student from each group and ask him/her to represent the shaded part in the form of a fraction (in words and fraction form).
7. Guide students' where required.

Group No.	Paste the card	Represent the shaded part in words	Represent the shaded part in fraction form

1		One out of two or half of the whole	$\frac{1}{2}$
2		One out of three or One-third of the whole	$\frac{1}{3}$
3		One out of four or One-fourth of the whole	$\frac{1}{4}$



## CONCLUSION / SUM UP



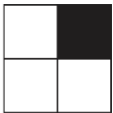
Tell students that:

1. Half of the whole is written as  $\frac{1}{2}$
2. One-third of the whole is written as  $\frac{1}{3}$
3. One-fourth of the whole is written as  $\frac{1}{4}$



## ASSESSMENT

1. Draw the following table on the board and ask students to copy it in their notebooks.
2. Ask them to look at the diagrams in column A and represent their shaded parts as fractions in column B.

Column A	Column B
	
	
	

3. Check students' responses and guide where required.



## HOMEWORK / FOLLOW UP

Do question 2 on page 106 of the textbook.



## FRACTIONS



## STUDENT LEARNING OUTCOMES

- Recognize and name unit fractions up to  $\frac{1}{10}$ .
- Recognize fractions like two-thirds ( $\frac{2}{3}$ ), three-fourths ( $\frac{3}{4}$ ), four-fifths ( $\frac{4}{5}$ ) up to nine-tenths ( $\frac{9}{10}$ ).

## INFORMATION FOR TEACHERS

The teachers should know:

1. name and diagram of unit fraction up to  $\frac{1}{10}$ .
2. numerical form of fractions like two-thirds ( $\frac{2}{3}$ ), three-fourths ( $\frac{3}{4}$ ), four-fifths ( $\frac{4}{5}$ ) up to nine-tenths ( $\frac{9}{10}$ ).



**DURATION / NO OF PERIODS: 35 MINUTES / PERIOD 1**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, 9 Rectangular cards, 8 Round flashcards, Textbook



## INTRODUCTION

1. Ask students the following question.  
How can we represent half numerically?
2. Take students' responses and write  $\frac{1}{2}$  on the board.
3. Ask students the following question.  
How can we represent one-third numerically?  
Take students' responses and write  $\frac{1}{3}$  on the board.
4. Ask students the following question.  
How can we represent one-fourth numerically?
5. Take students' responses and write  $\frac{1}{4}$  on the board.

- Tell students that in today's lesson they will learn about more fractions and their representation.







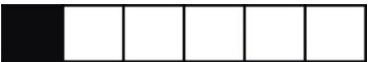

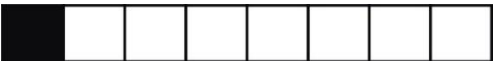

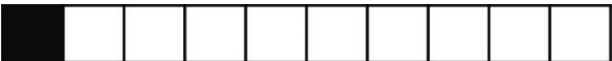
## DEVELOPMENT

### Activity 1:

- Divide the class into 9 groups and give them group numbers from 2 to 10.
- Give one rectangular piece of card to each group.
- Ask students of all groups to divide their cards into equal parts as per their group number.  
E.g., Group 2 will divide the card into two equal parts, Group 3 will divide the card into three equal parts and so on.
- Let all the groups complete the above step.
- Ask each group to shade only one part of the whole.
- Meanwhile, draw the following table on the board.

Group No.	Paste the card	Number of Parts	Name of Fraction	Fraction in numerals
2				
3				
4				
5				
6				
7				
8				
9				
10				

- Call one student from group 2 to paste their card into the table.
- Call another student from group 2 and ask him/her to write the number of parts of the card, name of fraction and fraction in numerals in the table. For writing in numerals, tell students that the number above the line shows how many parts you have shaded and the number below the line shows how many equal parts the whole is divided into. Guide students' where required.
- Repeat steps 7 to 9 with the rest of the groups (3-10).

Group No.	Paste the card	Number of Parts	Name of Fraction	Fraction in numerals
2		2	One out of two parts or half	$\frac{1}{2}$
3		3	One out of three parts or one-third	$\frac{1}{3}$
4		4	One out of four parts or one-fourth	$\frac{1}{4}$
5		5	One out of five parts or one-fifth	$\frac{1}{5}$
6		6	One out of six parts or one-sixth	$\frac{1}{6}$
7		7	One out of seven part or one-seventh	$\frac{1}{7}$
8		8	One out of eight parts or one-eighth	$\frac{1}{8}$
9		9	One out of nine parts or one-ninth	$\frac{1}{9}$
10		10	One out of ten parts or one-tenth	$\frac{1}{10}$



## CONCLUSION / SUM UP

Tell students that the number above the line shows how many parts you have and the number below the line shows how many equal parts the whole is divided into.


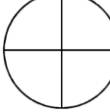

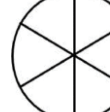
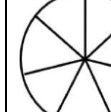
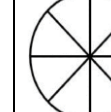
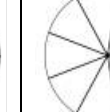
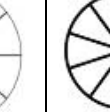
## FRACTIONS

**DURATION / NO OF PERIODS: 35 MINUTES / PERIOD 2****INTRODUCTION**

- Ask students how do we write the following in fraction form?
  - Half
  - One-third
  - One-sixth
  - One-tenth
- Take students' responses and tell them that in today's lesson, we will learn about some more ways of representing fractions.

**DEVELOPMENT****Activity 2:**

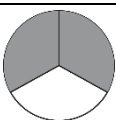
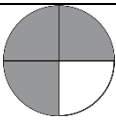
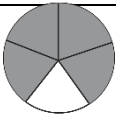
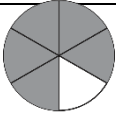
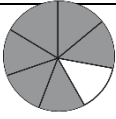
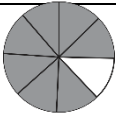
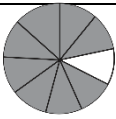
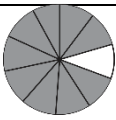
- Divide the class into 8 groups and name them as 3, 4, 5, .... 10.
- Take 8 round flashcards showing divisions (from 3 to 10).

							
Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10

- Give one flashcard to each group showing number of divisions as per their group name.
- Instruct the groups as follows:
  - Group 3 to shade only 2 parts out of 3
  - Group 4 to shade only 3 parts out of 4
  - Group 5 to shade only 4 parts out of 5
  - Group 6 to shade only 5 parts out of 6
  - Group 7 to shade only 6 parts out of 7
  - Group 8 to shade only 7 parts out of 8
  - Group 9 to shade only 8 parts out of 9
  - Group 10 to shade only 9 parts out of 10
- Let the groups complete their work.
- Meanwhile, draw the following table on the board.

Group No.	Figure	Total Parts	Shaded Parts	Name of Fraction	Fraction
3					
4					

7. Call one student from each group to paste their flashcard into the table.
8. Call another student from each group and ask him/her to fill in the rest of the columns in the table.
9. Tell students to fill the table as follows:
  - i. Count the total number of parts in their flashcard and write in the table.
  - ii. Count the number of shaded parts in their flashcard and write in the table.
  - iii. Write the name of the fraction in words.
  - iv. Write the fraction.

Group No.	Figure	Total Parts	Shaded Parts	Name of Fraction	Fraction
3		3	2	Two-third	$\frac{2}{3}$
4		4	3	Three-fourth	$\frac{3}{4}$
5		5	4	Four-fifth	$\frac{4}{5}$
6		6	5	Five-sixth	$\frac{5}{6}$
7		7	6	Six-seventh	$\frac{6}{7}$
8		8	7	Seven-eighth	$\frac{7}{8}$
9		9	8	Eight-Ninth	$\frac{8}{9}$
10		10	9	Nine-tenth	$\frac{9}{10}$

10. Check the responses of each group.
11. Guide where required.



## CONCLUSION / SUM UP

1. Conclude the activity by explaining the representation of fractions through shaded figures and numerically.
2. Tell them that today we have learnt about unit fractions and other fractions like  $\frac{2}{3}$ ,  $\frac{3}{4}$ ,  $\frac{4}{5}$ .



## ASSESSMENT

1. Divide the class into six groups.
2. Give each group the following worksheet.

Match the figures showing shaded fractions in column A with their correct fraction form in column B.

A	B
	$\frac{4}{5}$
	$\frac{3}{4}$
	$\frac{5}{6}$
	$\frac{2}{3}$

3. Call a student from each group to show their answers to the class.
4. Check students' responses and guide if required.



## HOMEWORK / FOLLOW UP

Do questions 3, 4 and 5 on pages 106 and 107 of the textbook.

## LENGTH



## STUDENT LEARNING OUTCOME

- Compare the length of different objects.

## INFORMATION FOR TEACHERS

The teachers should know how to measure the length of different objects.



**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Textbook



## INTRODUCTION

Call some students and ask them to stand in front of the class in a line.

1. Ask the class, who is the tallest student in the line.
2. Take students' responses.
3. Ask the class, who is the shortest student in the line.
4. Take students' responses.
5. Tell students that we can differentiate various objects by considering their lengths and size. Tell the students that in today's lesson we will compare the length of different objects.



## DEVELOPMENT

## Activity 1:

1. Ask students to look at the door and window of the classroom and observe, which is longer than the other.
2. Take students' responses and tell them that to find the length of objects we look at them horizontally. If we look at the door and window horizontally, the window is longer than the door (or if the door is longer, say so).

### Activity 2:

1. Ask students to compare the length of their pencils with their rulers and tell which one is shorter.
2. Ask all the students one by one to hold their pencils and rulers up to show their length and tell which one is shorter.
3. Check students' responses.
4. Guide where required.



### CONCLUSION / SUM UP

1. Tell students that different objects can be compared based on their lengths.



### ASSESSMENT

1. Ask students to compare the length of their Mathematics textbook with their English textbook and find out which one is longer.
2. Write the answer in their notebooks.
3. Check students' responses.
4. Guide where required.



### HOMEWORK / FOLLOW UP

Ask students to compare the length of water glass and jug at their homes to find out which one is longer. Note down the response in their notebooks.

# LENGTH



## STUDENT LEARNING OUTCOMES

1. Recognize the units of length (meter and centimetre).
2. Use standard metric units of length (meter and centimetre and their abbreviation to measure and record lengths of a variety of objects.

## INFORMATION FOR TEACHERS

The teachers should know:

1. Basic units of length (meter and centimetre)
2. Abbreviations of meter (m) and centimetre (cm)



**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Chalk/Marker, Duster, Chart showing ruler, Textbook, Pen, Pencil



## INTRODUCTION

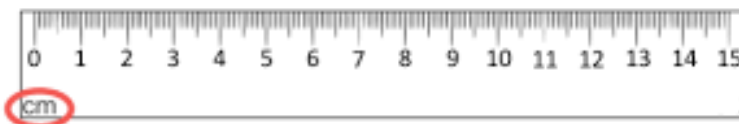
1. Ask students to recall how to find the length of different objects.
2. Take students' responses.
3. Show a pen and a pencil of similar length to the students and ask, which one is longer than the other?
4. Take students' responses. (Some may say pen and some may say pencil)
5. Tell students that to measure the exact length of objects, there are standard units and in today's lesson we will study about the standard units of length and their uses.



## DEVELOPMENT

### Activity 1:

1. Paste the following chart showing the ruler on the board.



2. Tell students that we use a ruler to find out the length of small objects.

3. Draw students' attention towards the red circle and tell them that this is centimeter. It is the unit in which length is measured and is written as 'cm'.
4. Tell students that the numbers on the ruler (1-15) tell us length in cm. The ruler is divided into 15 equal parts and each part is equal to 1 cm. E.g., 1 cm, 2cm, 3cm, and so on.
5. Ask students, can we measure the length of the desk using this ruler.
6. Take students' responses and tell them that for bigger things we have a bigger unit, meter. It is written as 'm'.  $1\text{ m} = 100\text{ cm}$

### Activity 2:

1. Ask students to take out some objects from their stationery box. E.g., pencil, eraser, sharpener.
2. Ask them to take out their rulers and place the eraser next to the ruler at point 0.
3. Ask them to note the point where the length of the eraser ends.
4. Take students' responses and tell them that if your eraser ends at point 2 on the ruler, it means it is 2cm long.
5. Repeat steps 2-4 using a sharpener and pencil.



### CONCLUSION / SUM UP

Tell students that:

1. The unit of length is centimetre (cm) and metre (m).
2. To measure the length of small things, we use 'cm' whereas, to measure the length of bigger things we use 'm'.



### ASSESSMENT

1. Write the following question on the board.

*In the given objects, which one will be measured in metres and which one will be measured in centimetres? Write your answer in the table below.*

Object	cm or m
Pencil	
Tree	
Book	
Lunchbox	
Door	

2. Check students' responses.
3. Guide students where required.



### HOMEWORK / FOLLOW UP

Do exercise 1 on page 111 of the textbook.

**Month**

**7**

## LENGTH



## STUDENT LEARNING OUTCOME

- Use addition and subtraction within 100 to solve real-life situations involving length in the same unit.

## INFORMATION FOR TEACHERS

The teachers should know how to add and subtract lengths having the same units within 100.



**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Textbook, Ruler



## INTRODUCTION

1. Take a book and a notebook from a student and measure their lengths using a ruler.
2. Write the lengths on the board for example book is 9 cm long and the notebook is 6 cm. Emphasize that the unit of measurement is the same i.e., cm.
3. Ask students, if we want to find out how much longer is the book from the notebook, what should we do.
4. Take students' responses and tell them that we can add and subtract these as long as the unit of measurement is the same.
5. Tell students that in today's lesson we will learn about the addition and subtraction of the lengths of objects in the same units.



## DEVELOPMENT

## Activity 1:

1. Write the following question on the board.

*The length of one wall of a classroom is 25 m and the length of the other wall of the classroom is 18 m. What is the total length of the walls?*

2. Tell students to read the question and pick out the clue word.
3. Take students' responses and underline the clue word 'total' in the question.
4. Ask students, which mathematical operation will be carried out in this question.
5. Take students' responses and write 'addition' on the board.
6. Ask students to answer the question in their notebooks.
7. Guide the students where needed.
8. Write another question on the board.

*The length of window 1 of a room is 12m and the length of window 2 of the room is 8m.  
How short is window 2 from window 1?*

9. Tell students to read the question and pick out the clue word.
10. Take students' responses and underline the clue word 'how short' in the question.
11. Ask students, which mathematical operation will be carried out in this question.
12. Take students' responses and write 'subtraction' on the board.
13. Ask students to answer the question in their notebooks.
14. Guide students if required.

### Activity 2:

1. Write the following question on the board.

There are two ropes; one is yellow and the other is red.

The length of yellow rope is = 67cm

The length of red rope is = 45cm

The difference in length of these ropes =  -  =

2. Ask students to copy down the question in their notebooks.
3. Ask students to work in pairs and answer the question.
4. Check the responses of each pair.
5. Guide students where required.



### CONCLUSION / SUM UP

1. At the end of the lesson tell students that we have learned how to add and subtract different lengths in the same units.



## ASSESSMENT

1. Write the following questions on the board and ask the students to copy and complete them in their notebooks.

$$\begin{array}{r} \text{(i)} \quad 65m \\ + \quad 33m \\ \hline \end{array} \qquad \begin{array}{r} \text{(ii)} \quad 77cm \\ - \quad 35cm \\ \hline \end{array}$$

2. Check students' responses.
3. Guide students where required.



## HOMEWORK / FOLLOW UP

Do exercise 2 on page 114 of the textbook.

## MASS



## STUDENT LEARNING OUTCOME

- Compare the mass of different objects.

## INFORMATION FOR TEACHERS

The teachers should be able to compare masses of different objects.



**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Chart showing objects of different masses, Textbook



## INTRODUCTION

1. Select a student randomly and ask him/her to stand in front of the class.
2. Give a small packet of biscuits in his/her one hand and a filled water bottle in the other hand.
3. Ask him to tell the class which one is heavier.
4. Take his/her response.
5. Tell the class that when comparing two things based on mass, we use the terms 'heavier' or 'lighter'.
6. Tell students that we can differentiate various objects by considering their mass and in today's lesson we will compare the mass of different objects.



## DEVELOPMENT

## Activity 1:

1. Make pairs of students and ask them to take out their water bottles.
2. In each pair, ask one student to hold his/her bottle in one hand and his/her friend's bottle in the other hand. Tell which of the two bottles is heavier.
3. Ask the other student (of the pair) to repeat the activity.
4. Take responses of both students in each pair.

## Activity 2:

1. Call four students to stand in front of the class with their bags.
2. Ask each student to hold his/her bag for a while and put it down. Next, he/she should hold the bags of the rest of his three friends one by one.
3. Ask him/her to guess which bag is the heaviest and which one is the lightest.
4. Take students' responses.
5. Tell students that we can compare four bags based on their mass.




### CONCLUSION / SUM UP

1. Tell students that when comparing two things based on mass, we use the terms 'heavier' or 'lighter'.




### ASSESSMENT

1. Paste the following chart on the board.



A toffee is \_\_\_\_\_ (heavier/lighter) than an apple.



A football is \_\_\_\_\_ (heavier/lighter) than a banana.

2. Call two students one by one on the board to fill in one blank.
3. Ask the rest of the class to check the answers and comment if they are correct.
4. Guide students where necessary.



### HOMEWORK / FOLLOW UP

Ask students to compare the mass of different objects at home as follows:

- i. Select any two objects at home.
- ii. Draw their pictures in the notebook.
- iii. Compare the masses of both objects by holding one object in right hand and the other object in left hand.
- iv. Note down which one is heavier.

# MASS



## STUDENT LEARNING OUTCOMES

- Recognize the units of mass i.e., kilogram and gram.
- Use standard metric units of mass (kilogram and gram) and their abbreviation to measure and record mass of variety of objects.

## INFORMATION FOR TEACHERS

The teachers should know:

1. Basic units of mass (gram and kilogram).
2. Abbreviations of a gram (g) and kilogram (kg).



**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Chalk/Marker, Duster, Chart showing weighing balance and weighing machine, Textbook



## INTRODUCTION

1. Ask students to recall how to compare the mass of two objects.
2. Take students' responses and write 'heavier' or 'lighter' on the board.
3. Tell students that in today's lesson they will learn about the standard units of mass and their uses.



## DEVELOPMENT

### Activity 1:

1. Ask students what is the unit of length.
2. Take students' answers and write 'cm' and 'm' on the board.
3. Tell students that mass is measured in 'gram' and 'kilogram'. For lighter objects gram is used and for heavier objects kilogram is used. The symbol 'g' is used for gram and the symbol 'kg' is used for kilogram.

- Write the names of some objects on the board and ask students to tell whether these will be measured in gram or kilogram. For example, school bags, toffees, biscuits, etc.
- Take students' responses and guide where required.

### Activity 2:

- Paste the following chart showing the weighing balance and weighing machine on the board.



Weighing balance



Weighing machine

- Tell students that we use different types of balances and weighing machines to measure the mass of different objects.



### CONCLUSION / SUM UP

Tell students that:

- The unit of mass is gram (g) and kilogram (kg).
- To measure the mass of small things, we use 'g' whereas, to measure the mass of bigger things we use 'kg'.
- Different types of weighing balances and weighing machines are used to measure the mass of different objects.



### ASSESSMENT

- Write the following question on the board.

*In the given objects, which one will be measured in g and which one will be measured in kg? Write your answer in the table below.*

Object	g or kg
School bag	
A pack of sugar	
Pencil	
Shirt	
Door	

2. Check students' responses.
3. Guide students where required.



## **HOMEWORK / FOLLOW UP**

Do question 1 of exercise 3 on page 117 of the textbook.

## MASS



## STUDENT LEARNING OUTCOME

- Use addition and subtraction within 100 and solve real-life situations involving mass in the same units.

## INFORMATION FOR TEACHERS

The teachers should know how to add and subtract mass having the same units within 100.



**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Textbook



## INTRODUCTION

1. Show a book and a notebook to the students and tell them to suppose the mass of the book is 350 g and the mass of the notebook is 100 g. Both are measured in the same unit i.e., g.
2. Write this information on the board.
3. Ask students, if we want to find out how much heavier is the book from the notebook, what should we do.
4. Take students' responses and tell them that we can add and subtract these as they are in the same unit (g).
5. Tell students that in today's lesson we will learn about the addition and subtraction of the masses of objects in the same units.



## DEVELOPMENT

## Activity 1:

1. Write the following question on the board.  
*The mass of Aslam's school bag is 3 kg and the mass of Hina's school bag is 2 kg. What is the total mass of both bags?*
2. Tell students to read the question and pick out the clue word.
3. Takes students' responses and underline the clue word 'total' in the question.

4. Ask students, which mathematical operation will be carried out in this question.
5. Take students' responses and write 'addition' on the board.
6. Ask students to answer the question in their notebooks.
7. Guide them where needed.
8. Write another question on the board.

*The mass of a packet of biscuits is 550 g and the mass of a packet of sugar is 750 g. Find out the difference in the mass of both packets.*

9. Tell students to read the question and pick out the clue word.
10. Take students' responses and underline the clue word 'difference' in the question.
11. Ask students, which mathematical operation will be carried out in this question.
12. Take students' responses and write 'subtraction' on the board.
13. Ask students to answer the question in their notebooks.
14. Guide students if required.

### Activity 2:

1. Write the following question on the board:

There are two bags; one is green and the other is blue. The mass of green bag is 956 g and the mass of blue bag is 625 g. Find out the difference in the masses of both bags.

The mass of green bag is  $\quad\quad\quad = 956 \text{ g}$

The mass of blue bag is  $\quad\quad\quad = 625 \text{ g}$

The difference in mass of both bags =  $\boxed{\quad\quad\quad} - \boxed{\quad\quad\quad} = \boxed{\quad\quad\quad}$

2. Ask students to copy down the question in their notebooks.
3. Ask students to work in pairs and answer the question.
4. Check the responses of each pair.
5. Guide students where required.



### CONCLUSION / SUM UP

1. Tell students that we have learned how to add and subtract the different masses of the objects. To be able to add or subtract mass, both masses should be in the same unit i.e., in g or kg.



### ASSESSMENT

1. Write the following questions on the board and ask students to answer them in their notebooks.
  - i. Mass of potatoes = 20 kg  
 Mass of tomatoes = 30 kg  
 The total mass of potatoes and tomatoes = \_\_\_\_\_ kg
  - ii. Mass of a pack of toffees = 80 g

Mass of a pack of biscuits = 50 g

The difference in the mass of both things = \_\_\_\_\_ g

2. Check students' responses.
3. Guide students where required.



## **HOMEWORK / FOLLOW UP**

Do exercise 4 on page 119 of the textbook.

# CAPACITY



## STUDENT LEARNING OUTCOME

- Compare the capacity of different objects using non-standard units (jug, glass, cup, etc.).

## INFORMATION FOR TEACHERS

The teachers should be able to compare the capacity of different objects.



**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Jug, Glass, Cup, Bucket, Bowl, Chart showing containers, Textbook



## INTRODUCTION

1. Bring an empty jug and three glasses full of water to the class.
2. Pour water from the three glasses into the jug in front of the students.
3. Tell students that the jug holds more water than a glass or a glass holds less water than the jug. Hence, it can be seen that the capacity of the jug is more than the glass.
4. Tell students that in today's lesson they will learn how to compare the capacity of different objects.









## DEVELOPMENT

### Activity 1:

1. Call a student to come to the front of the class.
2. Give him/her a bucket full of water and an empty bowl.
3. Ask him/her to fill the bowl with water taken from the bucket.
4. Ask the class, which container, bucket or bowl, has more capacity than the other.
5. Take students' responses and tell them that we can fill many bowls with water from the bucket hence the bucket can hold more water and has more capacity.

### Activity 2:

1. Draw the following chart on the board (or prepare it before the class and paste it on the board):

Q. No.	Container
1	 
2	 
3	 

- Tell students that they have to circle the container which has more capacity than the other. E.g., in the first case, tell which container, the bowl or the basket, has more capacity.
- Select a student randomly and ask him/her to write the answer to the first question in the table.
- Ask the class to comment if the answer is correct.
- Guide where required.
- Repeat steps 3-5 for questions 2 and 3.



## CONCLUSION / SUM UP

Tell students that we have learned the comparison of different objects based on capacity using observation.



## ASSESSMENT

- Draw the following objects on the board:



Beaker



Glass



Cup

- Ask the class, which container can hold the largest amount of water.
- Take students' responses and write on the board that the beaker can hold the largest amount of water.
- Ask the class, which container can hold the smallest amount of water.
- Take students' responses and write on the board that the cup can hold the smallest amount of water.



## HOMEWORK / FOLLOW UP

Compare the capacity of different objects at your home and record results in your notebook.

# CAPACITY



## STUDENT LEARNING OUTCOME

- Recognize and use the standard metric units of capacity i.e., liter and milliliter.

## INFORMATION FOR TEACHERS

The teachers should know:

1. Basic units of capacity (liter and milliliter)
2. Abbreviations of liter (l) and milliliter (ml)



## DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Chart showing questions, Textbook



## INTRODUCTION





1. Ask students to recall how to compare the capacity of two containers.
2. Take students' responses and write 'more capacity' or 'less capacity' on the board.
3. Tell students that in today's lesson they will learn about the standard units of capacity and their uses.



## DEVELOPMENT

### Activity 1:

1. Ask students the following question.  
*A bucket holds more water than a glass. How can we find, how much more water the bucket holds?*
2. Take students' responses. Tell them that to measure the capacity of the container, we need the standard units of capacity. Litre is the standard unit of capacity. The symbol 'l' is used for litre. Water, milk, and oil are measured in litres. Millilitre is also the standard unit of capacity. The symbol 'ml' is used for millilitre. It is used to measure the capacity of small containers. The capacity of a cup and glass is measured in millilitres.
3. Draw the following containers on the board and ask students which container measures in litre (l) and which in millilitre (ml).

- a. The capacity of a cup 
  - b. The capacity of a jug 
  - c. The capacity of an oil bottle 
  - d. The capacity of an inkpot 
4. Select four students randomly.
  5. Ask each student to come on the board one by one and fill in one blank.
  6. Take students' responses. Ask the rest of the class to check and comment if the answers are correct.
  7. Guide students where required.



## CONCLUSION / SUM UP

Tell students that:

1. The unit of capacity is litre (l) and millilitre (ml).
2. To measure the capacity of small things, we use 'ml' whereas, to measure the capacity of bigger things we use 'l'.



## ASSESSMENT

1. Paste the following chart on the board.
  - i. Tick the containers whose capacity is measured in millilitre (ml).



**Gallon**



**Bucket**



**Coffee**

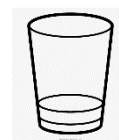
- ii. Encircle the container whose capacity is measured in litre (l).



**Spoon**



**Oil Bottle**



**Glass**

2. Call two students to come on the board and answer each question.
3. Take students' responses.
4. Guide students where required.



## HOMEWORK / FOLLOW UP

Do question 2 of exercise 5 on page 122 of the textbook.

## CAPACITY



## STUDENT LEARNING OUTCOME

- Use addition and subtraction within 100 to solve real-life situations involving capacity in the same units.

## INFORMATION FOR TEACHERS

The teachers should know how to add and subtract capacity having the same units within 100.



## DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Container, one 2-litre Beaker, two 1 litre bottles of water, Textbook



## INTRODUCTION

1. Bring a 2-litre beaker and two 1 litre bottles of water into the class and place them on the table.
2. Pick up one of the two bottles of water and pour its water into the beaker.
3. Ask anyone student to come to the table and read the mark to which water is filled in the beaker.
4. Take student's response and tell the class that it is 1 litre of water.
5. Pick up the other bottle of water and pour its water into the same beaker.
6. Ask any student to come to the table and read the mark to which water is filled in the beaker.
7. Take student's response and tell the class that it is 2-litre of water.
8. Tell students that in today's lesson they will learn how to add and subtract capacity within 100 in real-life situations.



## DEVELOPMENT

## Activity 1:

1. Write the following question on the board.  
*Ahsan lives in a village. His buffalo gives 16 litre milk in the morning and 23 litre milk in the evening. How much milk does his buffalo give in a day?*

2. Ask students, which mathematical operation will be used to answer the given question.
3. Take students' responses.
4. Guide students where necessary.
5. Write the solution on the board as follows: (Explain each step to the class)  
Milk in the morning = 16 litres  
  
Milk in the evening = 23 litres  
  
Total milk in a day =  $16 + 23 = ?$
6. Call any student and ask him/her to write the answer on the board.
7. Take his/her response.
8. Guide the student if required.

### Activity 2:

1. Write the following question on the board.  
*A milkman bought 68 litres of milk and sold 35 litres at a shop. How much milk is left with him?*  
  
Milk bought by the milkman = 68 litres  
Milk sold by the milkman = 35 litres  
Milk left with the milkman =  -  =
2. Ask students to work in pairs and answer the question.
3. Check the responses of each pair.
4. Guide students where required.



### CONCLUSION / SUM UP

At the end of the lesson tell students that we have learned to use addition and subtraction to solve real-life situations involving capacity.



### ASSESSMENT

1. Write the following question on the board and ask students to answer it in their notebooks.  
*The capacity of an inkpot is 30 ml and the capacity of a spoon is 10 ml. Find the total capacity of both containers.*
2. Check students' responses.
3. Guide students where required.



### HOMEWORK / FOLLOW UP

Do questions 1-4 of exercise 6 on page 124 of the textbook.

## TIME



## STUDENT LEARNING OUTCOME

- Recognize the number of hours in a day and the number of minutes in an hour.

## INFORMATION FOR TEACHERS

The teachers should know that there are 24 hours in a day and 60 minutes in an hour.



## DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD



## MATERIALS / RESOURCES REQUIRED

- Board, Markers/Chalk, Duster, 12 Flashcards with numbers, Rope, Textbook



## INTRODUCTION

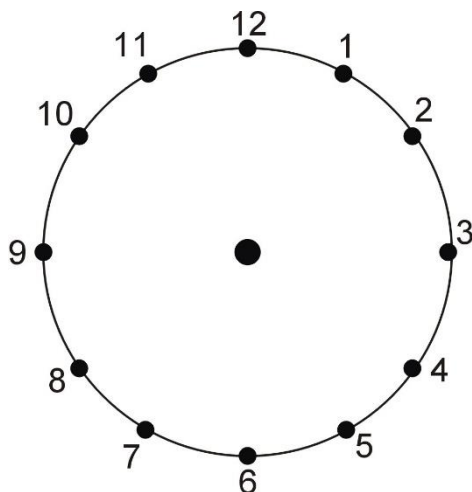
- Ask the following questions from the students:
  - At what time do you come to school?
  - At what time do you go back home?
  - At what time do you go to bed?
- Take their responses and tell them that in today's lesson they will learn about time.



## DEVELOPMENT

## Activity 2:

- Make a circle on the floor of the classroom and label it as follows.



2. Select 13 students from the class.
3. Ask one student to stand at the centre of the circle.
4. Take 12 flashcards and write one number (5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60) on each flashcard.
5. Distribute the flashcards among 12 students.
6. Tell students to stand on the circle as follows.
  - ✧ Student with the flashcard with number 5 will stand on position 1
  - ✧ Student with the flashcard with number 10 will stand on position 2
  - ✧ Student with the flashcard with number 15 will stand on position 3
  - ✧ Student with the flashcard with number 20 will stand on position 4
  - ✧ Student with the flashcard with number 25 will stand on position 5
  - ✧ Student with the flashcard with number 30 will stand on position 6
  - ✧ Student with the flashcard with number 35 will stand on position 7
  - ✧ Student with the flashcard with number 40 will stand on position 8
  - ✧ Student with the flashcard with number 45 will stand on position 9
  - ✧ Student with the flashcard with number 50 will stand on position 10
  - ✧ Student with the flashcard with number 55 will stand on position 11
  - ✧ Student with the flashcard with number 60 will stand on position 12
7. Take a rope and give one end to the student at the centre of the circle and the other end to the student at position 12. Tell the students that this rope represents minute's hand of the clock.
8. Ask student at position 12 to pass the rope to the student at position 1. At that moment, the student standing at the centre will say aloud 5 (the number on the flashcard of the student standing at position 1).
9. Similarly, the student at position 1 will pass the rope to the student standing at position 2. At that moment, the student standing at the centre will say aloud 10 (the number on the flashcard of the student at position 2).
10. Ask students to keep on passing the rope till the rope reaches 12.
11. Ask the student standing at the centre, what was the last number you said aloud.
12. Take student's response and tell the class that one complete round of the rope is equal to 60 minutes.
13. Tell students that 60 minutes is equal to 1 hour. If the clock takes 24 such rounds, it is equal to 24 hours.
14. Tell students that 24 hours is equal to 1 day.



## CONCLUSION / SUM UP

Tell students that:

1. 1 day = 24 hours
2. 1 hour = 60 minutes



## ASSESSMENT

1. Write the following question on the board.

Choose the correct answer:

i. 60 minutes = \_\_\_\_\_

a. 1 hour                      b. 2 hours                      c. 3 hours

ii. 24 hours = \_\_\_\_\_

a. 3 days                      b. 2 days                      c. 1 day

2. Ask students to read both questions carefully and write the answers in their notebooks.

3. Check students' responses.

4. Guide students where required.



## HOMEWORK / FOLLOW UP

Write the following question on the board and ask students to answer it in their notebooks.

Fill in the given blanks.

i. One day = \_\_\_\_\_ hours

ii. One hour = \_\_\_\_\_ minutes

**TIME****STUDENT LEARNING OUTCOMES**

- Read and write the time from a clock in hours and minutes (with five minutes intervals) e.g., read 8:15 as eight-fifteen and 8:50 as eight-fifty.
- Recognize a.m. and p.m.
- Draw hands of a clock to show time in hours and minutes (with five-minute intervals).

**INFORMATION FOR TEACHERS**

The teachers should know:

1. How to read a clock.
2. Difference between a.m. and p.m.



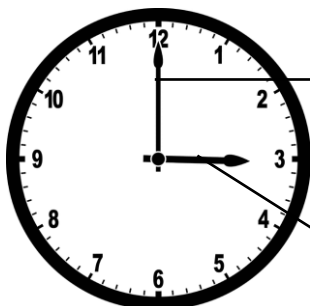
**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD**

**MATERIALS / RESOURCES REQUIRED**

- Board, Marker/Chalk, Duster, Pictures of a clock, Model of a clock, Textbook

**INTRODUCTION**

1. Paste the following pictures of a clock on the board.



Minute hand of the clock

Hour hand of the clock

2. Ask students, what is this?
3. Take students' responses.
4. Ask them, what do you see in this clock.

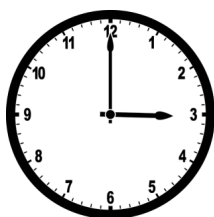
- Take students' responses and tell it has numbers from 1 to 12. There are two hands of the clock; the bigger hand is called the minute hand and the smaller hand is called the hour hand of the clock.
- Tell students that in today's lesson we will learn to read the time on the clock.



## DEVELOPMENT

### Activity 1:

- Prepare a model of a clock in such a way that you can easily move its minute and hour hands.
- Hold the model of the clock in hands and set its hour and minute hands as shown below.



- Tell the class that if the hour hand is at 3 and the minute hand is at 12, it is 3 o'clock.
- Move the hands of the clock and set the hour hand at 5 and the minute hand at 12.
- Tell students that if the hour hand is at 5 and the minute hand is at 12, it is 5 o'clock.
- Tell the class that now we will learn to read the minute hand.

If the minute hand is at:

1, it represents 5 minutes

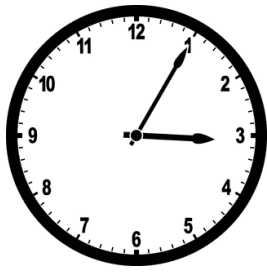
2, it represents 10 minutes

3, it represents 15 minutes and so on

- Tell students let's start to read the time.
- Paste the following picture on the board.



- Tell students that if the hour hand is at 3 and the minute hand is at 12, we will read it as 3 o'clock.
- Move the hour hand from 3 to 5 and tell students that if the hour hand is at 5 and the minute hand is at 12, we will read it as 5 o'clock.
- Tell students that if the hour hand is at 3 and the minute hand is at 1, it shows 5 minutes past 3 and can be written as 3:05.









12. Move the minute hand to 3 and tell students that it means 15 minutes. If the hour hand is at 4 and the minute hand is at 3, we will read it as 4:15.
13. Repeat the activity with different times.

### Activity 2:

1. Write the following statement on the board.  
Ali wakes up at 6 o'clock in the morning. He finishes his homework at 6 o'clock in the evening.
2. Ask the students is there any difference in writing the time of morning and evening?
3. Take their responses and then tell them that we write a.m. (ante meridiem) with the time which lies between 12:00 midnight to 12:00 noon and write p.m. (post meridiem) with time which lies between 12:00 noon to 12:00 midnight.
4. Tell them that in the given example, Ali wakes up at 6 o'clock in the morning, so the time will be written as 6:00 a.m. He finishes his homework at 6 o'clock in the evening, so the time will be written as 6:00 p.m.

### Activity 3:

1. Divide the class into 6 groups.
2. Give one flashcard with the face of the clock (without hands) to each group.

Group 1  3:15	Group 2  1:30	Group 3  2:45
Group 4  6:25	Group 5  12:10	Group 6  1:00

3. Ask each group to look at the time written on the flashcard and draw minute and hour hands accordingly.
4. Go to each group and watch their work.
5. Guide students where required.
6. Take the flashcards from all the groups and paste them on the board.

7. Ask all the students to look at each other's drawing and comment if it is correct or incorrect.
8. Guide students where necessary.



## CONCLUSION / SUM UP

Tell students that:

1. There are 12 numbers in a clock (from 1–12).
2. There are two hands of the clock; the bigger hand is called the minute hand and the smaller hand is called the hour hand of the clock.
3. If the minute hand is at:
  - 1, it represents 5 minutes
  - 2, it represents 10 minutes
  - 3, it represents 15 minutes and so on
4. We write a.m. with the time which lies between 12:00 midnight to 12:00 noon and write p.m. with time which lies between 12:00 noon to 12:00 midnight.



## ASSESSMENT

1. Draw the following clocks on the board.
2. Ask three students to come on the board and write the time for one clock one by one.



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3. Tell the class to check and comment if the answers are correct.
4. Guide students where required.



## HOMEWORK / FOLLOW UP

1. Do exercise on page 132 of the textbook.
2. Do question 2 on page 139 of the textbook.

**Month**

**8**

**LESSON****53****UNIT 5: TIME****TIME****STUDENT LEARNING OUTCOME**

- Use the solar calendar to find a particular date/day.

**INFORMATION FOR TEACHERS**

The teachers should know how to read the solar calendar.

**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD****MATERIALS / RESOURCES REQUIRED**

- Board, Marker/Chalk, Duster, Picture of the solar calendar, Textbook

**INTRODUCTION**

1. Ask some students their dates of birth and write one on the board.  
E.g., 28<sup>th</sup> June 2014.
2. Ask students, if you want to know the day of the week (Monday, Tuesday, etc.) on which your birthday would fall this year, what would you do?
3. Take students' responses and tell them that in today's lesson they will learn about the solar calendar.

**DEVELOPMENT****Activity 1:**

1. Paste a picture of a month of a solar calendar on the board and describe its parts as follows.

Year ← <b>2021 JULY</b> → Month						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
27	28	29	30	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	4
25	26	27	28	29	30	31

Day

Date

2. Tell them that the big block shows year and month.
3. The second row shows days of the week from Sunday to Saturday and the numbers show dates.
4. Ask students to open page 134 of the textbook and look at the calendar.
5. Tell them that a calendar is a record of all months, dates, and days of the year.
6. Ask students, how many months do they see on the calendar.
7. Take students' responses and tell them there are 12 months in a year.
8. Tell students that if we count all the days of the solar calendar, there will be 365 or 366 days.

### Activity 2:

1. Ask the date of birth of some students and write one on the board.  
Saif: 19<sup>th</sup> February
2. Tell students that we will use the solar calendar to find out the day of the birthday of your class fellow.
3. Guide students that first we will go to the month (e.g., February) and then date (e.g., 19).
4. Tell them that we will go up in the column of the date to find the day.
5. Make pairs of students and ask them to find out the day of each other's birthday using the solar calendar.



### CONCLUSION / SUM UP

Tell students that:

1. A calendar is a record of all months, dates, and days of the year.
2. There are 365 or 366 days in a year.
3. There are 12 months in a year.



## ASSESSMENT

1. Write the following dates on the board and ask students to copy them in their notebooks.
2. Ask students to find out the days of the given dates using the solar calendar on page 134 of the textbook and write in the given table.

Dates	Days
8 April	
30 June	
14 August	
27 October	



## HOMEWORK / FOLLOW UP

Complete the table on page 135 of the textbook.

## TIME



## STUDENT LEARNING OUTCOME

- Use the Islamic calendar to find a particular date/day.

## INFORMATION FOR TEACHERS

The teachers should know how to use the Islamic calendar.



**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Picture of the Islamic calendar, Textbook



## INTRODUCTION

- Ask students, on which date do we celebrate Eid-ul-Fitr.
- Take students' responses and write 1 Shawal on the board.
- Ask students, how do we know the day on which Eid-ul-Fitr falls every year.
- Take students' responses and tell them that in today's lesson we will learn to use the Islamic/Lunar calendar.



## DEVELOPMENT

## Activity 1:

- Paste a picture of a month of an Islamic/lunar calendar on the board and describe its parts as follows:

Month ← 

Rajab - Sha'ban 1442

 → Year

SUN

MON

TUE

WED

THU

FRI

SAT

 → Day

1

2

3

4

5

6

 → Date

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

2. Tell them that the big block shows year and month.
3. The second row shows days of the week from Sunday to Saturday and the numbers show dates.
4. Ask students to open page 136 of the textbook and look at the calendar.
5. Tell them that a calendar is a record of all months, dates, and days of the year.
6. Ask students, how many months they see on the calendar.
7. Take students' responses and tell them there are 12 months in a year.
8. Tell students that if we count all the days of the Islamic calendar, there will be 354 or 355 days.

### Activity 2:

1. Ask students, on which date do we celebrate Eid-ul-Adha.
2. Take students' responses and write the date on the board.

10<sup>th</sup> Zul Hajjah

3. Tell students that we will use the Islamic calendar to find out the day of the Eid-ul-Adha.
4. Guide students that first we will go to the month (e.g., Zul Hajjah) and then date (e.g., 10).
5. Tell them that we will go up in the column of the date to find the day.
6. Ask students to find out the day of 12<sup>th</sup> Rabi ul Awwal using the Islamic calendar given in the textbook.
7. Check students' responses.
8. Guide students where required.



### CONCLUSION / SUM UP

Tell students that:

1. A calendar is a record of all months, dates, and days of the year.
2. There are 354 or 355 days in a year.
3. There are 12 months in a year.



### ASSESSMENT

1. Write the following dates on the board and ask students to copy them in their notebooks.
2. Ask students to find out the days of the given dates using the Islamic calendar on page 136 of the textbook and write in the given table.

Dates	Days
14 Shawwal	
10 Muharram	
15 Sha'ban	



### HOMEWORK / FOLLOW UP

Complete the table on page 137 of the textbook.

# TWO DIMENSIONAL (2-D) FIGURES



## STUDENT LEARNING OUTCOMES

- Identify the figures like square, rectangle, triangle, circle, semi-circle and quarter-circle.
- Identify vertices and sides of a triangle, rectangle and square.

## INFORMATION FOR TEACHERS

The teachers should be able to:

1. Draw figures like square, rectangle, triangle, circle, semi-circle and quarter-circle.
2. Identify the vertices and sides of a square, triangle and rectangle.



**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD**



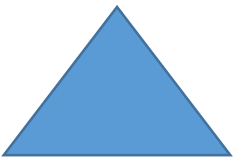

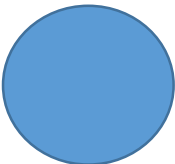



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Chart showing shapes (triangle, circle, square), Scissors, Worksheets, Round shaped papers, Textbook



## INTRODUCTION

1. Draw/paste the following chart on the board:

Column A - Shape	Column B - Everyday Object
	
	
	

2. Call three students one by one on the board and ask each student to look at the given shapes in column A and match them with one everyday object in column B.
3. Take students' responses and ask the class to comment if it is correct or incorrect.



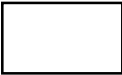

4. Guide students where required and tell them that in today's lesson they will learn about shapes.



## DEVELOPMENT

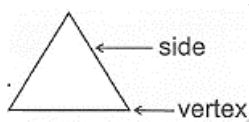
### Activity 1:

1. Draw the following table on the board.

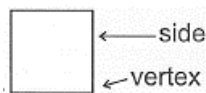
Shape	Name of the Shape	Number of Sides
	Triangle	
	Square	
	Rectangle	
	Circle	

2. Point out one shape at a time and read aloud its name.
3. Ask students to repeat after you.
4. Ask students to count the number of sides of each shape.
5. Select three students randomly and ask them one by one to tell the number of sides a shape (triangle, square, rectangle) have.
6. Take students' responses and write them in the table.
7. Guide students where required.
8. Ask the class, how many sides does a circle have.
9. Take students' responses and write 0 in the table. Tell students that a circle does not have any side.
10. Now tell students that the point where two lines meet in a triangle, square or a rectangle is called vertex. It is defined as the corner of any shape.
11. Explain the characteristic of each shape as follows using diagrams.

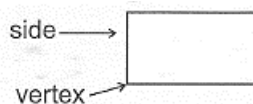
- i. A triangle has three sides and three vertices.



- ii. A square has four sides and four vertices. All the sides of a square are equal in length.

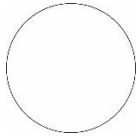


- iii. A rectangle has four sides and four vertices. The opposite sides of the rectangle are equal in length.

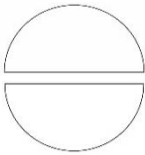


### Activity 2:

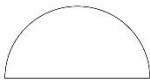
1. Divide the class into four groups.
2. Cut four papers in round shape and give one round-shaped paper to each group.



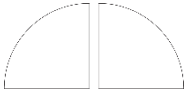
3. Tell each group to fold the paper and divide it into two equal parts.



4. Tell them that the half part of the circle is called a semi-circle.



5. Tell them to fold the semi-circle and divide it into two equal parts.



6. Tell them that the half part of the semi-circle is called a quarter-circle.



### CONCLUSION / SUM UP

Tell students that:

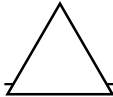
1. The corner of any shape is called vertex.
2. A triangle has three sides and three vertices.
3. A square has four sides and four vertices. All the sides of a square are equal in length.
4. A rectangle has four sides and four vertices. The opposite sides of the rectangle are equal in length.
5. Half of a circle is called a semi-circle.
6. Half of the semi-circle is called a quarter-circle.

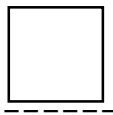



### ASSESSMENT

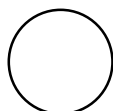
1. Draw the following table on the board.
2. Ask the students to copy it in their notebooks and complete it.
3. Check students' responses and provide feedback.

Fill in the blanks.

i.  I have \_\_\_\_\_ sides and \_\_\_\_\_ vertices. Who am I? \_\_\_\_\_

ii.  I have \_\_\_\_\_ sides and \_\_\_\_\_ vertices. Who am I? \_\_\_\_\_

iii.  I have \_\_\_\_\_ sides and \_\_\_\_\_ vertices. Who am I? \_\_\_\_\_

iv.  I have \_\_\_\_\_ sides and \_\_\_\_\_ vertices. Who am I? \_\_\_\_\_



## HOMEWORK / FOLLOW UP

Give the following worksheet to students as homework.

Colour the shapes in the given diagram as follows:

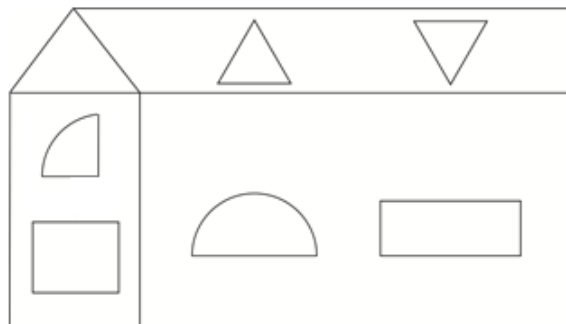
Triangle: **Yellow**

Square: **Red**

Semi-circle: **Green**

Quarter-circle: **Blue**

Rectangle: **Purple**



# STRAIGHT LINES AND CURVES



## STUDENT LEARNING OUTCOMES

- Differentiate between a straight line and a curve.
- Identity straight lines and curves from the given line and a curve.
- Use a ruler to draw a straight line of the given length (exclude fractional length).

## INFORMATION FOR TEACHERS

Teachers should be able to:

1. Differentiate between straight line and curve line.
2. Draw a straight line and a curve.



**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD**



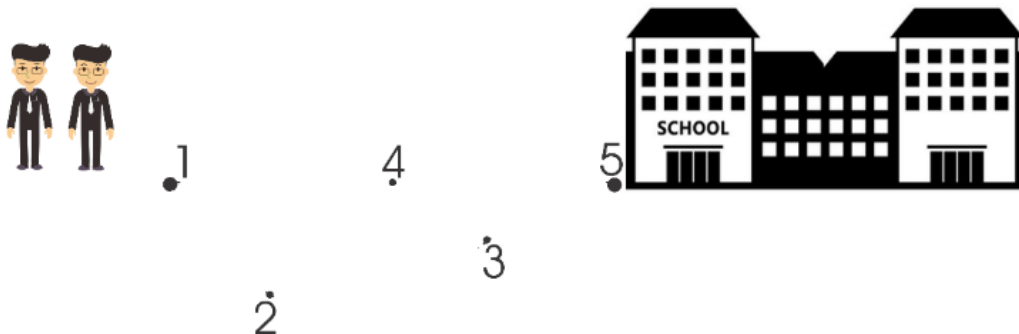
## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Textbook

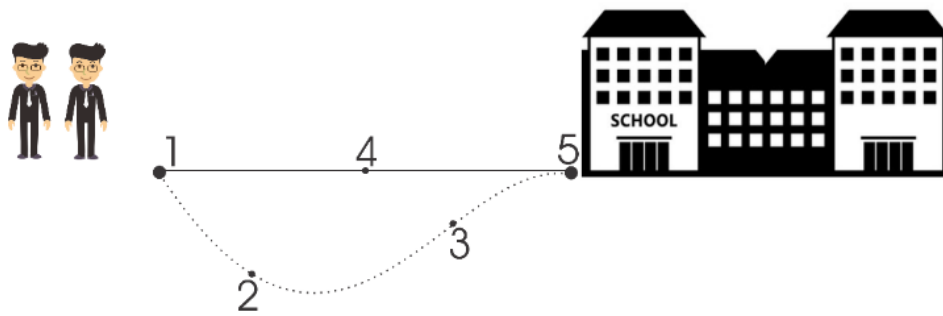


## INTRODUCTION

1. Draw the following pattern of points on the board.



2. Tell students that we have to help the boys to reach the school.
3. Ask a student to come and join the dots 1, 4, and 5 to find the path to school for the boys.
4. Take student's response.
5. Ask another student to come and join the dots 1, 2, 3, and 5 to make another path for the boys.



- Tell the class that there are two types of paths. The line joining the points 1, 4, and 5 is called a straight line while the line joining the points 1, 2, 3, and 5 is called a curved line.



## DEVELOPMENT

### Activity 1:

- Select two students randomly and ask them to come to the board.
- Divide the board into two parts; label one as 'straight line' and the other as 'curve line'.
- Tell one boy to draw a straight line in the part of the board labelled as 'straight line' and the other boy to draw a curve line in the part of the board labelled as 'curve line'.
- Help students during the activity.
- Tell the class to observe the difference between both lines.

Straight line



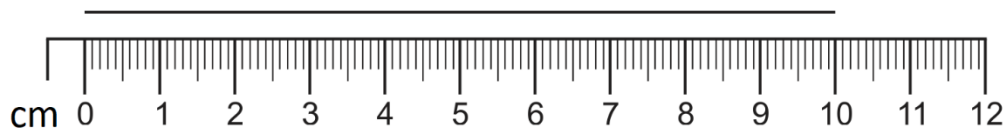
Curve line



### Activity 2:

- Show the ruler to the class and tell them that they have used it in the unit 'Measurement' to measure the length of the objects. Today, we will use it to draw a straight line.
- Tell students that suppose we have to draw a line of length 10 cm.
- Ask students to take out their copies, pencils, and rulers.

4. Put the ruler on the board and make a mark at point 0 and another mark at point 10.
5. Ask students to do the same step in their copies.
6. Join both marks with the help of a ruler.
7. Ask students to do the same step in their copies.
8. Tell students that the required straight line of 10 cm length is ready.



## CONCLUSION / SUM UP

1. Tell students that the two types of lines we have learned today are straight lines and curved lines.



## ASSESSMENT

1. Draw the following lines on the board showing ruler.

i.	A horizontal ruler with markings from 0 to 12 cm. A straight line segment is drawn above the ruler, starting at the 0 cm mark and ending at the 2 cm mark.
ii.	A horizontal ruler with markings from 0 to 12 cm. A straight line segment is drawn above the ruler, starting at the 0 cm mark and ending at the 6 cm mark.

2. Ask the students to read the measurement on the rulers and write the answers in their notebooks.
3. Make pairs of students and ask one student to check the answers of the other student.
4. At the end write the correct answers on the board.
 

i. 2 cm      ii. 6 cm
5. Guide students where required.



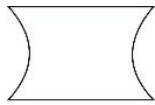
## HOMEWORK / FOLLOW UP

1. Write the following question on the board and ask students to answer it in their notebooks.

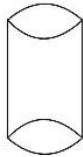
Write the total number of straight lines and curve lines in the given figure.

Curve Lines

Straight Lines



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2. Draw a line of 7cm in your notebook.

# PATTERNS



## STUDENT LEARNING OUTCOME

Make complete geometrical patterns on a square grid according to one or two of the following attributes:

1. Shapes
2. Size
3. Orientation

## INFORMATION FOR TEACHERS

The teachers should know how to use a square grid to make different geometrical shapes



**DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD**



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Pencils, Sharpeners, Square grids, Flashcards (showing different shapes), Textbook



## INTRODUCTION

1. Place a few pencils and sharpeners on the table in front of the class.
2. Call a student and tell him to pick two pencils and two sharpeners and place them on the table in an arrangement of his own choice.
3. Draw the arrangement on the board.
4. Ask another student to come and pick the pencils and sharpeners.
5. Ask him to place the pencils and sharpeners on the table in an arrangement of his own choice.
6. Draw his arrangement on the board.
7. Tell students that this arrangement of things in proper order is called 'pattern' and in today's lesson we will learn to make geometrical patterns on a square grid.

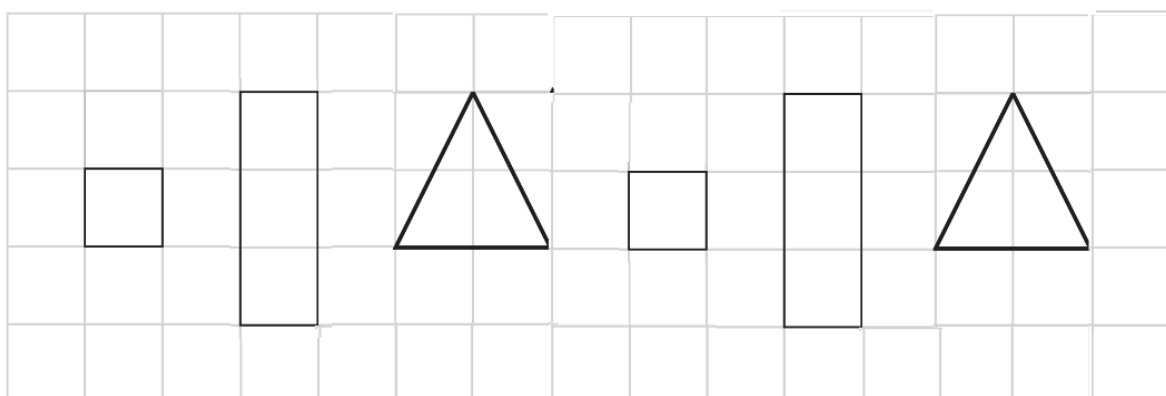




## DEVELOPMENT

### Activity 1:

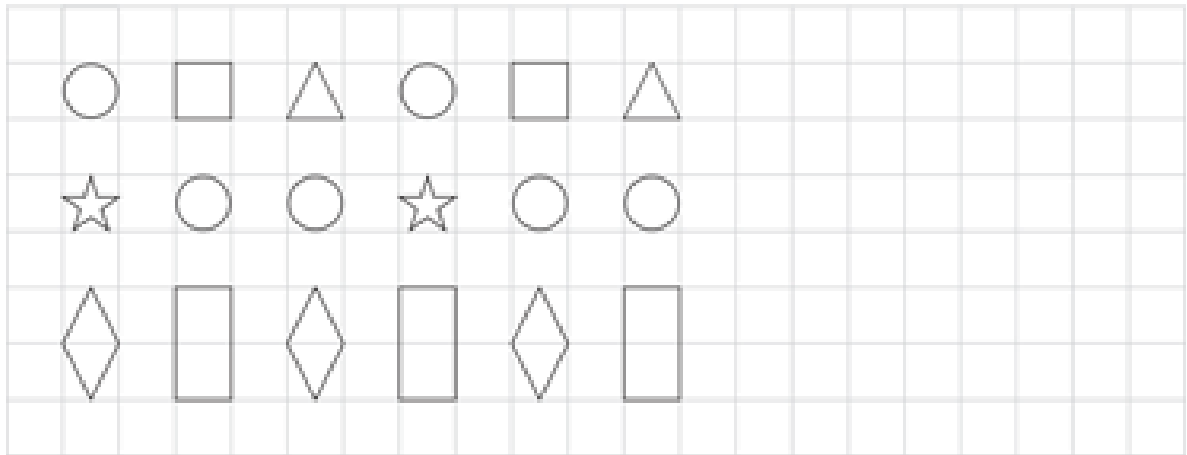
1. Divide the class into suitable groups.
2. Give a square grid to each group.
3. Draw different shapes on the board. E.g., 3 triangles, 3 squares, 3 rectangles.
4. Ask each group to arrange the shapes in a specific order on the square grid.
5. Check each group's pattern.
6. Show the following square grid to the students which shows a pattern using triangles, squares and rectangles.



7. Tell students that in the given figure, there is a square, then rectangle and then a triangle. The same arrangement of the shapes is repeated.
8. The arrangement of things in a proper order is called a 'pattern'.

### Activity 2:

1. Divide the class into three groups.
2. Give each group a set of flashcards showing different shapes. E.g., circles, squares, diamonds, rectangles, triangles.
3. Ask each group to arrange the given flashcards in a pattern.
4. Give each group a square grid and ask them to draw their pattern on it.



5. Check each group's work.
6. Guide students where required.



## CONCLUSION / SUM UP

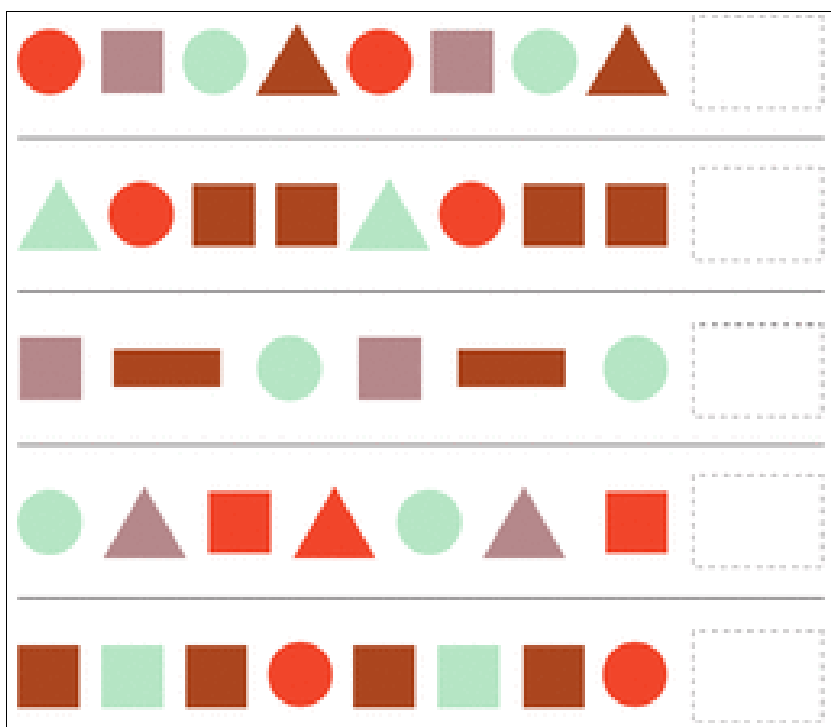
Tell students that:

1. The arrangement of things in proper order is called a 'pattern'.
2. We draw patterns on a square grid.



## ASSESSMENT

1. Draw/Paste the following chart on the board.



2. Ask the class to study the given patterns carefully.

3. Call five students one by one to complete each pattern.
4. Take students' responses. Ask the class to see and comment if the answers are correct or incorrect.
5. Guide students where required.



## **HOMEWORK / FOLLOW UP**

Do exercise 4 on page 152 of the textbook.

# THREE DIMENSIONAL (3-D) OBJECTS



## STUDENT LEARNING OUTCOME

- Recognize and name 3-D objects (cubes, cuboids, cylinder, cone, sphere).

## INFORMATION FOR TEACHERS

The teachers should know that a three-dimensional shape can be defined as a solid figure or an object or shape that has three dimensions – length, width, and height. E.g., cubes, cuboids, cylinders, cones, spheres.



## DURATION / NO OF PERIODS: 35 MINUTES / 1 PERIOD



## MATERIALS / RESOURCES REQUIRED

- Board, Marker/Chalk, Duster, Textbook



## INTRODUCTION

- Draw a rectangle on the board.
- Place a box of chalks on the table.
- Ask students to look at the shape on the board and the box of chalks.
- Tell them that the rectangle on the board has length and width while the box has length, width, and height. Hence, this box of chalks is a cube or a three-dimensional shape.
- Tell students that an object which has length, width, and height is called a 3-D object and in today's lesson we will learn about 3-D shapes.

## Activity 1:

- Prepare cards of different shapes e.g., square, rectangle, circle, and triangle.
- Place a box of chalks, a dice, a shoebox, an ice-cream cone, and a ball on the table as examples of 3-D objects.
- Select four students to come in front of the class.
- Ask one student to pick up the box of chalks and the square card. Hold them together to show it to the class.
- Similarly, call another student to pick and hold an ice-cream cone and the triangle card.
- Repeat the above step by placing a shoebox and the rectangle card together, and the ball and the circle card together.

7. Tell students that the box of chalks is a cube, the ice-cream cone is a cone, the shoebox is a cuboid and the ball is a sphere. These objects have length, width, and height (unlike 2-D objects) so, they are called 3-D objects.



## CONCLUSION / SUM UP


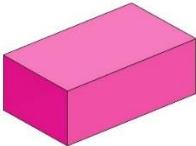



Tell students that:

1. A three-dimensional shape can be defined as a solid figure or an object or shape that has three dimensions – length, width, and height.
2. Examples of 3-D shapes include cubes, cuboids, cylinders, cones, spheres.



## ASSESSMENT

1. Draw the following table on the board.
2. Call four students one by one on the board to match one object in column A with one shape in column B.

Column A	Column B
	Sphere
	Cube
	Cone
	Cuboid
	Cylinder

3. Check students' responses.
4. Guide where required.



## HOMEWORK / FOLLOW UP

Do question 7 on page 158 of the textbook.

**A teacher's purpose is not to create students in his/her own image, but to develop students who can create their own image.**



**Directorate of Curriculum and Teacher  
Education Khyber Pakhtunkhwa  
Abbottabad**



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