WOW MATHS based on the Singapore Model offers complete Maths solutions for grade 1 to 8 in the form of textbooks, workbooks, lesson plans and more.

The lesson plans follow a learner centric approach and aim at experiential learning. They have been designed to ensure that whereby the learning objectives they aim to achieve are measurable and capable of analysis conductive to the understanding of children.
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Lesson Plan - 1
Grade - 2

**Chapter 1**

**Numbers**

| Learning Objective          | To extend numbers till 199  
|---------------------------|-----------------------------------
|                            | To quantify, recognize and name numerals till 199

| Material Required         | Base ten blocks and dice
|---------------------------|-----------------------------------
| Stress Words              | Grouping, ones, tens, hundreds and number name

<table>
<thead>
<tr>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divide the class in groups of 4.</td>
</tr>
<tr>
<td>Ask the students to take turns and throw the dice one by one. Instruct them to pick up as many ones blocks shown on the dice. Let them play as many round as they can play for 10 minutes.</td>
</tr>
<tr>
<td>Give them the condition that the group getting 100 blocks of ones will win the game. Let them stop in between and count all the ones the members of their group gather. In this process they will have to keep counting ones time and again. Generate the need of grouping the units based on this experience.</td>
</tr>
<tr>
<td>Whenever they gather 10 ones, ask them to exchange them with a tens block.</td>
</tr>
<tr>
<td>Ask students “Does any group have 10 tens or more than that?”</td>
</tr>
<tr>
<td>Ask further “Can we group 10 tens as we grouped 10 ones?”</td>
</tr>
<tr>
<td>Show pictorially that 10 tens are grouped as 1 hundred</td>
</tr>
<tr>
<td>Tell the students to replace 10 tens blocks (if they have) with a 100 block.</td>
</tr>
<tr>
<td>Introduce 1 hundred as 10 tens or 100 ones. Share with them that 100 is written in words as ‘Hundred’.</td>
</tr>
<tr>
<td>Next, ask students to add one more to the block of 100. Make them observe that there is one hundred block and one ones block. So, the number formed will be read as ‘one hundred one’ and write it as 101.</td>
</tr>
<tr>
<td>Let them extend numbers in similar way. Ask them to represent numbers from 100 to 199 using blocks.</td>
</tr>
<tr>
<td>Keep writing the numerals that you call out under HTO format and the number names on the board.</td>
</tr>
<tr>
<td>Continue the activity till the time permits.</td>
</tr>
</tbody>
</table>
**Understanding**

- All numbers are one more than the previous ones.
- When we have 10 units, we group them as bigger unit/place.

**Expected**

- Represent numbers using blocks.
  - 145  
  - 167  
  - 189  
  - 199

- Write the number names of the following numbers:
  - 132  
  - 125  
  - 169  
  - 178

- Form numbers with hundreds, tens and ones.
  - 100 + 40 + 2 = _______  
  - 100 + 70 + 3 = _______

**Application**

- How many ones are there in a ten?
- How many tens make a hundred?
- How many ones are there in a hundred?

**Analysis**

- Help your child pay attention to 3-digit numbers in various price tags.
- Help your child to say counting numbers in a sequence till 199.

**Parent Connect**

Content Book Reference: Page 13-15
Guided Practice: Page 5
**Lesson Plan - 2**

**Grade - 2**

**Learning Objective**
- To extend counting numbers till 1000
- To write the expanded and standard form of 3-digit numbers
- To identify place and face value of digits in 3-digit numbers

**Material Required**
place value cards, ten blocks of base ten blocks (ones, tens, Hundreds and thousands)

**Stress Words**
Expanded form, standard form, place value, face value

**Activity**
- Recapitulate 10 ones making a tens and 10 tens making a hundred showing base ten blocks to the class.
- Ask, "If we have two hundreds what that number will be?"
- Count in hundreds till 900 in this pattern. Introduce that 10 hundreds make a thousand using 10 hundreds blocks as a stack and replacing that with a thousands block. Reinforce that 10 hundreds is written as 1000 and read as one thousand.
- Stress that to read the 3-digit numbers, we read the hundred place and then read the last two-digits together like 345 is read and written as three hundred forty-five
- Form 3 to 4 numbers using base ten blocks like:
  - 234 as 2 hundreds, 3 tens and 4 ones or 200 + 30 + 4
- Make students observe the place value period as ‘Ones, Tens, Hundreds and Thousands’ starting from the right. Make them understand that the value of each digit in a number is determined by its place value.
- Introduce expanded form and standard form using the above example. Show place value cards to understand how the contrived form of expanded form makes the standard form.
- Introduce place value of the digits 4 as 400, 5 as 50 and 6 as 6 based on their places in the number. Stress that the number itself tells the face value but the place value changes due to the place a digit holds in a number.
- Continue the activity till time permits.

**Understanding Expected**
- The digits’ value depends on the place they hold in a number.
- Numbers extend in plus 1 manner in a series.
** Associated Concepts

- Forward counting and backward counting

** Application

- Write the numbers for the blocks shown.

```
\begin{align*}
\text{Forward counting} & : 123, 124, 125, \ldots \\
\text{Backward counting} & : 123, 122, 121, \ldots \\
\end{align*}
```

- Write the standard form.
  
  » 300 + 40 + 1 
  » 700 + 50 + 4 

- Form numbers with hundreds, tens and ones.
  
  » 287 
  » 458 
  » 782 

** Analysis

- How many ones/tens/hundreds are there in a thousand? (1000, 100, 10)
- What is the place value of 5 in 567? (500)
- What is the face value of 6 in 567? (6)

** Thinking Skills

- Show your child a house number and ask him/her to speak next house number or the previous number to strengthen the concept of 3-digit number.
Grade - 2

Lesson Plan - 3

Learning Objective:
- To compare numbers using place value
- To use signs of comparison correctly
- To seriate numbers in ascending and descending orders

Material Required:
Base ten blocks, number cards (0 to 9)

Stress Words:
Greater than, lesser than, bigger/larger, smaller, compare, ascending, descending order

Activity:
- Divide the students in groups of 4-5 and provide a base ten blocks kit to each group.
- Ask them to represent numbers 432 and 543. Ask them to compare which number is greater. Let them share their observations. Consolidate that since both are 3-digit numbers, the number having more hundreds is greater.
- Ask them to represent numbers 459 and 479. Stress that since both numbers have same number of hundreds; compare tens to find out which one is a greater number. Similarly reinforce comparing ones in case of numbers having same hundreds and tens.
- Build that all three digit numbers are bigger than one and two digit numbers. Let them check this understanding using blocks.
- Build that we should compare the numbers at bigger place first in any numbers. They can use place value chart to quickly compare numbers.

3-Digit Numbers

- Introduce signs of comparison <, > and =.
- Ask the students to represent any three numbers of their choice in groups and put them in increasing order using the understanding of place value. Now introduce the term ascending order. Introduce descending order with three different numbers. Use the diagram of a ladder/staircase to build the visual memory along with the concept.
• Now give each group number cards from 0 to 9. Ask them to take any two number cards and form a number. Ask them to shuffle the same cards and form another number.

• Repeat these with three number cards now. Build that to form the greatest number from any three digits, we keep the greatest digit at the greatest place and smallest at ones place.

• Ask them to form greatest and smallest number using any three number cards in groups. Write these numbers from each group on the board. Ask the class to collectively arrange them in an ascending order.

• Digit holding the biggest place will determine if a number is bigger than the other. Once first ‘less than’ or ‘greater than’ digit is found, we don’t need to compare further.

• Number having more number of digits will be bigger.

Associated Concepts

• Place value

Analysis

• What do we compare first in three-digit numbers?
• If two numbers have same digits at hundred’s place, what do we compare next?
• How do we form greatest number using three different digits?

Application

• Compare the number using signs >,< and =.
  » 345 ____ 567     » 125 ____ 142     » 562 ____ 560
• Write in ascending order.
  » 456, 678, 123, 490
• Write in descending order.
  » 456, 245, 671, 235
  » 234, 456, 678, 235

Thinking Skills

• How many numbers can be formed using digits 4, 7 and 2?
• Is 045 a three-digit number? Why or why not?

Parent Connect

• When you go for shopping, as students to compare the price of things bought. Ask them to list the price in ascending or descending order. Make sure these prices are in three-digits.
Learning Objective
To identify odd and even numbers

Material Required
Kidney beans or any other counters- 20 per pair

Stress Words
Pairing, odd and even

Activity
- Form pairs and ask students to take 20 counters/objects.
- Ask students to take out 1 block and keep aside. Ask them to take 2 blocks and make a pair. Ask them to continue this till number 10. Ask them to note all the numbers that could form pairs and that could not (for the given number of counters/blocks)
- Introduce that the numbers that form pairs are called even numbers and that do not form pairs are called odd numbers.
- Ask students to identify a few even and odd numbers beginning from number 1. Share observations and conclude that 1, 3, 5, 7, and 9 are odd numbers while 2, 4, 6, 8 and 10 are even.
- Show the pattern in odd and even numbers, i.e. write counting numbers from 1-10 and circle the even number and underline the odd number. Conclude that the next number of an even number is an odd number and next number of an odd number is an even number, i.e. in two consecutive numbers one is even and other is odd.
- Write a few 2-digit numbers on the board, like 45, 67, 39, 52
- Ask students to identify odd – even numbers among the given numbers
- Explain the process as: to check whether a number is even or not, check its ones digit, if it is one of 0, 2, 4, 6, 8 then it is even otherwise it is odd. Conclude that in given numbers 45, 67 and 39 are odd numbers while 52 is only even number.
- Write following 3-digit numbers on the board, 456, 342, 111, 678
- Ask students to identify odd and even numbers by checking ones’ digit only
- Reinforce that numbers that are in tens (20, 30, 40, ..) and hundreds (100, 200, 300, ..) form pairs so only the number at the ones place is to be checked to find whether the numbers are odd or even.
- Conclude that in given numbers 456, 342 and 678 are even numbers while 111 is only odd number.
- Encourage students to add one more to any odd or even number to understand that all numbers are either odd or even and how they can be changed.
- Speak out random numbers and ask the students to identify them as odd or even.
- Continue till time permits.
- In 3-digit numbers, since tens and hundreds form pairs, digit at the ones place can be checked to know odd or even number.
- All numbers are either odd or even.
- 0 is neither even nor odd but a bigger number that ends with 0 is even.

<table>
<thead>
<tr>
<th>Understanding</th>
<th>Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Do 8 books form pairs?</td>
<td></td>
</tr>
<tr>
<td>- Is 4 odd or even?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Circle the even numbers.</td>
</tr>
<tr>
<td>- Change the even numbers to odd ones.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Application</th>
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</table>

| 456, 345, 278, 379 |
| 123, 348, 122, 150 |

<table>
<thead>
<tr>
<th>Thinking Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>- How can you change an odd number to an even number?</td>
</tr>
<tr>
<td>- If a number has 0 at its ones place, will that number be odd or even?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parent Connect</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Give your child some socks and ask him/her to make pairs. Then find whether the given numbers of socks are even or odd.</td>
</tr>
<tr>
<td>- Give your child a few spoons and forks to count, pair them and identify them as even or odd.</td>
</tr>
</tbody>
</table>
### Learning Objective
To identify the ordinal numbers till tenth

### Stress Words
Place, position, quantity

### Activity
- Call 10 students to come ahead and stand up in a line by facing towards the entire class.
- Ask rest of the students to count the number of students in the group.
- Recall the term “cardinal number” in the same context, i.e. the number which are used for counting are called cardinal numbers. Cardinal numbers show the quantity of a group of objects/persons. Here 10 is a cardinal number.
- Assign a role number to them as 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10 such that roll number 1 is first from left and roll number 10 is first from right.
- Ask rest of the students to find out the position of a student whose roll numbers are 1, 2, 3 and 4 respectively from left.
- Share with students that the position of students are first, second, third and fourth respectively from left.
- Emphasise here the usage of words first, second, third and fourth to identify the position of a student.
- Introduce the term “ordinal numbers”, i.e. the numbers that show a position of an object or person are called ordinal numbers.
- Extend the activity and ask further “what is the roll number of that student who is first from right?”
- Let students realize the difference in questions, i.e. first from left and first from right are two different situations (roll number 1 is first from left while 10 is first from right).
- Introduce ordinal numbers from first to tenth using the students’ position in a line from left as well as from right. Keep writing the ordinal number words on the white board.
- Continue the activity by changing the position of students in a line and now addressing them with their names in place of their roll numbers (if time permits) and ask simple questions like:
  - Who is at sixth position from left?
  - Who is at third position from right?
- Place four–five text books of different subject one over other (if time permits) and illustrate position of objects from top and bottom, i.e. ask simple questions like which book is first from top, which book is second from bottom etc.

### Understanding Expected
Numbers can be Ordinal and cardinal. Ordinal numbers tell us position of a thing/person.
Analysis

- What does an ordinal number show/tell us?
- What does a cardinal number show?
- Is seventh an ordinal or cardinal number?
- Is 9 flowers an ordinal or cardinal number?

Application

- Draw 8 toys. Colour the fifth and ninth toy.
- Draw a beads string. Colour the second and tenth bead starting from left.

Thinking Skills

- Which is the third colour of our flag starting from above?
- Seven students are standing in a line Which student have the same positive from left and right?

Parent Connect

- Ask the child to tell the number of first/second/seventh etc. house in your street/locality from a specified direction, i.e. left or right or from top or bottom (if child lives in flat).
Lesson Plan - 1

Grade - 2

ADDITION

Chapter

Activity

- Divide the class into groups of four.
- Write on the board:

```
+   2 3
  4 2
   6
```
- Ask the students what the questions written above mean. Seek responses. Conclude that they need to add the numbers given.
- Ask the students to form the numbers.
- Pose a question as to how the ones digits will be added.
- Ask the students to add the ones first like add 3 ones and 2 ones by combining ones cubes.
- Now ask them “How many ones do we have?”
- Write ‘5’ in the ones column.
- Then, ask them to add tens like 2 tens and 4 tens by combining tens cubes.
- Ask them, “How many tens do we have?”
- Ask them to write ‘6’ in tens column.
- Share with the students that the sum of 23 and 42 is 65.
- Continue the activity with more numbers till time permits.

Understanding

Expected

- Adding means putting together.
- The numbers we get on adding is called the sum.

Application

- Add the numbers given.
  » 47 and 29  » 25 and 31  » 44 and 13  » 61 and 15

Analysis

- What will be the sum of 93 and 6?

Parents Connect

- Take your child on a walk in your locality and ask him/her to observe and add the last two digits of the house numbers.

Content Book Reference: Page 43-44
### Learning Objective
To add 3 digits numbers without regrouping.

### Material Required
Base ten blocks (ones, tens and hundreds)

### Activity
- Divide the class into groups of five.
- Guide the students that a three digit number is made up of hundreds, tens and ones.
- Show them hundreds, tens and ones cubes and recall that one small cube is counted as 1 one, one ten long is counted as 1 tens and one hundred flat is counted as 1 hundred.
- Distribute the cubes among the groups of students.
- Ask them to add the ones first like add 6 ones cubes and 2 ones cubes.
- Now ask them, “How many ones do we have?”
- We write ‘8’ in the ones column.
- Then, ask them to add tens like 5 tens cubes and 4 tens cubes and similarly ask them to add hundreds.
- Now ask them, “How many tens and hundreds do we have?”
- Tell them that we write ‘9’ in the tens column and ‘5’ in the hundreds column.
- Now, at the end, say 256 plus 342 is 598.
- Ask the students to find the sum of 303 and 406.
- Continue the activity with more such numbers till time permits.

### Application
- Add the numbers given:
  » 204 + 315
  » 664 + 223

### Analysis
- What can be a total of 2 hundreds, 6 tens, 3 ones and 4 hundred, 0 tens, 6 ones?

### Parents Connect
- Show your child the remote control of your television and ask him/her to add the three digits lined up in first two rows of the remote control.

### Content Book Reference: Page 45-46
Guided Practice: Page 17-20
Lesson Plan - 3

Grade - 2

Learning Objective
To add 3 digit numbers with regrouping (one step).

Material Required
Base ten blocks (ones, tens, hundreds)

Stress words
Carry over

Activity

- Write on the board:

<table>
<thead>
<tr>
<th>H</th>
<th>T</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>+</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>9</td>
</tr>
</tbody>
</table>

- Call two students and ask them to take 5 and 9 cubes respectively equal to the ones place of both the numbers.
- Make both of the students stand together and count the total number of cubes in their hands.
- Now ask “How many cubes do you have?”
- Recall the concept of regrouping and tell them that 14 ones = 1 tens + 4 ones.
- Ask all the students to write ‘4’ in ones column and carry ‘1’ to the tens place.
- Tell the students that this ‘1’ is carried on to the next place i.e. tens.
- Now, ask another two students to take 3 and 5 cubes respectively equal to the tens place of both the numbers.
- Make both the students stand together and count the total number of cubes in their hands including ‘1’ which was carried over.
- Now ask, “How many cubes are there?” Ask the students to write ‘9’ in tens column. Again, ask the students to take 2 and 1 cube respectively equal to the hundreds place of both the numbers.
- Ask the student to count them.
- Now, ask them “How many cubes are there?”
- Instruct the students to write ‘3’ in the hundreds column and say, 235 plus 159 is 394. Associate the representation given below with the steps above.

<table>
<thead>
<tr>
<th>H</th>
<th>T</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 ones = 1 ten</td>
<td>10 ones = 1 ten</td>
<td>10 ones = 1 ten</td>
</tr>
</tbody>
</table>
• Pose a question to the class, say, 782+191. Ask the students to find the sum. Give more such sums to the students to solve.

• Add the following:
  » 242 + 191
  » 236 + 446

• What will be get on adding 3 hundreds, 2 tens, 7 ones and 3 hundred, 3 tens, 7 ones?

• Write two mobile numbers and ask your child to write the first 3 digits of one mobile number and the last 3 digits of other mobile number and add them.
**Learning Objective**
To add two numbers with regrouping (two steps)

**Material Required**
Base ten blocks (Ones, Tens, Hundreds)

**Stress Words**
Carry over

**Activity**
- Write on the board:
  
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>T</td>
<td>O</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>+</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

- Call out two students and ask them to take 9 and 4 ones cubes respectively equal to the digits at the ones column and count them.
- Now ask, “How many cubes are there?”
- Recall the concept of regrouping and tell them that 13 ones = 1 tens + 3 ones.
- Ask all the students to write ‘3’ in ones column and carry on tens place above ‘4’.
- Tell the students that this ‘1’ is carried on to the next place i.e. on tens.
- Now, ask other students to take 4 and 5 tens cubes respectively and count them altogether including the one carried on.
- Now ask, “How many cubes are there?”
- Reiterating the concept of regrouping i.e. 10 tens = 1 hundreds place above ‘3’.
- Tell the students that this ‘1’ is carried on to the next place i.e. on hundreds.
- Ask the other two students to take 3 and 5 hundreds cubes respectively and count them altogether including 1 carried from tens columns.
- Now ask, “How many cubes are there?”
- Ask the students to write ‘9’ in hundreds column.
- Now say, 349 plus 554 is 903.
- Pose another question. Say, 46 and 399 and ask the students to solve it.
- Continue till time permits.

**Application**
- Add:
  - 249 and 693
  - 893 and 177

**Analysis**
- What will be get on adding 6 hundreds, 3 tens, 7 ones and 1 hundreds, 7 tens, 6 ones?

**Parents Connect**
- Take your child to the grocery shop, show him/her any two products ranging above ₹100 and below ₹500 and ask them to add prices of two.

**Content Book Reference:** Page 50-51

**Guided Practice:** Page 22-27
Lesson Plan - 1

Grade - 2

Chapter

Subtraction

Learning Objective
To subtract two numbers without regrouping.

Material Required
Base ten blocks

Stress Words
Left

Activity

- Write on the board:

<table>
<thead>
<tr>
<th>H</th>
<th>T</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>7</td>
</tr>
</tbody>
</table>

- Show the students base ten blocks for hundreds, tens, and ones according to question given.

<table>
<thead>
<tr>
<th>H</th>
<th>T</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Base ten block image]</td>
<td>![Base ten block image]</td>
<td>![Base ten block image]</td>
</tr>
</tbody>
</table>

- Divide the class into pairs of 2 students.
- Distribute 1 hundreds, 2 tens, and 7 ones blocks to each pair of students.
- Now ask them that if each one of the pair of students takes 7 ones blocks and the other students from the pair take 5 ones blocks from him/her then, “How many blocks the first student is left with?”
- Ask the students to write ‘2’ in the ones column.
- Now ask them, similarly if one student from the pair has 2 tens blocks and the other from the pair takes, tens block from him/her then, “how many blocks the first student of the pair will be left with?”
- Ask the students to write ‘1’ in the tens column.
- Now ask student to write ‘0’ below 1 in the hundreds column and share with them that ‘0’ has no value when placed before the given number.
- Guide the students to do the same as they have done in tens and ones and tell them that zero when subtracted from any number gives the number itself.
- Now ask, “How many blocks are left in hundreds?”
- Ask them to write ‘1’ in the hundreds column.
Other names used in subtraction are minus, less, difference, left and take away.

What will you get if you subtract 59 from 669?

Take your child to a vegetable market and after purchasing the vegetable of ₹200 and give a note of ₹500 to the vendor, ask your child to find the balance the vendor will give back.

Say, 127 minus 15 is 112. Associate with representation.

Give more questions and encourage the students to practice subtraction.

Other names used in subtraction are minus, less, difference, left and take away.

Subtract the number given.

» 245 - 32

» 325 - 13

What will you get if you subtract 59 from 669?

Take your child to a vegetable market and after purchasing the vegetable of ₹200 and give a note of ₹500 to the vendor, ask your child to find the balance the vendor will give back.
Lesson Plan - 2

Learning Objective
To subtract two numbers with regrouping (one step)

Material Required
Base ten blocks

Stress words
Regroup, Borrow, Difference

Activity

- Create a question and write it on the board:

<table>
<thead>
<tr>
<th>H</th>
<th>T</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>–</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

- Ask what the question means. Share that they need to subtract the numbers and find their difference.
- Display 2 hundreds blocks, 8 tens blocks and 7 ones blocks and keep it on the teacher’s table.
- Now, call a student and ask him/her to pick 4 ones blocks from the table. Equal to the ones placed of the bigger number i.e. 284.
- Now call the another student and ask whether he/she can take 7 ones blocks from the first student, the student will say ‘no’
- Guide and tell the students that it is not possible to subtract a large number from a smaller number, so for that, one is borrowed from the preceding number.
- Tell the student that 1 tens will be borrowed for 4 ones and it will make 14 ones. So, now there are 14 ones blocks in the hands of the first student.
- Now ask a student to come and take 7 ones blocks from first student and take his/her seat.
- Ask from the other students, “How many blocks are left in the hands of first student?”
- Ask them to write ‘7’ in ones column.
- Demonstrate the students that if 1 tens is borrowed by ones that means 7 tens blocks are left now.
- Now ask the first student to keep ones blocks aside and pick 7 tens blocks from the table.
- Choose a different student and ask him to take 2 tens block from the first student.
- Ask the students, “How many blocks are left now?”
- Tell the students to write ‘5’ in tens column.
- Summarize the activity by asking the first student to pick 2 hundreds blocks now and ask another student to take 1 hundred blocks.
- Ask the students, “How many blocks are left now?”
Tell the students to write ‘1’in hundreds column and say aloud, 284 minus 127 is 157.

Associate the representation with the steps given below.

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- Pose another question to the students and continue till time permits.
- Subtract
  - 157 from 293
  - 195 from 407
- What will you get after subtracting 3 hundreds, 0 tens, 7 ones from 8 hundreds, 1 tens, 5 ones?
- What do we get if ‘0’ is subtracted from a number?
- Show two 3-digit page numbers from a book to your child and ask him/her to subtract them.
**Learning Objective**
To subtract two numbers with regrouping (Two steps).

**Material Required**
Base ten blocks

**Activity**
- Divide the students into a group of four.
- Distribute 5 hundreds, 7 tens and 6 ones blocks to each group according to the question written on the board.

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<tbody>
<tr>
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<td>4</td>
<td>3</td>
</tr>
<tr>
<td>-</td>
<td>4</td>
<td>7</td>
</tr>
</tbody>
</table>
```
- Share that the students need to subtract. Instruct the groups to start subtraction from ones.
- Tell them that one of the students from each group will pick 3 ones blocks and ask other student to take 6 ones blocks from it which is not possible.
- Now, ask the groups to borrow ‘1’ from tens and make 3 ones as 13 ones.
- Now, tell the first student from each group that they have 13 ones now and ask their friend from same group to take 6 ones blocks.
- Ask from each group “how many blocks are left?”
- Tell them that if they had borrowed ‘1’ from tens then out of 4, 3 tens blocks are left. Again we can’t subtract ‘7’ from ‘3’.
- Ask the students to borrow ‘1’ again from hundreds blocks.
- So, tell them that now 13 tens are there and after borrowing ‘1’ from hundreds, ‘4’ hundred blocks are left.
- Ask from the students, “How many tens and hundreds are left?”
- Ask the students to write ‘6’ in tens column and ‘0’ in hundred column.
- Say aloud, 543 minus 476 is 67.
- Give some question based on subtraction in two steps and ask them to practice more.

Zero has no value when written before the number given.

**Understanding**

**Expected**

**Application**
- Subtract the numbers.
  - 265 from 423
  - 664 from 945

**Analysis**

What is the difference between 845 and 678?

**Parents Connect**

Show your child a ₹500 note and ask him/her to find the balance left if you have given ₹355 to a fruit vendor.

Content Book Reference: Page 66-68
Guided Practice: Page 32-34
Learning Objective
To solve word problems on addition, step by step.

Material Required
4 steps cut-outs, (Understanding, Planning, Doing, checking) cards with problems written on them.

Activity
- Call a student and ask him/her to take out a situation card.
- Ask the student to read aloud the situation in the class. Say, the card reads, “Aman had 150 stickers in all with a big pack of chocolates. He got 56 more. How many stickers does he have in all?”
- Show the steps cut-out to the students.
- For the first step ‘Understanding’, make students listen to the problem again and gather what is to be found out.
- Make students observe what numbers are given and what needs to be found out. Stress on words and numbers, Aman, 150 stickers, 56 stickers, he have in all.
- Now, show the ‘Planning’ cut out. Bring students attention to the fact that they need to ‘add’ to find the number of stickers he have in all.
- Call a student to draw a bar model for the same.

\[
\begin{array}{c}
\text{150} \\
\hline
\text{56} \\
\text{?}
\end{array}
\]

- Next, encourage the students to solve the questions.
- Explain them that the third step is ‘Doing’.
- Share ‘Checking’ as the concluding steps. Guide students to ‘check’ that their answer is more because of adding both the numbers.
- Call out more students and continue the activity till time permits.

Application
- Mr. Khanna had a huge party at his home. He ordered for 128 pineapple pastries and 192 chocolate pastries. How many pastries has he ordered in all?

Analysis
- Draw the model for the given situation; Anu has 349 coins of a rupees in a jar. She also has 536 coins of a rupee in a money bank. How many one rupee coins does she have in all?

Parents Connect
- Take your child on a walk and show him/her to add the route number of two buses they saw.

Content Book Reference: Page 71-78
Guided Practice: Page 35-38
Lesson Plan - 5

Grade - 2

Learning Objective
To solve word problems on subtraction, step by step.

Material Required
4 step cut-outs, cards with problems written on them kept in a bowl

Activity
- Call a student and ask him/her to take out a card from a bowl.
- Now ask the student to read the problem written on the card. Say, the card reads, “There are 500 bottle caps in a box. Priya took 295 bottle caps from the box and asked Kashish to take the rest 205 bottle caps from the box. How many more bottle caps does Priya have than Kashish?”
- Show the steps cut outs to the students.
- Ask the students to recall the first step, ‘understanding’.
- Instruct the student to observe the key words 500 bottle caps, Priya, 295 bottle caps, Kashish, 205 bottle caps, more bottle caps Priya has than Kashish.
- Ask the students to recall the second step, ‘Planning’.
- Ask the student to see and follow the key words.
- Make the student draw bar model by themselves for the same.
- Ask the student, “Which was the third step?” (Doing)
- Encourage the students to solve the question.
- Ask the student to write to the given quantities in column i.e.

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<td>9</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>5</td>
</tr>
</tbody>
</table>

- Tell them that Priya has 90 bottle caps more than Kashish has.
- Conclude with them with the last steps i.e. ‘checking’; Number of bottles caps Kashish has + number of bottle caps remove. Priya has more than Kashish = Number of bottle caps Priya has = 205 +90 = 295

Application
Mr. Kumar has two daughter named Kiran and Madhvi. He gives ₹300 to Kiran as pocket money and ₹250 to Madhvi. Who gets more pocket money between the both of them?

Analysis
Draw two strips for the students. One larger than the other and ask if the smaller strips is extended more than the larger one, which of the two given quantities will be more now?

Parents Connect
While going out with the child, ask him/her to subtract the last three digits of the vehicles they come across. Extend this in the form of a situation and pose questions to strengthen the concept of subtraction.

Content Book Reference: Page 71-78
Guided Practice: Page 39-43
Activity

- Pose a situation, “Raman bought 4 bunches of bananas and each bunch consist of 3 bananas. How many bananas has he bought in all?”
- Ask the students to solve the problem and seek the answer. Visualize on board.

\[
\begin{array}{c}
\text{3} + \text{3} + \text{3} + \text{3} = 12
\end{array}
\]

- Associate the situation on the number line as:

\[
0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad 8 \quad 9 \quad 10 \quad 11 \quad 12 \quad 13 \quad 14
\]

- Share with them that they have 4 equal bunches of 3 bananas or \(3 + 3 + 3 + 3\) can also be written as \(4 \times 3 = 12\) or we can say, 4 threes = 12.
- Stress on words ‘equal groups’ and tell them 4 times 3 = 12. This is written as \(4 \times 3 = 12\).
- Share with students that ‘\(\times\)’ stands for multiplication. Multiplication is easier than repeated addition.
- Say aloud, “4 bunches of bananas, each containing 3, will be a total of 12 bananas.”
- Pair the students sitting next to each other.
- Pose another situation for the students and ask them to seek the answer making groups of using interlinked cubes.
- “Aniket has 10 packs of pencils each consisting of 5 pencils. How many pencils are there in all?”
- Share that 10 groups of 5 pencils = \(10 \times 5 = 50\)
- Continue practicing with different numbers till time permits.
Multiplication is repeated subtraction.
Every group should contain equal number of things, that’s only when multiplication is possible.

- Multiplication tables

What will be 3 groups of 5 equal to?
Complete : 9+9+9+9+9 = ______ \times 9 = ______

If there are 3 pen holders each containing 5 pens, then how many pens are there in all?

Keep 2 apples in each of the 7 plates on the dining table and ask your child to tell you, how many apples are there altogether?

Content Book Reference: Page 84-86
Guided Practice: Page 44, 45
Learning Objective
To read and write multiplication tables. (2-10)

Material Required
Base ten blocks and interlinked cubes

Activity
- Pose a situation, “Siya has 4 sets of storybooks and each set contains 5 storybooks. How many storybooks does she have?”
- Call a student and ask him/her to choose the number of blocks as they think represent one set of books. Similarly, call three more students such that each has five ones blocks.
- Ask the student to consider each set as each group of blocks and each storybook as each number of ones block.
- Tell all four students to stand in a row and display a class that each student standing in the row is representing a group holding five ones blocks in his hand.
- Show the students on the board:
  1 group of 5 = 1 × 5 = 5
  2 groups of 5 = 2 × 5 = 10
  3 groups of 5 = 3 × 5 = 15
  4 groups of 5 = 4 × 5 = 20
  Say aloud, 1 × 5 = 5  2 × 5 = 10
    3 × 5 = 15  4 × 5 = 20
- Demonstrate the same on the board:

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<td>5</td>
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<td>15</td>
</tr>
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<td></td>
<td>20</td>
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</table>

- Ask the students to write: 4 × 5 = 20
- Tell the students that the answer we get is called product.
- Now, ask the students to multiply 7 by 8 and write on the board: 7 × 8 = _____
- Associate through visualization.
• Divide the students into pairs this time and distribute them interlinked cubes and ask them to make 7 groups of 8.

• Tell the students to write the multiplication of all groups as done earlier like:

1 group of $8 = 1 \times 8 = 8$
3 groups of $8 = 3 \times 8 = 24$
5 groups of $8 = 5 \times 8 = 40$

2 groups of $8 = 2 \times 8 = 16$
4 groups of $8 = 4 \times 8 = 32$
6 groups of $8 = 6 \times 8 = 48$

7 groups of $8 = 7 \times 8 = 56$ and so on.

• Pose similar situations and ask them to find the product by making groups. Continue till time permits.

• ‘×’ is the sign of multiplication.

• Multiply.

» $8 \times 9 = $

» $6 \times 6 = $

» $9 \times 4 = $

• What will be the product of 4 groups of 7?

• Show your child a filled eggs tray and ask him/her to find the number of eggs in the tray through multiplication.
Learning Objective
To multiply two numbers (without carry over)

Material Required
Two sets of flash cards, one with multiplication questions of 2-digit by 1-digit and the other with 3-digit by 1-digit

Activity
- Place both sets of cards in separate bowls.
- Tell the students that there are flash cards in the 2 bowls with a question written on each.
- Call a student and ask him/her to take out a flash card from and the first bowl and read aloud, say, “Multiply: 34 by 2.”
- Ask him/her to pick two sets of interlinked cubes.

```
  T  O
×  3  4
    2
```

- Write on the board:
- Tell the students to find the total number of ones cubes. Share that this means multiply the ones first i.e. 4 and 2.
- Write on the board: $4 \times 2 = 8$ ones
- Ask the students to write ‘8’ in ones column.
- Now discuss the multiplication of tens. Associate with representation.

```
  T  O
×  3  4
    2
```

```
  T  O
×  3  4
    2
```

```
  T  O
+  3  4
    2
```

- Write on the board: $3 \times 2 = 30 \times 2 = 6$ Tens.
- Ask the students to write ‘6’ in tens column.
- Illustrate the representation for the same.

```
  T  O
×  3  4
    2
```

```
  T  O
4 \times 2 = 8
+ 8
30 \times 2 = 60
+ 60
8 + 60 = 68
```

- Say aloud, $34 \times 2 = 68$. 
- Frame another question but multiply 3-digits with 1-digit number this time.
- Call another student and ask him/her to take out a flash card from the second bowl containing all 3-digit number problems.
- Say to read aloud a question, say, “Multiply 123 by 3.”
- Write on the board:

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- Tell the students to recall and reiterate and follow all the steps done in two digit multiplication.

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<tr>
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<td>x</td>
<td>3</td>
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<tr>
<td>3</td>
<td>6</td>
<td>9</td>
</tr>
</tbody>
</table>

- Associate with the representation done earlier.
- Continue the activity with more such questions.

- Any number when multiplied with ‘0’ give ‘0’.
- When multiplying, not the digits instead the place values are actually multiplied.
- Multiplication tables

- Multiply:
  » 204 by 2
  » 112 by 4

- The product of 27 and 1 will be ------.
- When we multiply 123 by 2, which numbers with respect to their place value are we getting?
- Give your child a note of ₹100 three times and ask him/her how much money has he/she got?
Learning Objective
To multiply a 3-digit number by a 1-digit number (with carryover)

Material Required
A set of flash cards with multiplication question of 3-digit by 1-digit number placed in a bowl, base ten blocks

Activity
- Place the bowl of flash cards on the teacher’s table.
- Call a student and ask him/her to take out a flash card from the bowl and read aloud, “multiply 129 by 2.”
- Ask the student to form two sets of 129 using blocks.
- Write on the board:

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<tr>
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<td>2</td>
<td>9</td>
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<tr>
<td>×</td>
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</table>

- Tell the students to multiply the ones first i.e. 9 and 2.
- Tell the students that on multiplying ones i.e. $9 \times 2$, we get 18 ones in ones column and ‘1’ will be carried over on tens. Show simultaneously through blocks.
- Next, multiply the tens; $2 \times 2 = 4$ and the ‘1’ which is carried over will get added in tens i.e. $4 + 1 = 5$.
- Ask students to write ‘5’ in tens column.
- Similarly, multiply 1 hundred by 2.
- Illustrate the representation for each step.

\[
\begin{array}{cccc}
H & T & O \\
1 & 2 & 9 \\
\times & 2 & \\
\end{array}
\quad\rightarrow\quad
\begin{array}{cccc}
H & T & O \\
1 & 2 & 9 \\
\times & 2 & \\
\end{array}
\quad\rightarrow\quad
\begin{array}{cccc}
H & T & O \\
1 & 2 & 9 \\
\times & 2 & \\
\end{array}
\]

- Write on the board:

\[
\begin{array}{cccc}
H & T & O \\
1 & 2 & 9 \\
\times & 2 & \\
\end{array}
\]

\[
\begin{array}{cccc}
H & T & O \\
1 & 2 & 9 \\
\times & 2 & \\
\end{array}
\]

- 9 ones $\times 2 = 18$ ones $= 1$ Tens 8 Ones
- 2 Tens $\times 2 = 4$ Tens
- 4 Tens + 1Ten (carry) = 5 Tens
- 1 hundred $\times 2 = 2$ Hundreds

\[
\begin{array}{cccc}
H & T & O \\
9 \times 2 & = & 18 \\
20 \times 2 & = & 40 \\
100 \times 2 & = & 200 \\
18 + 40 + 200 & = & 258 \\
\end{array}
\]

18 + 40 + 200 = 258
• Say aloud, 129 multiplied by 2 gives 258.
• Call another student and ask to pick another flash card and read aloud the number, say, “Multiply 256 by 3.”
• Guide the students to follow the same steps as done before.
• Represent the same as given below:

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<td>5</td>
<td>6</td>
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<tr>
<td>× 3</td>
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6 ones × 3 = 18 ones
= 1Tens 8ones

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<td>× 3</td>
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</table>

5 tens × 3 = 15 Tens
= 15+1 ten(carry)
= 16 Tens
= 1hundreds 6 Tens

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<tbody>
<tr>
<td>2</td>
<td>5</td>
<td>6</td>
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<tr>
<td>× 3</td>
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<td></td>
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<td>8</td>
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</table>

2 hundreds × 3
= 6 hundreds
= 6 hundreds +
1hundred (carry)
= 7hundreds

• Ask the students to say aloud, the product of 256 and 3 is 768.
• Continue the activity with such more examples.

• On multiplying two numbers, the digits that get carries over is added to the next place value digit.

• Multiply:
  » 316 by 3
  » 243 by 4

• What will be the product of 3 hundreds 8 ones and 2 ones?

• Tell your child if the school bus charge ₹450 every month and if they have to give 2 months charges in advance then ask him/her to find the total money they have to deposit.

Content Book Reference: Page 96, 97, 99, 100
Guided Practice: Page 55, 57
**Learning Objective**
To solve word problems, step by step.

**Material Required**
4 step cut outs of Understanding, Planning, Solving, and Checking and roll black board with a few multiplication questions written on it.

**Activity**
- Hang the roll up black board in the class.
- Call a student and ask him/her to read aloud the first question written on the roll up black board, say, “In a 3-storey school auditorium 254 chairs placed in a single storey. How many chairs will be there in complete auditorium if they are placed equally?”
- Show the step cut outs to the students and guide them to recall the first step “Understanding”
- Instruct the students to observe the key words: 3 Storey hall, 254 chairs, Chairs in complete hall, placed equally.
- Ask the student to recall the second step, “Planning.”
- Ask the students to focus on the key words.
- Make the students draw models by themselves for the same.

```
254 chairs
254 chairs
254 chairs
?
```

- Ask the students to recall the third step, “Doing” and solve the problem.
- Ask the students to write the given quantities in column i.e.

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<td>4</td>
</tr>
<tr>
<td>×</td>
<td>3</td>
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</table>

```
7 6 2
```

- Say aloud, “There are 762 chairs in all in the auditorium.”
- Conclude with them the last step, “Checking”. Ask them if they have solved the problem correctly.
  Number of chairs in first storey + number of chairs in second storey + number of chairs in third storey
  \[= 254 + 254 + 254 = 762\]
- Pose another question to make the students practice multiplication.
• In an orchard, there are 307 apple trees planted in a single row. Find the number of apples in two rows, if both have equal number of apples.

• What can be the total number of ketchup bottles in 5 cartons stored in a factory if each carton has 134 bottles?

• Take your child to a departmental store and ask him/her to find the total number of jam bottles placed in 3 shelves if each shelf contains 25 jam bottles.
Lesson Plan - 1

Grade - 2

CHAPTER

DIVISION

Learning Objective
To divide by equal sharing and by equal grouping.

Material Required
Story books counters caps and desks.

Class/group Activity

Activity

- Write on the board, “There are 6 story books. Akash and Aman want to have equal number of books. How many books will each of them get?”
- Stress on the key words: 6 books, Akash, Aman, equal number of books, each of them get.
- Discuss the problem and seek answer in the class.
- Represent on the board:

```
Aman  Akash
[]  []
[]  []
```

- Firstly, we will give 2 books to Aman and 2 books to Akash. Now, divide the remaining 2 books equally between aman and akash.
- Conclude that each of them gets 3 books. Tell the students that there is another way to do the problem.
- Discuss with the students the concept of division using the same example.
- Divide the class into two groups and name them as ‘Aman team’ and ‘Akash team.’
- Tell them that each of the two will get same number of books.
- State them the symbol of division ‘÷.’
- Say aloud, “Divide the total number of objects into a number of groups to find the number of objects in each group.”
- Tell them “To find number of books, we divide 6 by 2.”
- Tell them that on dividing 6 by 2 we get 3. This infers that each of the two teams will get three books.
- Write the division sentence for this problem on the board = 6 ÷ 2 = 3.
- Tell them that the division sentence is read as 6 divided by 2 equals 3.
- Describe them that “Division means sharing the total into equal parts.”
- Pose another question for the students and ask the students to solve it themselves.
- Now, show another problem on the board “There are 12 counters. 3 counters are to be put into each plate. How many plates are needed?”
- Make groups of 4 students. Give 12 counters and some plates to each group.
- Ask them to put 3 counters in 1st plate. Repeat this until the all counters are put into the plates.
• Ask how many plate do they use? Seek answers and conclude that 4 plates are needed.
• Tell them we can also solve the given problem in another way.

\[
\begin{align*}
12 & \div 3 = 9 \\
9 & \div 3 = 6 \\
6 & \div 3 = 3 \\
3 & \div 3 = 0
\end{align*}
\]

• On putting 3 counters in 1st plate, we are left with \(12 \div 3 = 9\) counters. On putting another 3 counters in the 2nd plate, we are left with \(9 \div 3 = 6\) counters. Similarly, at last we are left with \(3 \div 3 = 0\) counters. So, 4 plates are needed.
• Tell them that this way of division is called “repeated subtraction”.

Division is a quicker way of repeated subtraction

• Divide 10 chocolate into 5 boys so that each of them gets the same number of chocolates.
• Divide 28 by 4.

In a family of 5, divide 20 pieces of apples such that each of the family members gets equal number of apples pieces.

Take 21 oranges and ask your child to put them into 3 bowls so that each bowl contains equal number of oranges.
Learning Objective
To divide on the number line and to show division as opposite of multiplication.

Activity
- Ask the students to write the question as follows: “Divide 12 in groups of 3.”
- Draw a number line on the board and explain the question on it as:

```
0 1 2 3 4 5 6 7 8 9 10 11 12

3 – 0 = 3 6 – 3 = 3 9 – 6 = 3 12 – 9 = 3
```
- Tell the students that 12 will be divided into 4 parts in the groups of 3.
- Ask the student to write the division sentence: 12 ÷ 3 = 4
- Divide the students into pairs now and distribute 12 cubes to each pairs.
- Ask the students to divide 12 cubes in a group of 3 one by one.
- Guide the students to join the cubes in each group.
- Ask the students, “How many parts will be formed after dividing 12 cubes in a group of 3?”
- Write on the board:

```
12 ÷ 3 = 4
12 ÷ 4 = 3
4 × 3 = 12
```
- Tell the students that 12 will be divided into 4 parts in the groups of 3.
- Ask the student to write the division sentence: 12 ÷ 3 = 4
- Divide the students into pairs now and distribute 12 cubes to each pairs.
- Ask the students to divide 12 cubes in a group of 3 one by one.
- Guide the students to join the cubes in each group.
- Ask the students, “How many parts will be formed after dividing 12 cubes in a group of 3?”
- Write on the board:

```
12 ÷ 3 = 4 or 12 ÷ 4 = 3
4 × 3 = 12
```
- ‘÷’ stands for division.

Understanding
Expected

Application
- Divide.
  » 15 by 5 
  » 10 by 2
And show them on number line.

Analysis
- What will we get on dividing 48 by 8, if 8 × 6 = 48?

Parents Connect
- Take your child on a walk and ask him/her to divide 40 bicycles standing in the parking lot such that each row consists of 10 bicycles.

Content Book Reference: Page 144-149
Guided Practice: Page 64-66
Lesson Plan - 3

Grade - 2

Learning Objective
To divide a 2-digit number by a 1-digit number (without remainder)

Activity
- Give a problem to the students and write it on the board: “Aisha has 18 pencils in a box. She wants to distribute the pencils equally among her 3 daughters. How many does each daughter gets?”
- Stress on the word “equally”.
- Ask them to divide 18 by 3.
- Ask them to count the table of 3 till they get 18.
- Instruct them to write:

```
  6
3 ) 1 8
  - 1 8
   0
```
- Tell them that the number we get on dividing is called quotient and here 6 is the quotient.
- Further, tell them the number to be divided is called the dividend i.e. 18 here and the number by which we divide is called the divisor i.e. 3 here.
- Instruct them:

```
18 ÷ 3 = 6
```

- Tell them that here remainder is ‘0’ which means no pencils are left.
- Pose another question to the student and continue the activity.

Application
- Divide 25 goats equally in a group of 5. How many goats do you get in each group?
- Divide
  » 27 by 9
  » 35 by 7

Analysis
- If 60 is the dividend and 6 is divisor, then what is the quotient?

Parents Connect
- Give your child some spoons and ask him/her to divide it into equal pairs. Practice by asking them to make groups with different numbers.

Content Book Reference: Page 144-149
Guided Practice: Page 67, 68
Learning Objective
To divide a 2-digit number by a 1-digit number (with remainder)

Material Required
A set of 23 pencils.

Activity
- Ask students to collect and give 23 pencils from the class.
- Count aloud 23 pencils in front of students and pose a question that they have to divide 23 pencils into 7 groups such that each group contains equal number of pencils.
- Write on the board: "Divide 23 by 7."
- Ask the students to count the table of 7.
- Write on the board:

```
  7 ) 2 3
     - 2 1
      -- 2
```
- Tell the students that ‘23’ will not come in the table of ‘7’ so they have to say the table till the number less than 23.
- Write on the board now:

```
  7 ) 2 3
     - 2 1
      -- 2
```
- Tell the students to recall the topic done in previous class. Here ‘23’ is the dividend, ‘7’ is the divisor, ‘3’ is the quotient and ‘2’ is remainder.
- Discuss with the students that the remainder ‘2’ clears that after dividing 23 into equal groups of pencils, ‘2’ pencils will remain ungrouped.
- Pose another question to the students and continue the activity till time permits.

Understanding
Expected
- Remainder shows how many objects are left ungrouped.

Application
- Divide:
  » 72 by 6
  » 47 by 4
  » 93 by 9

Analysis
What will be the remainder if I divide 20 mangoes into a group of 3?

Parents Connect
Ask your child to divide 26 almonds in 4 different bowls and tell you the remaining almonds left after putting them in 4 bowls.

Content Book Reference: Page 144-149
Guided Practice: Page 69-70
**Learning Objective**
To solve word problems step by step.

**Material Required**
4 step cut outs: ‘understanding, planning, doing, checking’.

**Activity**
- Write on the board:
  “Karan bought 30 chocolates to distribute among 4 of his cousins. How should he distribute the chocolates so that each cousin gets the equal number of chocolates?”
- Divide the class into 4 groups and distribute step cut outs to each group.
- Ask from the first group of students to recall and say aloud the first step, ‘understanding.’
- Ask the student to observe the question and focus the words and number: Karan, 30 chocolates, 4 cousins, divide equal number.
- Now, ask from the second group to recall the second step and say aloud, “Planning.”
- Call a student from second group and guide him/her about what is to be found out to draw a model for the same.
- Now, ask the third group to say aloud the third step, ‘Doing’ and ask all students to solve the question.
- Summarize and ask the last step from the fourth group i.e. ‘checking.’
- Encourage the class to conclude and explain them to check the problem as: Divisor × Quotient = (Dividend + Remainder)
- Continue with similar questions till time permits.

**Application**
- Divide 45 balloons from a bunch into 9 children so that each one gets the same number of balloons.
- Divide 29 by 7.

**Analysis**
- In the given statement, which of the given quantities is dividend, divisor, quotient and remainder?
  “Kunal has 32 apples in a fruit basket. He gave 4 apples to each of his 8 cousins and so no apple was left in the basket.”

**Parents Connect**
- Take your child to a nearest garden and show him/her 48 flowers. Ask him/her that if they have to be divided in 6 rows, then how many flowers will be there in each row?

**Content Book Reference:** Page 144-149
**Guided Practice:** Page 71-74
Learning Objective
To explain the division of a whole into equal parts.

Material Required
Cut-outs of squares and circles (1 per pair)

Stress Words
Equal, part

Activity
- Start with a situation. Your mother baked fresh cookies and gave one to you for school. While you were about to eat, your partner (the other student in the group) asked if they could share it with you.
- Pose a question, “How would you share the cookies equally with your friend?”
- Ask the students to divide the circular cut-out. Insist on ‘equal’ share.
- Expect various responses.
- Fold a circular cut-out vertically so that the edges meet. Tear from the middle to show equal sharing.
- Similarly, show equal sharing by tearing off the circle horizontally.
- Pose a similar situation for square shaped cookies to be divided among parents and 2 children.

Sharing equally means a whole (object) is to be divided into same parts.

Application
Draw lines to divide the following circle into.
- a) 5 equal parts
- b) 8 equal parts
- c) 10 equal parts

Analysis
In how many ways can a cookie be divided into three equal parts?

Parents Connect
Ask the child to share a chappati or idli with their sibling. Insist on sharing equally.
Learning Objective
To introduce fraction as a part of equally divided whole.

Material Required
Square cut-outs, crayons

Stress Words
Equal, whole, fraction

Activity
• Tell the students that they will be hearing stories of Ely, the baby elephant in the next few days. Ely is always hungry. So, his mother made a sandwich for him.
• Show the cut-outs of squares. Continue, as he was about to eat, his sister Eleep asked him for her share and poor Ely had to give her.
• Ask the students to show Eleep’s share. Instruct the students not to tear off the square.
• Instruct the students to colour Eleep’s share and write Ely and Eleep’s names on their parts of the sandwich.
• Pose questions like and write answers on the board.
  » What does a sandwich represent? (1 whole)
  » Into how many equal parts was it divided? (2)
  » How many parts out of 2 did Ely and Eleep take? (1 each)
  » \( \frac{1}{2} \) represents fraction.
  » Each single part into which an object is divided represents one part of the whole.

Application
Circle the unit fractions.

\[
a) \ \frac{1}{5}, \frac{6}{6}, \frac{3}{5}, \frac{2}{8}, \frac{1}{7} \\
\]

\[
b) \ \frac{4}{4}, \frac{1}{8}, \frac{2}{7}, \frac{5}{8}, \frac{1}{1}
\]

Analysis
What are the various ways into which a sandwich can be divided equally into 2 parts? (horizontally, vertically, diagonally)

Parents Connect
• When giving your child any eatables that can be divided equally, insist on sharing them with siblings or family members.
• Make the child observe the parts into which the food item was divided and part taken up by each member.

Content Book Reference: Page 129-131
Guided Practice: Page 77
### Grade - 2  Lesson Plan - 3

| Learning Objective | To explore fractions as a part of equally divided whole.  
|                   | To strengthen the concept of reading and writing fraction. |
| Material Required | Cut-outs of similar rectangles. |
| Stress Words      | Part, whole, fraction |

### Preparation
- Cut out big rectangles from thick chart papers.
- Divide each into different equal parts starting from first rectangle being divided into two, second into three and so on till eight equal parts. Keep one whole rectangle as well.
- Colour one part of each whole.

### Activity
- Start with Ely’s story. It is Ely’s birthday today and his sister Eleep gave him a chocolate.
- Show one whole rectangle to show the chocolate given.
- Ely is very happy and decided to share it with her. How would he do it?
- Invite responses. Make students understand that they will divide the whole into two.
- Show the rectangle with two divisions to demonstrate Eleep’s share. Write the parts to which the whole is divided and the part he wants to give her on the board as \( \frac{1}{2} \). Continue the story. As he was about to divide the chocolate, his friend came to wish him. Now, Ely has to divide the chocolate into three equal parts. Show the rectangle with three divisions and write the part of chocolate each one get as \( \frac{1}{3} \).
- Extend the story with more friends visiting to wish Ely and how the chocolate gets shared among more and more people.
- Make students observe that the parts to which whole is divided is written below the line and part taken by each is written above.

### Application
- Write the given fractions.
  a) Three-fifth =  
  b) Five-eighth =  

### Analysis
- A single whole can be divided into any number of equal parts.
- If 3 out of 5 pieces of a cookie is taken, which number of the two shows the pieces of cookies taken away?

### Parents Connect
Give a slice of bread and ask you child to cut it into 6 equal parts. What fraction of the slice does each part represent.

Content Book Reference: Page 131-133  
Guided Practice: Page 78-83
Lesson Plan - 1

Grade - 2

CHAPTER

SHAPES

Learning Objective
- To identify and draw a dot, a straight and a curved line.
- To identify and draw horizontal, vertical and slanting lines.

Material Required
Erasers – one with straight sides and one with curved sides, paint, a painting plate, and a piece of thread

Stress Words
Dot, curved line, straight line, horizontal line, vertical line, slanting line

Activity
- Ask the students if they have ever observed stars in the sky.
- Ask them what the stars look like.
- Conclude with them that the stars look like small dots.
- Draw 3 dots on the board at equal distance.
  .   .       .
- Tell the students that dots are called points.
- Show the two erasers to the students.
- Instruct them to observe the sides in both erasers.
- Ask them if they notice any difference.
- Point out that one eraser has only straight sides while the other has a curved side too.
- Point to the straight sides and curves when you explain.
- Join the first two dots on the board using a curved line.
- Join the second and the third dot using a straight line.
  .   .       .
- Ask the students to observe both the lines and point out the difference between them.
- Share with them:
  » The dot that I first made is known as a point.
  » The first line is slightly round. It has a curve. Such a line is known as a curved line.
  » The second line has no curve. It is a straight line.
- Draw a straight line using a ruler on the board.
- Ask the students if it is straight or curved.
- Pick students to draw more lines using rulers on the board.
- Ask again if they are straight or curved.
- Ask: Can you make a curved line using a ruler?
Conclude with them that a ruler is used to make only straight lines.

Draw more examples of dots, curved and straight lines on the board for better understanding.

Divide the class into pairs.

Give some paint, a painting plate, and a piece of thread to each pair.

Instruct the students:

- Draw a point on a sheet.
- Dip the thread in paint completely.
- Keep the thread loosely on the sheet to make a curved line.
- Stretch the thread from end to end and keep it on the sheet to make a straight line.

Allow them to repeat the activity to draw different types of straight and curved lines.

Move around the class and pick examples of horizontal, vertical and diagonal lines.

Display an example of each in front of the students.

Ask:

- Are all these lines straight lines?
- What is the difference between them?

Show to the students that one line is standing, one line is sleeping and one line is half sleeping.

Explain to them:

- A straight line that is standing is known as a vertical line.
- A straight line that is sleeping is known as a horizontal line.
- A straight line that is half sleeping is known as a slanting line.

Allow students to show their straight lines to the class and tell whether they are horizontal, vertical or slanting.

Instruct the others to verify.

Write different alphabets in capital and small letters on the board and ask the students to count the number of horizontal, vertical, slanting, curved lines and dots in each.

Continue as time permits.

Lines can be curved or straight. Straight lines can be vertical, horizontal or slanting.
Thinking Skills
• What do a triangle, square and rectangle have in common that a circle does not have?

Write a name that has alphabets consisting of only straight lines.

Parent Connect
• Ask your child to observe the sides in different objects around the house like a table, sofa, television etc. and tell whether they are made of straight or curved lines.
• Encourage him to make random shapes using matchsticks and then count the number of horizontal, vertical and slanting lines in it.

Analysis
• Can you draw a curved line using a ruler?
• Which numbers from 0-9 have only curved lines?

Thinking Skills
• What do a triangle, square and rectangle have in common that a circle does not have?
• Write a name that has alphabets consisting of only straight lines.

Application
• Identify the types of lines as horizontal, vertical or slanting.
  a. __________ b. __________ c. __________

• Circle the figures that have curved lines.
  a. __________ b. __________ c. __________ d. __________ e. __________ f. __________

Content Book Reference: Page 137-140
Guided Practice: Page 84-86
Lesson Plan - 2

Grade - 2

Learning Objective
- To identify 3-D shapes.
- To sort 3-D shapes based on their type.

Material Required
Solid shapes, a tooth paste box, a match box, a juice box, a thick book, a dice, a rubik cube, a birthday cap, ice-cream cone, a cold drink can, a beaker, a ball, a table-tennis ball and a small globe

Stress Words
Cube, cuboid, cone, cylinder, sphere

Activity
- Cut out a square from a sheet of coloured paper and show to the students.
- Hold this square flat in one hand and hold a cube in the other hand.
- Show to the students that the square is flat and has no height. The cube is solid and has a height.
- Share with the students:
  » Shapes like square, rectangle, triangle and circle are flat and have no height.
  » These shapes are known as flat shapes.
  » Shapes that have a height are known as solid shapes.
- Encourage the students to name some solid and flat shapes from around them.
- Pick some students to trace the sides of a dice and a toothpaste box on the board.
- Instruct the students to identify the resulting 2-d shapes.
- Show the students that we can trace the surfaces of solid shapes to draw flat shapes.
- Show the solid shapes one by one to the students and call out their names.
- Instruct the students to call out their names after you.

Class Activity

Sphere Cube Cuboid Cylinder Cone

- Divide the class into groups of 4.
- Give a set of solid shapes, a tooth paste box, a match box, a juice box, a thick book, a dice, a rubik cube, a birthday cap, ice cream cone, a cold drink can, a beaker, a ball, a table-tennis ball and a small globe to each group.
- Instruct the groups:
  » Separate the solid shapes given to you.
  » Pick each object given to you one by one and match it with the 5 solid-shapes.
Understanding
Expected

Pick students to share the objects of each type after they finish.

Note their responses on the board:

<table>
<thead>
<tr>
<th>Sphere</th>
<th>Cube</th>
<th>Cuboid</th>
<th>Cylinder</th>
<th>Cone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ball</td>
<td>Dice</td>
<td>Tooth paste box</td>
<td>Cold drink</td>
<td></td>
</tr>
<tr>
<td>Can</td>
<td>Birthday cap</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Table tennis ball</td>
<td>Rubik cube</td>
<td>Juice box</td>
<td>beaker</td>
<td>Ice cream cone</td>
</tr>
<tr>
<td>Globe</td>
<td></td>
<td>Thick book</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pick groups one by one to share more examples of these shapes from real life.

Instruct the other students to verify.

Note the examples in the correct column on the board.

Continue the exercise as time permits.

2-D shapes have no height. Solid shapes have a height and can be classified as cube, cuboid, cone, cylinder and sphere.

Name the shapes.

a. b. c. d. e.

Fill in the blanks using the names of solid shapes.

» Watermelon is a __________.
» A pack of butter is a __________.
» A bottle cap is a __________.

Is the shape of a 5 rupee coin a circle or a cylinder?

If the dimensions of a 2-D shape are length and breadth, what are the dimensions of a solid shape?

Rajat made a solid shape using paper folding. When he cut it into half, he got 2 cubes. Which shape could he have made? Would the shapes he got change of he cut it equally but in the other direction?

Meeta says that if you cut a cone in half, the bottom half will be a cylinder. Is she correct?

Encourage your children to observe the shape of different objects around the house like a pencil box, watermelon, glass etc. and sort them as solid shapes.

Help your children make solid shapes by paper folding and name them.
Learning Objective
To identify the properties of 3-D shapes.

Material Required
Solid shapes, straws, tape

Activity
- Divide the class into groups of 4.
- Give the solid shapes, 24 straws and tape to each group.
- Call out the name of each shape one by one and ask the students to raise and show that shape.
- Instruct the students to observe each solid and make it using straws. Tell them to hold the corners together using tape.
- Ask them to make the cone, cylinder and sphere using paper folding if they are unable to make the shapes using straws.
- Share with the students that each solid shape has faces, edges and vertices.
- Point to the faces of the solid shapes and show the faces of the shapes.
- Point to the edges of the shape and show the edges of the shapes.
- Point to the corners where the edges meet and show the corners of the shapes.
- Share with the students that edges are the straws that the students used to make the shapes. Corners are where the students put tape to join the straws.
- Ask the groups to count the faces, edges and vertices in each shape.
- Count the faces, edges and vertices of the shapes with the students and record the findings on the board.

<table>
<thead>
<tr>
<th>Shape</th>
<th>Name</th>
<th>Number of corners</th>
<th>Number of edges</th>
<th>Number of faces</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Cube" /></td>
<td>Cube</td>
<td>8</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td><img src="image" alt="Cuboid" /></td>
<td>Cuboid</td>
<td>8</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td><img src="image" alt="Cone" /></td>
<td>Cone</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><img src="image" alt="Sphere" /></td>
<td>Sphere</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><img src="image" alt="Cylinder" /></td>
<td>Cylinder</td>
<td>0</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
A cuboid and cuboid have 6 faces, 12 edges and 8 vertices.
A cone has 2 faces, 1 edge and 1 vertex.
A cylinder has 3 faces, 2 edges and 0 vertices.
A sphere has 1 face, 0 edges and 0 vertices.

What is common in a sphere, cone and a cylinder?

1. Instruct the students to observe the faces of the shapes they have formed.
2. Show them that the faces of 3-d shapes are made of 2-d shapes.
3. Ask the students to call out the shapes of faces in the 3-d shapes.
4. Conclude with them:
   a. A cuboid has rectangular and square faces or all rectangular faces.
   b. Each face of a cube is a square.
   c. A cone has a circular face and a curved face.
   d. A cylinder has 2 circular faces and a curved face.
   e. A sphere has 1 curved face.
5. Call out different properties of 3-d shapes and ask the students to identify the shape from its properties. For example, a shape has only 1 curved face, which shape is it? A shape has 0 corners, 2 edges and 3 faces, which shape is it?
6. Have the students observe the 3-d shapes if they are unable to answer.
7. Continue as time permits.

A cuboid and cuboid have 6 faces, 12 edges and 8 vertices.
A cone has 2 faces, 1 edge and 1 vertex.
A cylinder has 3 faces, 2 edges and 0 vertices.
A sphere has 1 face, 0 edges and 0 vertices.

Complete the table.

<table>
<thead>
<tr>
<th>Shape</th>
<th>Faces</th>
<th>Edges</th>
<th>Vertices</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Cube</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Cuboid</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Cylinder</td>
<td></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

Mona made a shape that has only 1 faces and no faces or edges. Which shape could it be?
True or False.

Both cube and cuboid have 6 faces, 8 vertices and 12 edges. What is the difference between them?

What is common in a sphere, cone and a cylinder?

1. Ask your child to form 3-d shapes using paper folding. Have them dip each face in the paint and trace it on a sheet to identify the 2-d shapes that make each 3-d shape.
2. Blind fold your child. Have them feel the faces, edges and vertices of a dice, a shoe box, a ball, a cap and a glass and identify the 3-d shape.
<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>To sort shapes and objects on the basis of their movement (rolling and sliding).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material Required</td>
<td>A rubik cube, a cuboid shaped pencil box, a ball, a birthday cap and a steel glass (1 each per group)</td>
</tr>
<tr>
<td>Stress Words</td>
<td>Roll, slide</td>
</tr>
</tbody>
</table>

**Activity**

- Divide the students into pairs.
- Give a rubik cube, a cuboid shaped pencil box, a ball, a birthday cap and a steel glass to each pair.
- Instruct the students to make a slide using a pencil box and notebook.
- Instruct one student in the pair to push the cube from the slide.
- Ask the students to observe how the cube moves.
- Show to the students that the cube moves along the same side, when pushed.
- Have them repeat the activity by keeping different faces of the cube at the bottom.
- Conclude with them that the cube is moving along the same side when pushed.
- Instruct one student in the pair to now push the ball from the slide.
- Ask the students to observe how it moves.
- Show to the students that the ball is moving round along its shape instead of moving along the same side.
- Ask:
  » What is the difference between the way the cube moved and the way the ball moved?
  » Why do you think both objects are moving in different ways?
  » What is each movement called?
- Explain:
  » A cube moved along the same side while the ball moved round and round along its shape.
  » This is because the cube has flat faces and the ball has a curved face.
  » The way the cube moved is called sliding. The way the ball moved is called rolling.
- Instruct the students to push the cap, glass and pencil box towards their partners and observe whether they roll or slide.
All curved faces roll and all flat faces slide.

Circle the objects that will roll.
1. Potato
2. Pack of butter
3. Orange
4. Dice
5. Onion

Write whether the object will roll or slide. Write both if an object can roll as well as slide.
1. Ice cube
2. Shoe box
3. Wheel
4. Ice - cream cone

Circle the odd object based on the movement.
1. Sandwich
2. Burger
3. Pizza
4. Cutlets

Tick the name of the object that belongs to the same category as the object below.
1. Coin
2. Dustbin
3. Ice - cream cone
4. Eraser

Ask: What is common in all surfaces that roll? That slide?
Conclude with them: All curved faces roll and all flat faces slide.
Instruct each pair to make a list of objects that roll and slide from in and around the class.
Pick pairs to share their lists.
Instruct the other students to verify.
Continue as time permits.
Thinking Skills

- Mona pushed a small dice down a slide and it rolled instead of sliding. Why do you think this happened?
- True or False? The bigger and flatter the object, the greater the chance that it will slide. Give reason of your answer also.

Parent Connect

- Make a slide using a pencil case and a notebook. Have your child push different objects down its slope and observe their movement.

- Take your child to a playground and have him pick different objects like leaves, pebbles, sticks, ball, bat, racket etc. and have them sort in 3 groups- only roll, only slide and roll as well as slide.

Content Book Reference: Page 143-147 Guided Practice: Page 90-92
Lesson Plan - 1

Grade - 2

CHAPTER

PATTERNS

Learning Objective
- To identify patterns in surroundings.
- To identify patterns in shapes.
- To make patterns using shapes.

Material Required
Pictures of animals and birds with patterns on them like butterfly, fish, zebra, tiger, leopard, snake, peacock (1 each) White handkerchief sized fabric (1 per group), paints (1 set per group), attribute blocks (geometrical seriation kit) (1 per group) (Five shapes – circle, semicircle, triangle, square and rectangle in 5 colours with each in a set of 5 sizes ranging from 2.5 cm to 12.5 cm. Students can be asked to cut out shapes from cardboard if this is not available)

Stress Words
Pattern

Activity
- Divide the class into groups of 4.
- Give a picture of an animal or bird to each group.
- Instruct the students to observe the pattern on the animal/bird.
- Ask the groups to pass their picture to the next group. The last group can pass their picture to the first group.
- Continue the activity till the students have observed patterns on all birds and animals.
- Show some sample each pictures of animals, birds one by one and ask the students to point out the pattern observed.
- Ask: What is a pattern?
- Encourage the students to look at pictures of birds and animals and describe what is similar in each pattern.
- Share with them that when the same thing gets repeated again and again, it is said to be a repeating pattern.
- Encourage the students to call out other repeating patterns that they see in surroundings for example on flowers, leaves, floor etc.
- Make the following patterns on the board.
- Ask the students:
  » What patterns do you see?
  » Are both these repeating patterns?
  » What do you notice in the second pattern?
- Show them:
  » These patterns are made of 2-d shapes.
» There is a triangle after each kite in the first pattern. Since the same shapes are being repeated over and over in a fixed way, it is a repeating pattern.

» In the second pattern, the number of triangles is growing in each step. In the first picture there is one triangle, in the next one there are two triangles, in the next one there are three triangles and so on. Since the triangles are growing in number, this is a growing pattern.

- Give a fabric, paints and geometrical seriation kit to each group.
- Tell the groups:
  » They are going to be fashion designers for the day.
  » They have to make a beautiful design by making a repeating or a growing pattern using geometrical shapes.
  » The group with the most beautiful design wins.
- Move around the class and observe the students' work.
- Pick the groups to show their designs to the class.
- Instruct the class to identify the pattern and tell whether it is repeating or growing.
- Encourage them to share how they know the pattern is repeating or growing.
- Ask the class to vote for the most beautiful design with a repeating pattern.
- Congratulate the winner group and have the class clap for them.
- Conclude the lesson by pointing that in a repeating pattern, there is a repetition of same number of shapes. In a growing pattern, the number of shapes increases in each term.

- When the same thing gets repeated again and again we see a repeating pattern.
- When the shapes in a pattern increase in next picture, it is a growing pattern.

- Manya says the pattern below is a repeating pattern. Is she correct?

- Identify the pattern as repeating or growing.

- Draw the next pattern in the series.

- How many circles will be there in the next shape?
Thinking Skills

Draw the next shape in the pattern.

» ▼ ▼ ▼ ▼

Parent Connect

- Encourage your child to identify the repeating and growing patterns in parks, buildings, clothes etc.
- Assist your child in cutting small pieces of vegetables like capsicum, carrot, lady finger etc. and use them to make repeating and growing patterns and decorate a pillow case or a t-shirt.

Content Book Reference: Page 152-155
Guided Practice: Page 93-97
### Learning Objective
- To identify patterns in numbers.
- To make patterns using numbers.

### Material Required
Ganitmala or prayer beads mala, number cards (0-100)

### Activity
- Form patterns using actions like jump, click, click, jump, click, click or click, clap, click, clap, clap, click, clap, clap, clap etc.
- Encourage the students to identify the pattern and perform the next action.
- Ask the students:
  » Which of the two was a repeating pattern? (first pattern)
  » Which of the two was a growing pattern? (second pattern)
  » What is a repeating pattern?
  » What is a growing pattern?
- Remind them:
  » A pattern in which something gets repeated over and over again is called a repeating pattern.
  » A pattern in the next object or shape increases by a specific count is known as a growing pattern.
- Pick students to show examples of same using actions like jumping, clapping, clicking, dancing etc.
- Encourage the other students to verify.
- Ask the students if numbers and alphabets can form a repeating and a growing pattern too.
- Encourage students to write examples of the same on the board.
- Show a few examples:
  » Repeating patterns:
    1, 2, 3, 1, 2, 3, 1, 2, 3
    A, B, A, B, A, B, A, B
  » Growing patterns:
    1, 2, 3, 4, 5, 6
    a, b, c, d, e, f
    a, 1, b, 2, c, 3, d, 4
- Hang the ganit mala in class. (100 beads mala can be made and hung)
- Pick students to mark numbers 3, 6, 9, 12 using number cards on the ganit mala.
- Encourage the students to see the pattern in the numbers and tell which number bead should be marked next.
• Show the students that we are adding 3 beads to each previous number to mark the next number.
• Pick students to mark the next three numbers following this pattern.
• Instruct the others to verify.
• Repeat the activity for patterns for adding 5, 7, 10 etc. for example 5, 10, 15, 20, … 7, 14, 21, 2…; 10, 20, 30, 40…
• Instruct the students to write down all patterns that they formed during the day.
• Ask them to subtract the 2 numbers next to each other and do this for all terms. For example, for 3, 6, 9, 12, 15, 18 students will find 6 – 3, 9 – 6, 12 – 9, 15 – 12 and 18 – 15.
• Pick students to share what they noticed.
• Show them that in a growing pattern, no matter which 2 consecutive terms they subtract, the difference will always be the same. This can be used to find the rule of the pattern and use it to find the next term.
• Write a few growing patterns on the board and ask the students to check if they are correct using subtraction.
• Continue as time permits.

Numbers and alphabets can have repeating and growing patterns too.
• In a number growing pattern, the difference between each two consecutive terms is the same.

Choose the correct number from the brackets to complete the pattern.
   a) 24, 29, 24, 29, 24 __________
   b) 39, 42, 45, 48 __________
• Fill in the blanks in each growing pattern.
   a) 57, 59, 61, 63, ____, 67, 69
   b) 15, 18, 15, 18, 15, ____, 15

Circle the incorrect number/alphabet in the pattern below.
   a) 57, 60, 63, 65, 69, 72
   b) B, D, F, H, I, L
• Write the next number in the series.
   a) 90, 86, 82, 78, ______
   b) a, d, g, j, ______
Thinking Skills

- Manisha write an alphabet and number pattern. What will come next?
  A  45  E  54  J  63  ____ ,  ____
- The given puzzle has the following number pattern.
  » Each row should have numbers 1-4.
  » Each column should have numbers 1-4.
  » Each small grid should have numbers 1-4.
  » Numbers 1-4 should be present in each small grid, row and column without any number being repeated.
  » Complete the puzzle on the basis of this pattern.

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Parent Connect

- Ask your child to make a repeating and growing patterns using the alphabets in his/her name.
- Give your child number cards 1-20. Have him/her pick some number cards at random. Encourage him/her to try to form a pattern using the number cards they have picked.
Lesson Plan - 1

Grade - 2

MEASUREMENT

Learning Objective
- To understand the need for standard units of length.
- To identify metre and centimetre as standard units of length.
- To measure lengths of small objects using a ruler.

Material Required
Ruler, chart paper, scissors, ribbons of length 3 cm, 5 cm, 8 cm and 9 cm

Stress Words
Metre, centimetre

Activity
- Divide the class into pairs.
- Give a chart paper and scissors to each pair.
- Instruct each pair to cut out a 3 handspan long chart out of it.
- Instruct some pairs to come to the front with the 3 handspan long piece of chart.
- Have all the pairs compare the length of charts one by one.
- Ask:
  » Are all the charts of same length?
  » If everyone cut out a 3 hand span long chart, shouldn’t everyone’s chart be of same length?
  » Why is there a difference in the length of charts?
  » What should we do so that everyone’s chart is of the same length?
- Explain using students’ response:
  » Everyone’s hand is of different size so the size of handspans is different. As a result, the length of 3 handspans is different in many charts.
  » To get the same length, we use standard units of length metre and centimetre.
  » Metre is used to measure long objects
  » We use a metre scale to measure the length in metres.
  » Centimetre is used to measure small objects.
  » We use a ruler to measure the length in centimetres
- Instruct the students to observe the width of the door frame.
- Point out that the width of the door frame is about 1 metre long.
- Encourage the students to give examples of objects that will be measured in metres.
- Start by giving examples such as a bedsheet, saree, table, car etc.
- Give a ruler to each pair.
- Instruct the students to observe the distance from 0 to 1.
• Share with the students that the length of this distance is 1 cm.
• Encourage the students to give examples of objects that can be measured in cm.
• Start by giving examples such as a pencil, eraser, crayon etc.
• Encourage the students to think and share how a ruler can be used to measure the length of small objects.
• Demonstrate using a small ribbon:
  • Keep one end of the ribbon at 0.
  • Stretch the ribbon.
  • Read the marking at the other end of the ribbon.
  • This marking tells the length of the ribbon in cm.
• Give a 3 cm, 5 cm, 8 cm and 9 cm long ribbon to each pair.
• Instruct the students to measure the length of each ribbon using the ruler.
• Move around the class and guide the students, as needed.
• Stress upon the fact that the ribbon must be kept at the marking against 0 and not at the corner of the ruler.
• Pick students to share the length of the ribbon and show how they measured it.
• Give more objects to measure the length if time permits.
• Non standard units vary in size so give different measurements of length.
• Standard units of length give the same measurement.
• Metre and centimetre are standard units of length.
• Metre is used to measure long objects but centimetre is used to measure short objects.
• To measure an object using ruler, keep its one end at the marking against 0 and read the marking where the other end touches the ruler.

Understanding
Expected

Application

Analysis

• Which of the following are standard units of length?
  a) Handspan   b) Cubit   c) Metre   d) Centimetre
• Write the unit of length (m or cm) for each object.
  a) Spoon       b) Wall    c) Eraser    d) Saree
• Use a ruler to draw a line segment of length 5 cm.
• Which is the correct method to measure length using a ruler?
  a)

  0 1 2 3 4 5 6 7 8 9 10

  b)

  0 1 2 3 4 5 6 7 8 9 10
Thinking Skills

• Radhika kept a pencil at the corner of the ruler instead of keeping it at the 0 marking. Will the length shown by the ruler be more or less than the actual length? (less)

• Is the length of the ruler same as the number written against the last marking? Why or why not? (No, a ruler is longer than the number at the last marking because its corners extend before and after the marking)

Parent Connect

• Observe different objects around your house that can be measured in cm. Measure their length with your parents using your and their handspan and then using a ruler. Which tool – handspan or ruler gave the same length when measured by each of you?

• Measure the length of small objects around your house like a spoon, notebook, pencil, pen etc.

Content Book Reference: Page 162-163

Guided Practice: Page 102, 103
Narrate: Rajshri bought a 44 cm piece of red wool and a 39 cm piece of blue wool to knit socks for her grandson. What is the total length of the wool that she bought?

Ask:
» How will you find the answer?
» How can we add units of length?

Conclude using students’ responses:
» We need to add the length of red and blue wool to find the total length of the wool.
» We can add units of length just like regular numbers.

Demonstrate on the board:

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<td>8</td>
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Conclude with the students: Rajshri bought 83 cm wool in all.

Ask further:
» Which colour wool is longer?
» By how much?
» How will we find this?
» Can we subtract units of length like regular numbers?

Conclude with the students:
» 44 cm > 39 cm so red wool is longer
» To find ‘by how much the red wool is longer,’ we need to take away 39 from 44.
» We can subtract units of length just like regular numbers.

Demonstrate on the board:

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Red wool is 5 cm longer than blue wool.

Share with the students that they are going to play a game.

Divide the class into pairs.
• Give some unit cubes to each pair and a ruler to each student.
• Share the rulers:
  » You will say start
  » Each student will start making a tower by connecting unit cubes.
  » They will stop when you say stop.
  » Each student will measure the length of the tower they were able to
     make using a ruler.
  » Students will see whose tower is longer and by how much.
  » Students will find the total length of both towers.
  » The pair whose total length is longest in class wins the game.
• Begin the game by saying start.
• Move around the class and check if the students are able to add and
  subtract lengths correctly and confidently.
• Guide them, as needed.
• Repeat the activity as time permits.
• Share with the students that units in metres can be added in the same
  way as regular numbers too.
• Write the following problems on the board and instruct the students to
  solve in pairs.
  » Rajan walked 83 m to a park. On the way back, he took a short cut
    and walked 79 m back home.
    ‣ What is the total distance he walked?
    ‣ How much shorter is the distance when the short cut is used?
  » Shalini is 1 m 12 cm tall. Ritika is 1 m 5 cm tall.
    ‣ How much taller is Shalini as compared to Ritika?
    ‣ What is the sum of their heights?
• Solve them on the board with the students. (83 + 79 = 162, 83 – 79 = 4)
• Ask the students how they would solve the second problem.
• Conclude with them that they have to add metres to metres and
  centimetres to centimetres. In the same way, they subtract centimetres
  from centimetres and metres from metres.
• Demonstrate:

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<thead>
<tr>
<th>Metres</th>
<th>centimetres</th>
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<td>0 0 0 7</td>
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<table>
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<tr>
<th>Metres</th>
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<td>0 1 0 5</td>
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<td>0 2 1 7</td>
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• Continue by writing more problems on addition and subtraction of
  length as time permits.
Units of length are added and subtracted just like regular numbers.

- **Add:**
  a) 56 cm and 13 cm  
  b) 15 m and 29 m  
  c) 2 m 12 cm and 3 m 43 cm

- **Subtract:**
  a) 43 cm – 10 cm  
  b) 65 m – 23 m  
  c) 7 m 15 cm – 3 m 9 cm

- Aman’s is 1 m 38 cm tall. Akanksha is 24 cm shorter than Aman. What is Akanksha’s height?
- Radhika walks 30 m 12 cm from her house to the market and then 12 m 56 cm from market to school. What is the distance travelled by her?
- The combined length of two ropes is 3 m 40 cm. If one rope is 1 m 12 cm shorter than the other, what is the length of both ropes?
- Find some short objects around your house that can be measured using a ruler like a pencil, crayon, spoon etc. Measure their lengths. Choose any two objects and add their lengths. Then keep the two objects to form a single straight line and measure the combined length. Is the combined length same as the sum of their lengths?
- Find the distance to other rooms in your house from your room in metres and centimetres. How much farther is the farthest room from the room closest to your room?
## Learning Objective
- To understand the need for standard units of weight.
- To identify kilogram and gram as standard units of weight.
- To measure weights of objects in kilogram and gram using a pan balance

## Material Required
Weighing balance, 1 kg apple, marbles, coins, standard weights – 1 g, 5 g, 10 g, 20 g, 50 g, 100 g, 200 g, 500 g and 1 kg apple to weigh objects.

## Stress Words
Kilogram, gram

## Activity
- Display the weighing balance in class.
- Ask the students:
  - What is this?
  - What is it used for?
  - How do we use it?
- Remind the students:
  - This is a weighing balance which is used to compare and measure weight.
  - To measure the weight of an object, we keep the object whose weight is to be measured on one side of the balance.
  - On the other side we keep the weights. We keep adding the weights till both the pans are at same height.
  - The sum of weights is the weight of the object.
- Keep 1 apple on one side of the balance.
- Pick students to measure the weight of the apple using the marbles first and then the coins.
- Write the weight of the apple in terms of marbles and coins on the board.
- Ask:
  - How can the same apple have two different weights?
  - What should we use so that we always get the same weight?
- Explain:
  - The coin and marbles have different weights so we need a different number of coins and marbles to balance the pan with apple.
  - To always get the same weight of apple, we should use an object that always weigh the same.
  - We use the units gram and kilogram.
  - The weight of 1 gram and 1 kilogram always stays the same.
  - Grams are used to measure light weights like 1 teaspoon sugar, weight of an apple etc. Kilograms are used to measure heavy weights like a bag of apples, a watermelon, chair, table etc.
Gram and kilogram are standard units of weight.  
Grams are used to weigh light objects and kilograms are used to weigh the heavy objects.  
The sum of weight that it takes to balance the weight of the object on the other pan is the weight of the object.

Understanding Expected

Kartik put a sandwich on one side of the balance and a weight of 10 g and 50 g on the other side of the balance. The side with the weights is lower than the side with the sandwich on it. What should Kartik do?

a) put another weight of 10 g on the side with weights  
b) remove 10 g weight from the side of weights  
c) write the weight of the sandwich as 60 g

Application

Which of the following are standard units of weight? (c and d)

a) apples  
b) marbles  
c) grams  
d) kilograms

Write the weight of the given objects. (a. 500 g  
b. 1 kg 500 g)

Analysis

Which of the following would weigh about 1kg? (d)

a) a coin  
b) an apple  
c) a marble  
d) 4-5 apples

Shri put a watermelon on one side of the balance and weights of 50 g, 200 g, 500 g and 1 kg on the other side of the balance. If both the pans are at the same height, what is the weight of the watermelon?

Thinking Skills

Kartik put a sandwich on one side of the balance and a weight of 10 g and 50 g on the other side of the balance. The side with the weights is lower than the side with the sandwich on it. What should Kartik do?

a) put another weight of 10 g on the side with weights  
b) remove 10 g weight from the side of weights  
c) write the weight of the sandwich as 60 g

Parent Connect

Make a list of objects around your house that can be weighed in grams and the ones that can be weighed in kilograms.

Go for fruit and vegetable shopping with your parents. Observe how the vegetable or fruit seller weighs the fruits and vegetables you buy.
Learning Objective
To add and subtract units of weight.

Material Required
Weighing balance, 10 g, 50 g, 100 g, 200 g, 500 g, 1 kg weights (several weights) to measure weight, Box 1: a shoe box with 2 kg salt  Box 2: A shoebox with 1 kg sugar Box 3: shoe box with 250 g biscuit pack  Box 4: a shoe box with 200 g biscuit pack, Box 5: a shoe box with 1 kg salt and a 250 g biscuit pack, Box 6: a shoe box with 1 kg salt and 500 g salt

Activity
- Keep the weighing balance on the table.
- Pick students to measure the weight of each box one by one using standard weights.
- Allow the remaining class to assist him in adding and removing weights to balance the pan.
- Write the weight of each box on the board as the students conclude the weight:
  - Box 1 = 2 kg  
  - Box 2 = 1 kg  
  - Box 3 = 250 g  
  - Box 4 = 200 g  
  - Box 5 = 1 kg 250 g  
  - Box 6 = 1 kg 500 g
- Ask: What is the total weight of box 1 and box 2?
- Pick a student to put the two boxes one on top of the other and weigh them.
- Point out that the total weight of boxes is 2 kg + 1 kg = 3 kg.
- Show them that measures of weight are added in the same way as regular numbers.
- Repeat the activity to find the total weight of box 3 and box 4.
- Show them that grams are also added like regular numbers.
  - 250 g + 200 g = 450 g
- Ask the students how they can find the total weight of box 5 and box 6 without weighing them together.
- Explain to them that just like units of length, for units of weight, we add the grams together and the kilograms together.
- Demonstrate on the board:

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- Verify the sum by weighing box 5 and box 6 together on the pan balance.
- Ask the students if the weights can be subtracted like regular numbers too.
- Divide the class into pairs.
• Instruct the students to find:
  » How much heavier is box 1 as compared to box 2
  » How much heavier is box 3 as compared to box 4
  » How much heavier is box 6 as compared to box 5
• Pick students to share the answers and show the solution on the board.

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	ext{g} & \\
1 & 4 & 0 \\
-1 & 2 & 5 \\
0 & 2 & 5 \\
\end{array}
\]

• Change the weight of each box on the board and ask the students to find the total weight and difference between the weights as time permits.

Kg is added to kg and g are added to g.

• Add the weights: (a. 22 kg  b. 312g  c. 3 kg 633 g)
  a) 14 kg and 8 kg       b) 125 g and 187 g       c) 1 kg 362 g and 2 kg 271 g
• Subtract the weights: (a. 5 kg   b. 38g  c. 2 kg 097 g)
  a) 18 kg – 13 kg       b) 185 g – 147 g       c) 3 kg 273 g – 1 kg 176 g

• Weight of a watermelon is 3 kg 500 g. The pumpkin weighs 1 kg 250 g less than the watermelon. What is the weight of the watermelon? (2 kg 250 g)
• An airline allows 23 kg 500 g baggage per customer. Shyam’s bag has 21 kg 150 g weight. How much more weight can he put in the bag? (2 kg 350 g)

• Sharan used 1 kg 300 g flour from a bag and filled it with 650 g flour. If 3 kg 900 g flour is left is in the bag, how much flour was there to begin with? (4 kg 550 g)
• A bag of 1 kg 560 g salt of and a bag of 1 987 g sugar are kept together on a weighing machine. What weight will be shown on the weighing machine if 1000 g = 1 kg. (3 kg 547g)

• Weigh yourself and your parents on a weighing scale. Find out how much heavier your father is as compared to your mother and how much heavier your mother is as compared to you.
• Go to grocery shopping with your parents. Read the weight behind each item and find the total weight of the bag you are carrying.
Learning Objective
- To understand the need for standard units of capacity.
- To identify litres and millilitres as standard units of capacity.
- To add and subtract units of capacity.

Material Required
Plastic cups of water (2 sets of different sizes, 5-6 cups in each set) A medicine bottle, a 250 ml shampoo bottle, a 500 ml oil bottle, a 1L oil bottle, a 2L water bottle, a 5L oil or water bottle

Stress Words
Litre, Millilitre

Activity
- Show a 1L bottle to the students.
- Ask the students how much water is in the bottle.
- Measure the capacity of the bottle by pouring water into the small cups.
- Count the number of cups filled with the students.
- Write the capacity of the bottle on the board in terms of small cups.
- Pour the water from the cups back into the bottle.
- Repeat the activity to write the capacity of the bottle on the board in terms of big cups.
- Point to the different capacities of the same bottle.
- Ask:
  » How can the same bottle have 2 different capacities?
  » What should be used so that we always get the same capacity?
- Explain:
  » The same bottle has different capacities because we used different sizes of cups to measure its capacity.
  » To get the same measure every time, we use units litre and millilitre.
  » 1L water and 1ml water always stay the same in quantity and don’t change with the size of containers.
- Pass around different containers (A medicine bottle, a 250 ml shampoo bottle, a 500 ml oil bottle, a 1L oil bottle, a 2L water bottle, a 5L oil or water bottle) around the class and instruct the students to read out the quantity of liquid in them.
- Write all ml quantities on one side and all litre quantities on the other side of the board.
- Keep all the ml bottles together and all the litre bottles together.
- Ask the students to observe the unit and the size of bottles.
- Show them that small bottles have quantities in ml and big bottles have quantities in litres.
• Explain to them that ml is used to measure small quantities of liquids and litres are used to measure big quantities of liquids.
• Call out different objects like a spoon, bucket etc. and ask the students whether their capacity will be measured in L or ml.
• Share with the students:
  » We often need to add and subtract quantities of liquids to find total quantity of liquid or quantity of liquid left.
  » Just like length and weight, for capacities too the same units are added and subtract together. That is, litres are added to litres and millilitres are added to millilitres.
• Solve some examples on the board to demonstrate:
  1L      500 mL      2 L 145 mL
  +3L      +250 mL      1 L 375 mL
  4L      750 mL      3 L 520 mL
• Write the following problems on the board and ask the students to solve them in pairs:
  » There is 23 L water in the small bucket and 45 L water in the big bucket. How much water is there in both buckets?
  » 250 mL solution is to be mixed with 545 mL paint. What will be the total quantity of paint after mixing both?
  » There was 3L 273 mL water in a jug. Mohit drank 1L 137 mL of it. How much water is left in the jug?
• Discuss the solutions with the students one by one.
• Continue the exercise by giving more problems on addition and subtraction of capacity.

Understanding
Expected

Application

Litres are added and subtracted together and millilitres are added and subtracted together.

• Add:
  a) 16 L and 26 L   b) 736 mL and 26 mL   c) 1L 375 mL and 3L 163 mL
  (Ans: a) 42 L   b) 762 mL   c) 4L 538 mL)
• Subtract:
  a) 87L – 36 L   b) 264 mL – 198 mL   c) 5 L 947 mL – 3 L 736 mL
  (Ans: a) 51L   b) 66 mL   c) 2L 211 mL)
• The capacity of a bucket is 20L 176 mL. If there is 18L 10 mL water in the bucket, how much more water can be filled in the bucket? (2L 166 mL)
• Kriti is making a drink that required 489 mL orange juice and 145 mL pineapple juice. What is the quantity of the drink that she will be able to make? (634 mL)
Thinking Skills

- There is 12 L 120 mL petrol in the tank of a car. Rajesh used 3 L 5 mL of it and then filled it with 4 L 284 mL petrol. Is the new quantity of petrol more or less than the original quantity? (More)
- A jug had 3 L 234 mL water. Kartik filled 872 mL more water in the jug before it started to spill. What is the capacity of the jug? (4 L 106 mL)

Parent Connect

- Read the quantity of shampoo behind different sized shampoo bottles and calculate how much more shampoo is there in the bigger bottle as compared to the smaller bottle.
- Find out the quantity of different types of oil and ghee in your kitchen and add them to find their total quantity.
Lesson Plan - 1

Grade - 2

CHAPTER

TIME

10

Learning Objective
- To read and write time to the hour.
- To find elapsed time to the hour.

Material Required
Analogue clock (1 per pair)

Stress Words
O clock

Activity
- Divide the class into pairs.
- Give an analogue clock to each pair.
- Ask:
  - What is this?
  - What is it used for?
  - What will happen if it stops working?
- Discuss:
  - This is a clock.
  - We use a clock to tell the time.
  - If our clocks stop working, we will not be able to tell the time and we will be late for everything.
- Instruct each pair to observe what they see on the clock.
- Show them and explain:
  - A clock has numbers from 1 to 12 that tell time in hours and minutes.
  - There are 2 hands on the clock.
  - One hand is long and one is short.
  - The short hand tells the time in hours.
  - The long hand tells the time in minutes.
- Ask the students what time they wake up in the morning.
- Note the times that they call out, say, 6 o’clock, 7 o’clock etc. on the board. (If the students don’t know the time they wake up, say that you wake up at 6 o’clock, your son wakes up at 7 o’clock etc.)
- Ask the students if they have observed the hands on the clock when they wake up.
- Set the minute hand on 12 and hour hand on 6 and say: the time is 6 o’clock. This is the time when ________ (name of student) wakes up.
- Ask the students:
  - Which number is the hour hand pointing to?
  - Which number is the minute hand pointing to?
Write on the board: hour hand: 6  minute hand: 12  6 o’clock
Repeat the activity for setting the time to 7 o’clock, 8 o’clock and 9 o’clock.
Ask the students to look at each time on the board and the numbers the minute hand and hour hand are pointing to.
Encourage them to see a pattern.
Show them that the time is to the full hour, the hour hand is pointing to that hour and the minute hand is pointing to 12.
Set different times on the clock like 10 o’clock, 2 o’clock etc. and ask the students to tell the time.
Call out different times to the hour and ask the students to set the time on their clocks and show to the class.
Instruct the class to look around and verify.
Set the time on the clock to 3 o’clock and ask the students to tell time.
Move the minute hand of the clock from 12 to 12 so that the hour hand moves to 4.
Ask: What did you notice?
Say:
» When the minute hand moves from 12 to 12, 1 hour passes.
» It takes 1 hour for the hour hand to move from 1 number to the next.
» The time on the clock is now 4 o’clock.
Repeat the activity by moving the minute hand from 12 to 12 and showing the time 5 o’clock.
Explain that minute hand moved around the clock 2 times from 12 to 12. The hour hand moved 2 numbers from 3 to 5. Thus, 2 hours have passed from 3 o’clock to 5 o’clock.
Show 2 clocks to the students.
Set the time on the first clock to 5:00 and on the second clock to 8:00.
Ask: How many hours have passed from 5 o’clock to 8 o’clock?
Move around the minute hand of the clock from 12 to 12 three times so that the hour hand moves from 5 to 8.
Show the students that the minute hand moved 3 times from 12 to 12 so 3 hours have passed from 5:00 to 8:00.
Explain: Hour hand has passed from 5 to 6 and 6 to 7 and 7 to 8 so 3 hours have passed.
Repeat the activity by setting different time to the hours on both clocks and asking the students to find the elapsed time.
Verify their answer with students by moving the minute hand from 12 to 12 till you reach the end time as well as counting the hours.
Continue as time permits.
When the minute hand is at 12, we read the time on the clock as o’clock.

It takes 1 hour for the minute hand to move from 12 to 12.

It takes 1 hour for the hour hand to move from 1 number to the next.

The number of rounds taken by minute hand from 12 to 12 tells how many hours have passed between both hours.

- Read the time on the clock.
  - a.  
  - b.  
  - How many hours have passed from the time in a. to time in b.

Radhika says that in one hour, the minute hand will move from 12 to 1 and the hour hand will from one number to the next. Is she correct?

The minute hand of the clock is pointing to 12 and the hour hand is pointing to 2. What time will it be after 1 hour?

Radhika slept at 9 o’clock at night. She woke up 9 hours later. What was the time on the clock?

Ask your child to observe the clock at different hours of the day and tell the time to the hour.

Ask your child to note the time when he goes out to play and when he comes back. Have him calculate the number of hours that passed.
**Learning Objective**
- To read the time to 5 minutes on an analogue clock.
- To identify the relationship between hour and minutes.

**Material Required**
Analogue clock with minute markings on it, small post its, marker

**Activity**
- Show the analogue clock with minute markings to the students.
- Set the time to 1 o’clock and ask the students to read the time.
- Remind them and explain:
  » When the minute hand is at 12, and the hour hand is at a number, we read that number in hours with o’clock.
  » The time shown by the clock is 1 o’clock.
  » It means 1 hour and 0 minutes.
- Ask the students: Does the minute hand always stay at 12?
- Move the minute hand around the clock and show to the students that the minute hand is at different numbers at different times.
- Ask: How do we tell the time when the minute hand is pointing to other numbers?
- Show the minute markings to the students and explain that we can count these markings till the minute hand to find the time in minutes.
- Count the minute markings on the clock with the students by pointing to each small marking.
- Write the multiples of 5 (5, 10, 15, 20, 25, 30…) on the post its and paste them next to the number as you count the minutes with the students.
- Point out that there are 60 minutes in 1 hour.
- Set the time on the clock to 1:05.
- Count the minute markings from 12 to 1 with the students.
- Point to 5 written on the post it next to 1.
- Share with the students that the time is 1 hour 5 minutes.
- Repeat the activity by setting the time at 5 minute intervals to 1:10, 1:15, 1:20, 1:25 and so on till 1:55.
- Ask the students if it is easy to tell the time by counting minute markings.
- Encourage them to find the relation between the numbers on the clock and the minutes on the post its.
1 hour = 60 minutes

When the minute hand is pointing to a number other than 12, start from
12 and skip count by 5 till the number the minute hand is pointing to, to
tell the time in minutes.

1 hour = 60 minutes
When the minute hand is pointing to a number other than 12, start from
12 and skip count by 5 till the number the minute hand is pointing to, to
tell the time in minutes.

Fill in the blank.
1 hour = ___________ minutes

Read the time on the clock.
a. b. c.

Draw the hand on the clock to show the given time.
a. 5:10 b. 7:45

What is the time in minutes if the minute hand is pointing to 7 and the
hour hand is pointing to 3? (3:35)

If there are 60 minutes in one hour, how many hours are there in 180
minutes?
On a clock, the hour hand is pointing to 3 and the minute hand is pointing
to 11. What will be the time 15 minutes later?

Have your child read the time when the minute hand is pointing to a
certain number at different hours of the day.
Set different times on the digital clock with minutes in multiples of 5 and
ask your child to set the same time on the analogue clock.
Learning Objective
To read time to half and quarter hour

Material Required
Circle cut out (2 per pair), analogue clock, erasable marker

Stress Words
Half past, quarter past, quarter to

Activity
- Divide the class into pairs.
- Give 2 circle cut outs to each pair.
- Instruct the students to cut the circle into 2 equal parts.
- Ask the students to raise and show the two parts of the circle.
- Show the two halves of the circle to the class and say:
  » This circle is divided into 2 equal parts.
  » Each part is half of a circle.
- Display the analogue clock in class.
- Ask the students how the clock can be divided into half.
- Draw a vertical line joining 12 and 6 using an erasable marker.
- Remind the students that it takes 1 hour for the minute hand to go from 12 to 12.
- Move the minute hand of the clock from 12 to 6 SLOWLY.
- Show that
  » it has covered half of the clock.
  » it has covered half of an hour
- Ask the students to read the time on the clock after covering half of the hour.
- Share with the students
  » When the time is 30 minutes past the hour, half an hour has passed.
  » So we can read the time has half past the hour.
  » For example, 3:30 will be read as half past 3, 6:30 will be read as half past 6, 9:30 will be read as half past 9 and so on.
- Set different times on the clock with minute hand at 6 and instruct the students to tell the time using “half past”
- Instruct the students to cut the second circle into 4 equal parts.
- Ask the students to raise and show the four parts of the circle.
- Show 4 quarters of a circle to the students and say:
  » This circle is divided into 4 equal parts.
  » Each of the 4 parts is called a quarter.
- Ask: How can we divide the clock into 4 parts?
- Draw a horizontal line joining 9 and 3.
• Show that the clock is now divided into 4 quarters.
• Ask the students to count the minute markings and tell how many minutes are there in each quarter.
• Conclude with them that there are 15 minutes in each quarter.
• Move the minute hand on the clock from 12 to 3.
• Show to the students that the minute hand has covered one quarter.
• Ask the students to tell the time.
• Explain to them that since the minute hand has covered quarter of an hour, we can read the time has quarter past the hour. For example, 4:15 will be read as quarter past 4. 6:15 will be read as quarter past 6. 10:15 will be read as quarter past 10 and so on.
• Set different times on the clock with minute hand and 3 and ask the students to tell the time using “quarter past”
• Move the minute hand of the clock from 12 to 9 slowly.
• Ask the students:
  » How many quarters of the hour has the minute hand covered?
  » How many quarters remain to complete the next hour?
• Ask the students to tell the time on the clock.
• Explain to them that when the minute hand is at 9, we can say that the time is 3 quarters past the previous hour or quarter to the next hour. For example, 11:45 can be read as 3 quarters past 11 or quarter to 12, 4:45 can be read as 3 quarters past 4 or quarter to 5 and so on.
• Set different times on the clock with minute hand at 9 and ask the students to tell the time using “three-quarters past” and ‘quarter to’.
• Also set times with minute hand at 3 and 6 and ask the students to tell the time using phrases quarter and past.
• Continue as time permits.
• When the minute hand is at 6, we read the time as half past the hour.
• When the minute hand is at 3, we read the time as quarter past the hour.
• When the minute hand is at 9 we read the time as three quarters past the hour or quarter to the next hour.
• Write the time using ‘half and quarter’.
  • a. 7:30    b. 5:45    c. 8:15
• Which time will the clock strike first – quarter to 12 or quarter past 12?
• How many minutes are there in half, quarter and three quarters of an hour?
• Draw the hands on the clock to show the time.
Thinking Skills

- a. quarter past 11
- b. quarter to 3.

- What time is it in hours and minutes if the time on the clock is 3 quarters to 7?
- What time will it be after 15 minutes from 3 quarters past 11?
- How many quarter hours are there in half hour?

Parent Connect

- Ask your child to read the time to the hour. Ask him to read the time after every 15 minutes using the terms quarter and half.
- Point out when quarter hour, half hour and three quarter of hours have passed to give your child a sense of how long each duration is. Do this at various times of the day.
Lesson Plan - 4

Grade - 2

Learning Objective
To tell the time using a.m. and p.m.

Material Required
Analogue clock

Stress Words
a.m., p.m.

Activity

• Narrate:
  Richa was very excited. Richa’s father had gone on office tour. He had
called and told her that his train was arriving at 9 o’clock and asked her
to pick him up. Richa couldn’t wait to see what he had got for her. She
started getting ready at 6 and reached the station by 8:30. Soon it was
9 o’ clock. His train would arrive any minute. Richa waited and waited
but the train did not come. She got worried. She approached the station
manager and requested him to check for the train Sabarmati express.
“Ma’am, he said, “the train does not arrive at 9 in the evening. It arrives
at 9 in the morning. Your father will come tomorrow morning at 9.”

• Ask:
  » What had happened?
  » Why do you think Richa got confused?

• Set the time to 12:00 and ask the students to tell the time.
• Tell the students that the time is 12 at midnight.
• One by one change the hours till its 12 again and ask the students to tell
  the time at every hour.
• Write every hour on the board.
• When the hour hand reaches 12 again, share with the students that the
time is 12 at noon.
• Change the time every hour again and ask the students to tell the time at
every hour.
• Write every hour on the board.
• Show to the students:
  » The clock strikes the same hour 2 times every day.
  » This is why Richa got confused.
• Ask: What can we do to avoid such confusions?
• Explain to the students:
  » To avoid such confusions we write each time of the day with a.m.
    and p.m.
  » The time from 12 at midnight to 11:59 in the morning is written with a.m.
  » The time from 12 at noon to 11:59 at night is written with p.m.
  » To remember it, morning comes before evening and a comes before p.
So morning time and a.m. are written together and evening time and p.m. are written together.

- Make the following diagram on the board to reinforce the concept.

```
[Diagram showing AM and PM with time slots from 12:00 to 12:00]
```

- Pick students to call out the different activities that they do during the day and the time at which they do it.
- Ask the remaining class to tell the time with a.m. or p.m.
- Continue as time permits.

The time from 12:00 at midnight to 11:59 in the morning is written with a.m.
The time from 12:00 at noon to 11:59 at night is written with p.m.

- Write the following times with a.m. or p.m.
  a. Going to school: 8:00 _____
  b. Coming back from school: 2:00 _____
  c. Playing in the evening: 6:00 _____
  d. Brushing your teeth: 7:00 _____

- Match each meal of the day with a.m. and p.m.
  Breakfast  a.m.
  Lunch       a.m.
  Dinner      p.m.

- Raju closes his eyes and starts praying at 11:59 and stops at 12:01. If he prays from a.m. time to p.m., at which time of the day does he pray?
  a. 11:59 at night to 12:01 at midnight
  b. 11:59 in the morning to 12:01 at noon

- Which of the following activities do you start in p.m. and complete in a.m.?
  a. going to school     b. sleeping at night

- Which of the following movies started in the a.m. and finished in the p.m.?
  a. Start time 11 at night, end time 1 in the morning
  b. Start time 12 in the noon, end time 2 in the afternoon.
  c. Start time 11 in the morning, end time 1 in the evening.
  d. Start time 12 at night and end time 2 in the morning.

- Ask your child to read the time at different activities that they do during the day using a.m. and p.m.
- Ask your child to make a list of all activities that they do in p.m. and all activities they do in p.m. At which part of the day do they do more activities?
### Learning Objective
- To identify the days and months in a year.
- To identify the number of days in a week and each month
- To understand the relationship between different units of time.

### Material Required
Pocket calendar of current year (1 per pair)

### Activity
- Divide the class into pairs.
- Give a pocket calendar to each pair.
- Ask the students what it is and what it is used for.
- Share with the students that it is a calendar and it is used to tell the day on each day of the year.
- Point to the calendar and show them:
  - The days in a year are divided into months.
  - The calendar for each month has name of the month written above it.
  - Each month is further divided into days.
- Ask the students to observe the calendar and tell:
  - What are the names of the months?
  - Which are the first and last months?
  - How many months are there in all?
  - How many days are there in each month?
  - How many days are there in a year?
- Conclude with them:
  - There are 12 months in a year – January, February, March, April, May, June, July, August, September, October, November and December.
  - January is the first month of the year.
  - December is the last month of the year.
  - January, March, May, July, August, October and December have 31 days each.
  - April, June, September and November have 30 days each.
  - February has 28 days in a normal year and 29 days in a leap year.
  - There are 365 days in a normal year and 366 days in a leap year.
- Show the students that they can remember the number of days in each month using their knuckles.
- Instruct them:
  - Make fists in your hands and keep them so that your knuckles are facing you.
  - Start counting the months on high and low points on your knuckles starting from January at the high point.
There are 12 months (Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec) or 52 weeks or 365 days in a year.

We can remember the number of days in each month using our knuckles.

There are 7 days in a week – Mon, Tue, Wed, Thur, Fri, Sat and Sun.

10th of May is a Sunday. What day will it be on 13th of May?

How many days will be there in 3 weeks and 4 days?

Ask your child the day it is and ask questions like what day it will be tomorrow, what day was it yesterday to help him remember the order of days of the week.

Ask your child to find the day on each festival and public holiday like 26 Jan, Holi, 15 August, Rakhi, Diwali, Christmas, Id, 2 October etc.

Notice the number of days for the months in the calendar at all the high points on your knuckle.

Notice the number of days for the month in the calendar at all the low points.

Ask the students what they noticed and conclude with them that the months at all the high points on knuckles have 31 days and months at all the low points have 30 days. February has 28/29 days.

Instruct the students to count the names and number of days in a week and number of weeks in a year.

Conclude with them:

There are 7 days in a week – Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday

There are 52 weeks in a year.

Ask the students what day is it on 7th of April?

Show the students how to locate number 7 in April and look at the day mentioned on the calendar against it.

Call out different dates and ask the students to tell the day on that day.

Continue as time permits.

There are 12 months (Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec) or 52 weeks or 365 days in a year.

We can remember the number of days in each month using our knuckles.

There are 7 days in a week – Mon, Tue, Wed, Thur, Fri, Sat and Sun.

Write the number of days in the following months.


Fill in the blanks to write all days of the week.

Sunday  _________________  _________________

Wednesday  _________________  Friday  _________________

Which is the first month of the year that has 30 days?

How many months have 30 days in a year?

Which date is it on first Sunday of April?

10th of May is a Sunday. What day will it be on 13th of May?

How many days will be there in 3 weeks and 4 days?

Ask your child the day it is and ask questions like what day it will be tomorrow, what day was it yesterday to help him remember the order of days of the week.

Ask your child to find the day on each festival and public holiday like 26 Jan, Holi, 15 August, Rakhi, Diwali, Christmas, Id, 2 October etc.
### Lesson Plan - 1

#### Grade - 2

**Chapter 11**

**MONEY**

#### Learning Objective
To write rupees and paise together using a dot

#### Material Required
Play notes and coins, boxes

#### Activity
- Divide the class into pairs.
- Place some play notes in one box and some play coins in another box on the teacher’s desk.
- Invite each pair to come forward and ask one of them to pick either 1 or 2 play notes from the box and other to pick 1 play coin from another box.
- Ask them to observe the amount picked by them and write that using rupees and paise together, e.g. a note of ₹5 and a coin of 50 p will be written as ₹5 and 50 p
- Repeat the activity with all other pairs and let them write the amount in rupees and paise together.
- Now ask all pairs to rewrite the amount written earlier, erase the paise or p from that amount and place a dot instead of that, i.e. ₹5.50.
- Help students to read amount in words, say ₹5.50, in words it is read as Rupees 5 and 50 paise.
- Show a note of ₹10 to entire class and help them to understand that it can be written as ₹10.00, where 00 denotes paise.
- Show a note of ₹20 and a coin of 25 paise and ask students to write the amount in rupees only, i.e. ₹20.25
- Conclude that rupees and paise can be written together using a dot. The left part of dot represents rupees and right part shows paise.

**Pair Activity**

**Express rupees and paise together as rupees using a dot/point**

- Express in numerals
  - Rupees four hundred twenty-three and twenty-five paise
  - Rupees seventy-three and fifty paise

**Write these amounts in words:**
- ₹45.30
- ₹112.45

**Thinking Skills**
- Anshul has a note whose value is 5 more than ₹45 and a coin whose value in paise equals 2 tens and 5 ones. How much amount does she have?
- Deepa has three notes of ₹5 and five coins of 50 p with her. How much amount does she have?

**Parent Connect**
- Ask your child to observe a few bills and find the amount written in rupees and paise together in rupees. Ask them to write the amount in words.

**Content Book Reference:** Page 193  
**Guided Practice:** Page 134
<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>To make various combination of rupees and paise to get certain amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material Required</td>
<td>Notes of Indian Currency, Sets of play notes/coins, slips</td>
</tr>
</tbody>
</table>

### Activity

- Show a few notes of Indian currency and lead students to identify each coin and note.
- Get students to work in groups of four. Divide each group further into pairs.
- Provide distinct sets of play notes/coins to each pair of group such that both sets or pairs form same amount, e.g. a pair gets four notes of ₹5 and another pair of same group gets two notes of ₹10, so that both make ₹20.
- Ask each pair of each group to find the amount the given set of play notes/coins together make/equal?
- Let each group come up with a result that both sets of play notes/coins make same amounts.
- Lead students to understand that different combination of notes/coins may make same amount.
- Ask students “Can they make same amount in any other combination?” Let them attempt to answer the posed question and come up with a distinct combination for the same amount, e.g. if amount is ₹20, then a note of ₹10 + 2 notes of ₹5, or 5 coins of ₹2 + 10 coins of ₹1 also equals ₹20. Now, again ask students to work in same groups.
- Provide a set of play notes to each group (include 4 notes of ₹1, 2, 5, 10, 20 and 50).
- Distribute a slip to each group on which distinct amounts are written whose value is less than ₹250.
- Ask them to make an amount equal to the given amount on the slip in two distinct combinations, e.g. If amount is ₹123 = ₹50 + ₹50 + ₹10 + ₹10 + ₹2 + ₹1 and also, ₹50 + ₹20 + ₹20 + ₹20 + ₹10 + ₹2 + ₹1.
- Conclude that various combination of notes and paise can be made for a certain amount.

### Understanding

#### Expected

Students will be able to form various combination of money to get an amount

### Application

- Juhi had a note of ₹50, 2 notes of ₹10, three notes of ₹5 and a coin of ₹2. How much amount did she have?
• How much amount does the given combination make?

• Sheetal had five coins of ₹5, ten coins of ₹10 and twenty coins of ₹1. Find can she buy a toy for ₹55 and an umbrella for ₹62 from distinct shops? If yes, find the combination of money.

• Pooja has three notes of ₹10 and four notes of ₹20. She bought a can of juice costing ₹50. In how many ways can she pay the amount if she bought only that item?

• Ask your child to observe the coins and notes in his/her money bank and make various combination for ₹100.

• Ask them to observe the grocery bills and find various combination of money to pay those bills.

Place an appropriate comparison symbol in following:

»

»
## Lesson Plan - 3

### Grade - 2

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>To convert rupees into paise and paise into rupees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material Required</td>
<td>Current notes and coins of Indian currency, Play coins of 50 p, ₹1</td>
</tr>
</tbody>
</table>

### Activity

- Show various notes (include notes of ₹5, 10, 20, 50, 100 and 500) and coins of Indian currency to entire class and review the fact that rupees and paise together form the Indian currency.
- Show a coin of ₹1 and 50 p and help students to observe the denomination written along with numerals on the coins as well as in words.
- Show two coins of 50 p and help students to understand that 2 coins of 50 p make 100 p or Rupee 1, i.e. ₹1 = 100 p.
- Write the relation between rupees and paise on the board i.e. ₹1 = 100p.
- By referring to multiplication operation, explain that as ₹1 = 100 p, so ₹2 = 2 x 100 = 200 p, ₹3 = 3 x 100 = 300 p and so on.
- Tell students that to convert rupees into paise, multiply the given rupees by 100 or place two zeroes towards right of given amount.
- Now get students to work in pairs. Provide set / sets of play coins of 50 p to each pair such that two adjacent pairs get distinct number of coins (take maximum 20 coins of 50 p for a pair), e.g. a pair get 2, 4, 6, 8, 10 coins of 50 paise.
- Ask them to find the total amount they have, i.e. how much paise or rupees they have, say a pair has 6 coins of 50 p, then they have 300 p (by skip counting/adding or multiplying they can find that 6 coins of 50 p make 300 p) or ₹3
- Help students to understand that 200 p = ₹2, 300 p = ₹3 and so on.
- Tell students that to convert paise into rupees, divide the given paise by 100 or just remove last two zeroes, i.e. from ones and tens place.
- Conclude that to convert rupees into paise, multiply by 100 and for converting paise into rupees, divide by 100.

### Understanding

Students will be able to express given amount in rupees into paise and paise into rupees.

### Expected Application

- Convert following in rupees
  - 500 p
  - 700 p
  - 1200 p
  - 2100 p
- Convert following into paise
  - ₹3
  - ₹8
  - ₹10
  - ₹20
Thinking Skills

Suresh had 3 coins of 50 p, 4 coins of 1 rupee, 5 coins of 2 rupees. Find how much amount did Suresh have and convert the amount in paise.

Analysis

- Anshu had 4500 p while Manju had 39 rupees. Who has more amounts?
- Payal had 67 rupees in her purse while Supriya had 76 rupees in her purse. Who has more paise?

Parent Connect

- Take students to visit a shop/mall, observe the price tags there and ask them to convert the listed amount into paise.
- Ask students to find the total amount collected in their money/money bank and convert that amount into paise.
Lesson Plan - 4

Learning Objective
To add given amounts

Material Required
Objects (pencil sets, pen sets, note books, stickers, crayons, ball etc) with their price tags

Activity
- Place certain objects (pencil sets, pen sets, note books, stickers, crayons, ball etc) with their price tags (show price tags in rupees only) on a desk.
- Get students to work in pairs.
- Invite each pair to come forward and choose any two items they want to buy.
- Ask them to observe the price tags of selected items and note down that in their notebooks.
- Ask them to find the amount to be paid for selected items.
- Take an example of two items; say a notebook costing ₹32 and a pen costing ₹29 are selected.
- Draw following figure on the board for better visualisation of the situation and help students to realise the use of addition operation for solving the given problem.

```
₹29

+ ₹32

? 
```

- Explain the column method of addition for example under consideration, i.e. ₹29 + ₹32
- Show addition of given amounts on the board and tell students to add rupees similar to addition of numbers and follow regrouping rules wherever applicable (regroup 10 ones as 1 ten, and 10 tens as 1 hundred).
- Show that ₹29 + ₹32 = ₹61

```

<table>
<thead>
<tr>
<th></th>
<th>₹</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td>+</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>
```

- Now write following addition problem on the board:
- Add ₹14.50 and ₹20.25
- Help students to recall that rupees and paise are written together in the given problem and dot separates rupees and paise.
- Explain the column method of addition here again, but emphasize to place the digits/numerals carefully in columns.
Students will be able to add two or more amounts

- Explain here that add paise to paise and rupees to rupees and for that make column for rupees, a column separating rupees and paise and a column for paise.

- Show the addition of ₹14.50 and ₹20.25 results ₹34.75

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>₹</td>
<td>p</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>+</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>7</td>
<td>5</td>
</tr>
</tbody>
</table>

- Write following problem on the board: ₹4.50 + ₹5.50

- Explain that if sum of paise results more than 100 paise, we convert them into rupees, i.e. ₹4.50 + ₹5.50 = ₹9 and 100 paise. Now since 100 paise equals ₹1, therefore total becomes ₹9 + ₹1 = ₹10

- Conclude that while adding money if amounts are given in rupees; add them simply as we add numbers and the result would be in rupees. In case if amounts are written in rupees and paise add paise separately and rupees separately, use regrouping rules.

Students will be able to add two or more amounts

- Mansi bought crockery set for ₹345 and a school bag for ₹123. Find how much amount did she spent on shopping?
- Tanuja bought a juice can for ₹35.50 and an ice-cream for ₹50.50. Find how much amount she spent on items.

Add following:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>₹</td>
<td>p</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>+</td>
<td>5</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>+</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

Anu bought a dress for an amount equal to five tens and 1 hundred. She also bought a gift for her mother costing an amount equal to twice of 9 tens. How much amount did she pay for all bought items?

Provide a few bills to children and ask them to check the total of those bills.
Lesson Plan - 5

Grade - 2

Learning Objective
To subtract given amounts

Material Required
Chits on which amounts are written in rupees and paise together using dots

Activity

- Call forward two students.
- Ask one of them to be a customer and other to be vendor.
- Tell vendor to sell a compass box for ₹140 to customer.
- Provide two play notes of ₹One hundred to customer and ask him/her to buy the compass box from the vendor.
- Ask rest of the students to observe the situation and find whether the customer will get some amount in return or not!
- Draw following figure on the board to visualise the situation and help students to realise that customer had paid more amount than the required (₹200 > ₹140). Therefore he/she will get return back some amount and for that subtraction operation needs to be applied.

\[
\begin{array}{c|c}
₹140 & ? \\
\hline
\hline
₹200 & \\
\end{array}
\]

- Explain column method of subtraction, i.e. subtract rupees from rupees as simply we do for numbers and follow regrouping rules where ever required, i.e. 1 ten is regrouped as 10 ones and 1 hundred are regrouped as 10 tens. Show subtraction of ₹140 from ₹200 as shown below on the board.

\[
\begin{array}{r|rrr}
\text{₹} & 2 & 1 & 0 \\
\hline
- & 1 & 4 & 0 \\
\hline
0 & 6 & 0 \\
\end{array}
\]

- Now, get students to work in pairs.
- Provide a chit to each student of a pair such that distinct amounts are written on chits in rupees and paise together.
- Ask them to identify the larger amount and subtract the smaller amount from that. E.g. say the larger amount is ₹87.50 and smaller amount is ₹49.20
- Explain them to arrange the rupees and paise in respective columns and subtract paise from paise and rupees from rupees.
• Ask them to follow the regrouping rules as they do for numbers. Show the subtraction of ₹49.20 from ₹87.50 as shown below on the board:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>₹</td>
<td>p</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>8 7</td>
<td>7 5 0</td>
</tr>
<tr>
<td>− 4 9</td>
<td>2 0</td>
</tr>
<tr>
<td>3 8 3 0</td>
<td></td>
</tr>
</tbody>
</table>

• Conclude that for subtracting two amounts when amounts are expressed in rupees, subtract them as similar to numbers. In case if amounts are expressed in rupees and paise, subtract paise from paise and rupees from rupees and follow regrouping rules if needed.

Students will be able to apply subtraction operation on money

• Jatin had ₹400 with him. He spent ₹278 on playing various video games in a game zone. How much amount is left with him?

• Maya had ₹98 50 p in her purse. She bought some vegetables and paid ₹69 50 p to vendor. How much amount is left in her purse?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>₹</td>
<td></td>
</tr>
<tr>
<td>−</td>
<td>4 4</td>
</tr>
</tbody>
</table>

Subtract following:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>₹</td>
<td>p</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>1 9 5</td>
<td>3 6 5 5 0</td>
</tr>
<tr>
<td>− 4 4</td>
<td>− 2 9 2 2 5</td>
</tr>
</tbody>
</table>

Juhi had three notes of ₹50 and two notes of ₹100 with him. He spend an amount equal to ₹20 less than ₹256 on buying food items. How much amount is left with him?

Involve your ward in various activities related to money exchange and help him/her to apply subtraction operation on money.
**Learning Objective**
- To be able to understand the meaning of data.
- To read and interpret the given pictograph.

**Material Required**
Sets of play coins (including coins of ₹1, 2, 5 and 10), Copies of pictographs

**Activity**
- Get students to work in pairs. Provide a set of at least six play coins (include coins of ₹1, 2, 5 and 10) to each pair. Ask them to observe the denomination of coins and count the number of coins of each denomination.
- Then randomly ask a few questions to some pair of students, e.g. how many coins of ₹1, ₹2 and ₹5 they have?
- Tell students that such kind of information which involves numbers is called data.
- Present following examples to explain the meaning of data and help students to understand that answers of following statements/questions are called data.
  - Number of pencils and erasers each pair have
  - Number of students who got 20 marks or more in last test
  - Number of students who like football game
  - Number of students whose favourite colour is blue etc.
- Show following graph to students or draw given graph on the board and lead them to recollect the name of shown graph as pictograph.

<table>
<thead>
<tr>
<th>Favourite colour</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>🌿🌿🌿</td>
</tr>
<tr>
<td>Red</td>
<td>🌿🌿🌿🌿</td>
</tr>
<tr>
<td>Yellow</td>
<td>🌿🌿🌿🌿</td>
</tr>
<tr>
<td>Pink</td>
<td>🌿🌿🌿🌿</td>
</tr>
</tbody>
</table>

= 2 Students

- Tell students that a pictograph is graph that uses shapes, symbols or pictures to represent data.
- Lead students to collect the information represented in the given/shown pictograph, i.e. the graph shows the favourite colour of some students in a class.
- Help students to identify the number of students represented by used key/symbol in the pictograph, i.e. 2 here
Application

The given pictograph shows the number of visitors in a library over few days of a week. Look at the given pictograph and answer the following questions:

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursdays</th>
</tr>
</thead>
<tbody>
<tr>
<td>😊</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
</tr>
<tr>
<td>😊</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
</tr>
<tr>
<td>😊</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
</tr>
</tbody>
</table>

= Students

Analysis

The given pictograph shows number of particular coins in the money bank of Raju. Look at the pictograph and answer the following question:

» How many coins of 50 p does Raju have?
» How many coins of ₹5 does Raju have?

<table>
<thead>
<tr>
<th>Coins</th>
<th>Number of coins</th>
</tr>
</thead>
<tbody>
<tr>
<td>🅰️</td>
<td>△ △</td>
</tr>
<tr>
<td>🅱️</td>
<td>△ △ △ △ △ △ △</td>
</tr>
<tr>
<td>🅲️</td>
<td>△ △ △ △ △ △ △</td>
</tr>
<tr>
<td>🅳️</td>
<td>△ △ △ △ △ △ △</td>
</tr>
<tr>
<td>🅴️</td>
<td>△ = 2 Coins</td>
</tr>
</tbody>
</table>
### Thinking Skills

Refer the given pictograph and find if there are total 12 toys altogether with Binod and Khushi, what does each key/symbol represent?

<table>
<thead>
<tr>
<th>Name</th>
<th>Number of toys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aman</td>
<td>✈✈</td>
</tr>
<tr>
<td>Binod</td>
<td>✈✈✈✈</td>
</tr>
<tr>
<td>Khushi</td>
<td>✈✈✈✈</td>
</tr>
<tr>
<td>Rahul</td>
<td>✈✈✈✈✈✈</td>
</tr>
</tbody>
</table>

### Parent Connect

Ask children to observe the pictographs in newspapers and school magazines and collect information represented in those pictographs.
Learning Objective

To organise data in tables.

Activity

- Get students to work in two teams and name them as team 1 and team 2
- Invite each student of a team 1, to come ahead and write the number of pencils and erasers altogether each has in his compass box on the board, e.g. 3, 4, 5, 3, 6, 4, 3, 5, 6, 4, 3, 4, 5, 6
- Ask all students to arrange the data in ascending order, i.e. from lowest to highest and write each data without leaving any data, even if it is repeated.
- Write the ascending order of given data on the board as follows: 3, 3, 3, 3, 3, 4, 4, 4, 4, 5, 5, 5, 6, 6, 6
- Now ask a few related questions, e.g. how many students have 3 pencil and erasers, how many students have 4, 5 and 6 pencils and eraser altogether.
- Help students to understand that to know the number of students for a particular number of objects, each and every data has to be counted even if it is repeated.
- Now ask them to arrange these data in table form and for that ask them to draw two columns and name them as number of objects and number of students respectively like shown below. Tell students that the given table shows a row and 2 columns.

<table>
<thead>
<tr>
<th>Number of objects</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>

- Then ask them to draw a row for each number/ type of objects and then fill the respective number for that object in second column of that row and fill the table as shown below:

<table>
<thead>
<tr>
<th>Number of objects</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
</tr>
</tbody>
</table>

- Then ask them to write the total in last row to check whether they have counted each and every data or missed any. E.g. here total of students equals 15.
Students will be able to arrange data in a table.

### Understanding

#### Expected

#### Application

#### Analysis

- Now invite each student from team 2 to come forward and write the name of transport they use to come to school every day. For example, bus, bus, cycle, auto, auto, car, car, bus, auto, bus, car, cycle.

- Now ask all students to arrange the data in an organised way, i.e. bus, bus, bus, auto, auto, auto, cycle, cycle, car, car.

- Now ask them to find the number of students, who come by bus, come by auto, by cycle and by car.

- Then ask them to make a table, i.e. draw two columns and name them as mode of transport and number of students and then fill the required data in the table as shown below.

<table>
<thead>
<tr>
<th>Mode of transport</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus</td>
<td>4</td>
</tr>
<tr>
<td>Auto</td>
<td>3</td>
</tr>
<tr>
<td>Cycle</td>
<td>2</td>
</tr>
<tr>
<td>Car</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
</tr>
</tbody>
</table>

- Conclude that using tables’ data can be shown in an organised way and it is easy to read organised data.

Students will be able to arrange data in a table

- The given data shows marks of some students in a test. Arrange the data in a table.
  12, 14, 15, 18, 20, 12, 15, 14, 12, 18, 20, 15, 16, 14, 15, 20, 18

- The given data shows favourite toy of some students. Arrange the data in a table:
  Teddy bear, ball, doll, car, car, teddy bear, doll, doll, car, ball, ball, teddy bear.

- Following data shows number of family members each students have in their family: Arrange data in a table form:
  5, 6, 4, 8, 3, 8, 5, 4, 8, 3, 10, 5, 6, 10

<table>
<thead>
<tr>
<th>Number of family members</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>
Thinking Skills

The given table shows data for number of holidays in various months of a year. Find following:

» How many holidays are there in next month of March?
» How many are total holidays are there in first half year?

<table>
<thead>
<tr>
<th>Month</th>
<th>Number of holidays</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>4</td>
</tr>
<tr>
<td>February</td>
<td>2</td>
</tr>
<tr>
<td>March</td>
<td>3</td>
</tr>
<tr>
<td>April</td>
<td>4</td>
</tr>
<tr>
<td>May</td>
<td>1</td>
</tr>
<tr>
<td>June</td>
<td>2</td>
</tr>
</tbody>
</table>

Parent Connect

Ask your child to keep record of various things, e.g. time spent on playing, reading etc. for every day of the week and arrange that data in the form of a table.