

PROFESSIONAL DEVELOPMENT FOR QUALITY EDUCATION

# Mathematics Teachers' Guide Lesson Plans

# Grade 1



**Quaid-e-Azam Academy for Educational Development, Punjab**  
Wahdat Road, Lahore



## PREFACE

The Quaid-e-Azam Academy for Education Development (QAED), Government of Punjab, was tasked with developing teacher guides on the Single National Curriculum (SNC) 2020. For this purpose, a team of education experts and teachers from government and non-government institutions was engaged. The subject specialists from Material Development Wing supervised this task. The teams not only critically reviewed the entire guide but also ensured the incorporation of its recommendations.

While developing this guide, the team recognized that instructional settings and availability of resources vary significantly in the province of Punjab. Therefore, considering the important aspects of SNC and active learning, a contextually relevant teaching process has been devised to ensure student learning outcomes.

On behalf of Quaid-e-Azam Academy for Education Development, Government of Punjab, I am deeply grateful to all involved in creating this guide. I hope that this book will be helpful for teachers to teach effectively and enable them to perform their duties properly.

Thank you,  
The Director General  
Quaid-e-Azam Academy for Educational Development,  
Government of Punjab





## Mathematics – Teacher Guide

### Introduction

The Government of Punjab School Education Department notified Single National Curriculum (SNC) in 2021. To ensure its effective execution, Quaid-e-Azam Academy for Educational Development has taken the following initiatives:

- Organized a professional development program for teachers to enhance their understanding of SNC
- Develop teacher guides to improve instructions at the school level.

Through these initiatives, the teachers will be able to:

- Observe the alignment between SNC, Academic Calendar & Textbooks.
- Ensure the achievement of student learning outcomes given in SNC
- Equip themselves with new teaching techniques.
- Create an interactive learning environment.

Active Learning promotes students to learn by doing through collaborative activities such as problem-solving, role-playing, watching others, arguing, and many more.

Students will not passively acquire material owing to engaging activities and several types of evaluation. The objective is to improve students' capacity to think critically and creatively via the application of innovative instructional strategies and flexible evaluation techniques.

Using this form of instruction, students' knowledge will develop, their social skills will blossom, and their feeling of community will grow.

The course material is designed to have students thinking critically and solving mathematics problems that they'll encounter in the real world. For students to be able to defend their mathematical reasoning and understand the interconnectedness of mathematical ideas, we will arm them with the skills they need to do so.

We hope that they'll learn to apply mathematics not just to their coursework, but also to other areas of life.

To encourage the independence and self-confidence of students as learners, a range of instructional strategies are deployed to create an environment conducive to attaining the desired results.

SNC recommends that teachers utilize a range of materials, not simply the prescribed textbooks and teacher's guides.





### About SNC

SNC emphasizes developing analytical, critical, and creative thinking through a more activities-based approach rather than static teacher-centric learning. Furthermore, it focuses on equipping learners with principles and attributes such as truthfulness, honesty, tolerance, respect, peaceful coexistence, environmental awareness & care, democracy, human rights, sustainable development, global citizenship, personal care, and safety (SNC 2020).

- The SNC is standards, benchmarks, and outcomes-based across all subjects.  
The components of the curriculum are given below:
  - **Competency:** A key learning area involving applied skills and knowledge enabling learners to perform successfully in educational, professional, and other life contexts.
  - **Standard:** It defines competency by broadly specifying the knowledge, skills, and attitudes to be acquired by students in a particular key learning area during the first five years of schooling.
  - **Benchmarks:** Further elaborate the expectations about what learners know under each standard, indicating what the students will accomplish at each developmental level to meet the standards.
  - **Student Learning Outcomes (SLOs):** These are built upon the descriptions of the benchmarks and describe (in key points) what students will accomplish at the end of each unit.

Along with standards and benchmarks, the curriculum also provides a progression matrix containing SLOs grade-wise. For further detail, please refer to the SNC 2020 for the specific subject. In addition, this guide includes lesson plans based on student learning outcomes and textbook content developed by Punjab Textbook Board.





**Key Components of Lesson Plan:**

**TEMPLATE FOR LESSON PLAN**

**Topic**

**Lesson plan No.**

**Grade:**

**Time:**

**SLO:**

**Material / Resources required:**

**Information for Teachers:**

- New concepts
- New ideas
- Teaching tips

**Introduction:**

- Warm up
- Brainstorming
- Elicitation
- Mind map etc.

**Development:**

Activity1

Activity2 (Minimum two activities)

**Conclusion / Sum up / Wrap up:**

**Assessment:** Focus will be on formative assessment

**Follow up:**

- home work
- written work
- project
- oral assignment etc.



## List of Selected Students Learning Outcomes (SLOs)

### Mathematics-I

Sr. No

Selected Students Learning Outcomes

#### Unit 1: Whole Numbers

1.

- Identify numbers 1-9
- Identify 0 as a number
- Read and write numbers up to 9 in numerals and in words
- Arrange numbers in ascending and descending order (up to 9)
- Identify which number (up to 9) comes before and after a given number
- Between two given numbers
- Identify 10 as a 2-digit number
- Compare and order the numbers 0-10
- Read and write numbers up to 99
- Count forward and backward up to 99
- Recognize and identify the place value of a specific digit in a 2-digit numbers (tens and ones)
- Decompose a number up to 99 to identify the value of a number in tens and ones place
- Compare 1-digit and 2-digit numbers, Order the set of numbers form 0-99 in ascending and descending order
- Identify which number (up to 99) comes before and after a given number
- Between two given numbers,
- Count in tens and recognize 100 as a 3-digit numbers,
- Identify and write missing numbers in a sequence from 1 to 100
- Count and write numbers of objects in a given set
- Identify the position of objects using ordinal numbers such as first, second, tenth
- Compare two or more groups of objects in terms of numbers,
- Match objects having one-to-one correspondence
- Identify the number of objects in two groups to show "more than" and "less than"





## Unit 2: Number Operations

2.

- Compare numbers from 1 to 20 to identify "how much more" one is from another.
  - Recognize and use symbols of addition "+" and equality "="
- Construct addition sentence from given picture or number stories
- Add two, 1-digit numbers sum up to 9
  - Construct addition sentence from given picture or number stories
  - Add a 2-digit number to a 1-digit number
  - Construct addition sentence from given picture or number stories
  - Add a 2-digit number to 10s
  - Add two, 2-digit numbers
  - Construct addition sentence from given picture or number stories
  - Recognize the use of symbol to represent an unknown (include questions that sum up to 20),
  - Add numbers (up to 20) using mental strategies by using real life examples
  - Construct addition sentence from given picture or number stories
  - Compare numbers from 1-20 and find "how much less" one is than other?
  - Recognize subtract as a difference and take away, and use the symbol "-",
  - Subtract 1-digit number from 1-digit number,
  - Subtract 1-digit number from 2-digit number,
  - Subtract tens from 2-digit number,
  - Subtract 2-digit number from 2-digit number (which result in positive)
  - Subtract numbers (up to 20) using mental strategies involving real life situations.,
  - Construct subtraction sentences from the given pictures or number stories

## Unit 3: Measurement

3.

- Compare the lengths of two or more objects using the following terms
- Long, Longer, Longest
- Short, Shorter, Shortest
- Tall, Taller, Tallest
- High Higher, Highest
- Compute the masses of two or more objects using the terms;
- Heavy, Heavier, Heaviest
- Light, Lighter, Lightest

## Unit 4: Money

4.

- Identify Pakistani currency coins (Rs 1 and Rs 2, 5, 10),
- Identify Pakistani Currency notes (Rs 10, 20, 50 and 100)
- Match a group of coins/notes to an equivalent group of different denominations
- Add and subtract money using the prices of objects transactions, e.g. toys
- Add different combinations of coins/ notes (to make sum up to 100)





### Unit 5: Time

- 5.
- Read and tell the time in hours from the analog clock for example 2 o' clock
  - Read and tell time in hours from the digital clock
  - Identify which day comes after/ before a particular day

### Unit 6: Geometry

- 6.
- Recognize and identify shapes of similar objects in daily life
  - Identify Basic Shapes (Rectangle, Square, Circle, Oval, Triangle)
  - Match Similar Basic Shapes in daily life
  - Distinguish basic shapes by considering their attributes (sides)
  - Classify 2-D shapes according to the number of their sides and corners
  - Identify the next shape in the patterns with 2 or 3 elements
  - Extend a given pattern of 2 or 3 elements
  - Identify where an object is placed
  - Inside Outside
  - Above or Below
  - Over or Under
  - Far or Near
  - Before or After of a given picture





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## WHOLE NUMBERS

### Concept of Zero “0” / Counting

**Duration:** 40 Minutes**Students Learning Outcomes:**

- Identify numbers 1-9
- Identify 0 as a number.



**Materials:** Number card 0, empty object cards, toy animals/animal pictures (lion, parrot, snake, fish, hen, leech, roundworm, dolphin, etc.), multimedia (mobile, computer, laptop with internet), number “0” worksheets given at the end (according to number of students), balloons, number blocks 0 – 9, Mathematics Textbook Grade 1

### Information for Teachers:

- Our English word zero comes from the Arabic word *sifr*. It's the same Arabic root that gives us the word cipher, which can mean something that was done in secret.
- Though people have always understood the concept of nothing or having nothing, the concept of zero is relatively new; it fully developed in India around the fifth century A.D.
- "Zero and its operation are first defined by Hindu astronomer and mathematician Brahmagupta in 628," said Gobets. He developed a symbol for zero: a dot underneath numbers.
- Zero, both as a symbol (or numeral) and a concept meaning the absence of any quantity, allows us to perform calculus, do complicated equations, and to have invented computers.
- Without zero there would be: No algebra, no arithmetic, no decimal, no accounts, no physical quantity to measure, no boundary between negative and positive numbers and most importantly- no computers.
- The number zero is a whole number (counting number). The number zero is not a positive number. The number zero is not a negative number, either. The number zero is a neutral number.

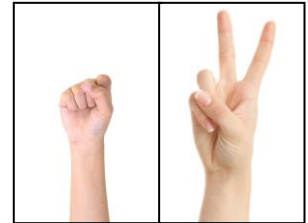
### Teaching Tips:

Here are some tips that will help to teach the number “0” to students:

- Use concrete objects like counters, beads, etc. to explain the concept.
- The storytelling method is helpful to clarify the concept.

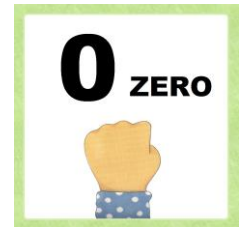
### Introduction:



- Show some toy animals/animal pictures one by one to students and ask them to count the legs of each animal and show them with the help of their fingers.
- For example, show a toy parrot/picture of a parrot to students and ask about the number of legs. Ask them to show the number with the help of their fingers.
- Similarly, show a toy snake/picture of a snake to students and ask about the number of legs. Collect their response, then tell them we use a punch to show “no legs”.
- Now show them toy dolphin, lion, horse, hen, leech, round worm, frog, snail, fish, etc., one by one to students and ask about the number of legs. Ask them to show the number with the help of their fingers.



### Development:

Tell the students about the shape and value of the number 0 by showing a flashcard of zero and empty objects. Tell them zero means “nothing” and it looks like an oval. In Mathematics, we show “nothing” with zero. As fish have no legs so we will represent it by the number “0”.



<p><b>0 Nothing</b></p>	<p><b>0 leaf</b></p> 	<p><b>0 egg</b></p> 
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### Activity 1:

- Hold a few balloons in your hand and show them in front of the class.
- Now give all these balloons to any student in the class.
- Tell the students, now I have ‘no’ balloon in my hand.
- It means I have ‘zero’ balloons and I will represent it by the number zero (write the number 0 on the board) and show the number zero with a punch.
- Repeat the activity by taking different objects or showing picture cards and telling stories accordingly.



**Activity 2:**

- Put number cards/blocks on the table and ask the students to identify the number “0”.
- Ask the students to identify the number zero in their surroundings like calendar, watch, mobile, keyboard, etc.

**Activity 3:**

- Demonstrate the concept of zero from the Mathematics Textbook Grade 1.
- Perform the activity given in “Teaching point”.
- Facilitate the students to count and read the objects given in the textbook.

**Conclusion / Sum up / Wrap up:**

Conclude the lesson with the following points:

- Ask questions about the number of things not present in the classroom.
- Use multimedia and follow the link given below to revise the number “0”.

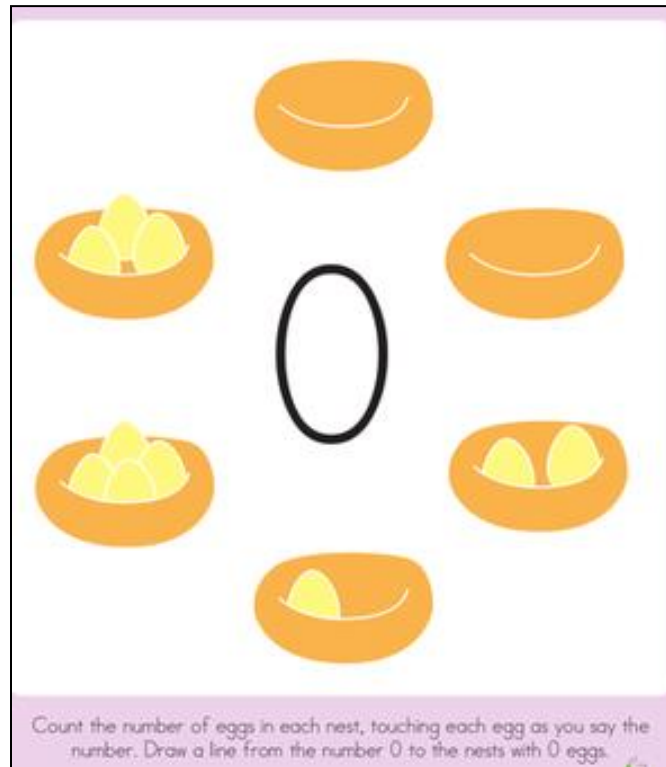
<https://www.youtube.com/watch?v=epEq3HXtkZE>

**Assessment:**

Provide worksheets 1 and 2 to the students to assess their understanding.

**Worksheet 1**

## Worksheet 2



### Follow up:

- Ask the students to search number “0” in their surroundings and read them. For example, on key board, mobile number keys, clock, calendar, TV, etc.
- Provide worksheet 3 to the students to solve.

## Worksheet 3

Name: \_\_\_\_\_

**Match the Number 0**

Draw a line from the number on the left to the matching numbers on the right.  
Next, color the number on the left.

0  
1  
2  
0  
0

**Glossary:**

**Zero:** Zero is the integer denoted 0 that, when used as a counting number, means that no objects are present.

**Whole number:** The numbers that include natural number and zero. A number without fractions or decimal; an integer. 0, 1, 2, 3, 4, 5, 6,.....

**Integer:** A number which is not a fraction; a whole number.



## WHOLE NUMBERS

### Counting / Numbers

**Duration:** 40 Minutes**Students Learning Outcome:**

- Read and write numbers up to 9 in numerals and in words.

**Materials:**

Number cards 0 - 9, number name cards 0 – 9, worksheet given at the end (according to number of students), number blocks 0 – 9, alphabet blocks, play dough, chart, baskets, tape/glue, objects like toys, stationery, beads, etc. Mathematics Textbook Grade 1

**Information for Teachers:**

- In linguistics, a numeral in the broadest sense is a word or phrase that describes a numerical quantity.
- Some theories of grammar use the word "numeral" to refer to cardinal numbers that act as a determiner that specify the quantity of a noun, for example the "two" in "two hats".
- A number is an arithmetical value, an idea that quantifies, counts, ranks or calculates an arithmetical value. The word number is derived from the Old French word number, which means to count.
- Number Names are **the spellings of the names of each Numeral**. For example, 5 is spelled as 'five' and 20 is spelled as 'twenty' etc. They are also called as 'Number Words'.
- In math, to count can be defined as **the act of determining the quantity or the total number of objects in a set or a group**. In other words, to count means to say numbers in order while assigning a value to an item in group, basis one to one correspondence.
- Counting numbers are the set of numbers that we use to learn how to *count*. 1, 2, 3, 4, 5, and so on.
- Counting numbers are used to count objects.

**Teaching Tips:**

Here are some tips that will help to teach writing of numbers and number names to students:

- Teach counting with number rhymes.....



- Play number games with a group of kids .....
- Write down numbers and make the child draw that quantity....
- Count fingers and toes.....
- Incorporate numbers into daily tasks.....

### Introduction:

Warm up

- Display number card of '0' in front of the class.
- Now ask students to read this number.
- Collect their response as '0'.
- Now show them number name card of '0' and ask them to read its name with spellings.
- Collect their response as "zero".

### Development:

Tell the students about number names from 0 – 9 such that, show any number card (say '1') to students and tell them, "in numeral/digit we write this number as ('1') and in words we read and write its name as ("one"). Repeat this activity for other numbers up to 9.

### Activity 1:

- Put number cards 0 – 9 in first basket, number names cards zero - nine in second basket and objects like toys, beads, etc. in third basket.
- Now ask students to pick any number card from first basket, read the number and find matching number name card from second basket.
- Now take objects according to the number from third basket and keep this number and number name card on these objects.
- Repeat the activity for all the numbers (0 to 9).

### Activity 2:

20 Minutes

- Make 3 or 4 groups of students according to class strength.
- Provide number blocks 0 - 9 and alphabet blocks to each group.
- Now ask them to make number names using alphabet and display on soft board/chart along with matching number.
- A sample is shown in the figure.



### Activity 3:

- Divide the students in 10 groups or pairs
- Provide play dough and a chart each group / of pair
- Assign them numbers 0-9
- Now ask them to make numbers and number names assigned to them using play dough on chart.
- A sample is shown in the figure.



### Activity 4:

- Clarify the concept of counting in numerals and in words from the Mathematics Textbook Grade 1.

- Perform the activity given in “Teaching point”.
- Facilitate the students to count the objects and write the numbers given in the Textbook.

### Conclusion / Sum up / Wrap up:

Conclude the lesson by the following points:

Revise the concept by displaying a chart of number and number names up to 9.








### Assessment:

Speak out any number from 0 – 9 and ask the students to write this number in numeral and in words in their notebooks. Repeat this activity for five or six numbers randomly.

### Follow up:

Provide the following worksheet to the students as homework.

**Missing Letters**  
Fill in the missing numbers.

	t__o
	__even
	fou__
	__ne
	s__x
	t__ree
	fi__e

### Glossary:

**Number words:** The alphabetical form of numbers.

**Numeral:** A figure, symbol, or group of figures or symbols denoting a number.

**Counting numbers:** Set of numb

## WHOLE NUMBERS

### Ordering Numbers, Before, After and Between

**Duration:** 40 Minutes**Students Learning Outcomes:**

- Arrange numbers in ascending and descending order (up to 9).
  - Identify which number (up to 9) comes
  - Before and after a given number
  - Between two given numbers

**Materials:**

Number cards 0 - 9, number blocks 0 – 9, baskets, ladder, wooden blocks, glue/tape, board/soft board, card cut-outs of cars, pegs, cut-outs of circles using card/chart, flashcards of before, after and between, Mathematics Textbook Grade 1

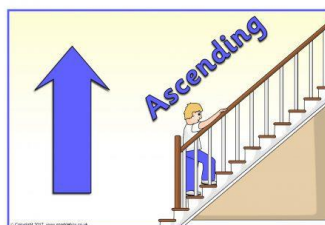
**Information for Teachers:**

- Putting things into their correct place following some rule is called ordering.
- Ordering Numbers is a method of arranging them in order - either from greatest to smallest or smallest to greatest.
- Descending order is a method of arranging the numbers from the greatest to the smallest. It is also known as a decreasing order.
- Ascending order is a method of arranging the numbers from the smallest to the greatest. It is also known as an increasing order.
- Before number means the number which is 1 smaller than the given number.
- After number means the number which is 1 greater than the given number.

**Teaching Tips:****Ascending and Descending Order**

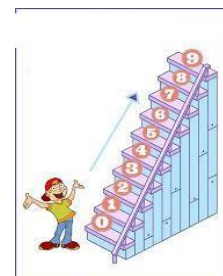
Here are some tips that will help to teach comparing and ordering of numbers:

- Use manipulative like counting blocks, mini erasers, buttons, etc. and line up the items to see which one has more.
- Number line is also helpful to compare numbers.
- Teach ascending and descending order to students by using stairs or ladder.



### Introduction:

- Put number cards 0 to 9 in order on the stairs/ladder as shown in the figure.
- Now ask any one student to go upstairs by counting numbers 0, 1, 2, 3, and so on.
- Now ask him to come back by counting numbers 9, 8, 7, 6 and so on.
- Repeat the activity with other students.



### Development:

Inform the students about the terms ascending and descending. Tell them ascend means “climb up” and descend means “climb down”. So in Mathematics “Ascending order” means to arrange numbers in increasing order, that is, from smallest to greatest. And “Descending order” means to arrange numbers in decreasing order, that is, from greatest to smallest. Show them flashcards of ascending and descending order while explaining the terms. Also give the reference of activity of going up and down the stairs by counting numbers.

### Activity 1:

- Make a ladder using wooden blocks as shown in the figure.
- Now put number cards 0 – 9 in the basket.
- Take any three cards from the basket and arrange them in ascending order on blocks.
- Hence explain the concept of ascending order by comparing numbers.
- Similarly take any three cards and arrange them in descending order on blocks.
- Hence explain the concept of descending order by comparing numbers.

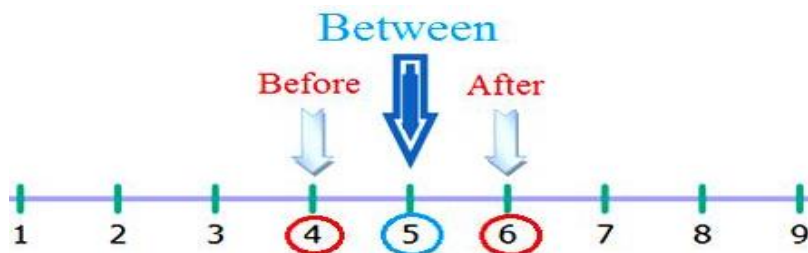
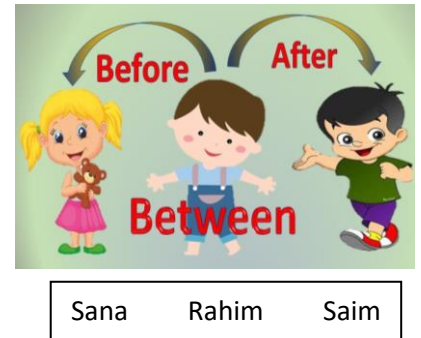


### Activity 2:

- Divide the students in groups according to the class strength.
- Put number blocks 0 – 9 in a basket.
- Provide one basket to each group and ask them to take any three cards and arrange them in ascending and descending order on board.
- Facilitate them in their work.

### Activity 3:

- Introduce the terms before, after and between by showing flashcards as shown in the figures.
- Ask any three students to stand in a line in front of the class. Now tell the students that Sana is standing before Rahim and Saim is standing after Rahim. It means Rahim is between Sana and Saim.
- Now write numbers 0 - 9 on a paper strip and explain the concept of before, after and between the given numbers.



### Activity 4:

- Make car patterns on card, cut these patterns and write numbers from 0-9 on each wheel
- Make number wheels 0 – 9 of cars by using cards and pegs.
- Now write one or two numbers on each car at different positions.
- Now ask students to read the number on car and attach wheels according to the number that comes before, after or between the numbers.
- A sample is shown in the figure.



### Activity 5:

- Clarify the concept of ordering numbers, before, after and between from the Mathematics Textbook Grade 1.
- Perform the activity given in “Teaching point”.

### Conclusion / Sum up / Wrap up:

- Recall the concept of ascending and descending order by writing any three numbers from 0 – 9 on board and arranging them in ascending and descending order.
- Use multimedia and follow the link given below to recap the concept of before, after and between.

<https://www.youtube.com/watch?v=7834JCVXGm4>

### Assessment:

- Write any number on board from 0 – 9 and each student will write the numbers that comes before and after this number.
- Similarly, write any three numbers on board from 0 – 9 and students will arrange these numbers in ascending and descending order.



### Follow up:

Ask the students to solve the questions of ordering numbers and before, after, between given in the Mathematics Textbook Grade 1.

### Glossary:

**Ordering:** Putting things into their correct place following some rule.

**Ordering numbers:** A method of arranging them in order - either from greatest to smallest or smallest to greatest.

**Ascending order:** A method of arranging numbers from smallest to the greatest.

**Descending order:** A method of arranging numbers from greatest to the smallest.

**Before Number:** The number which is 1 smaller than the given number.

**After Number:** The number which is 1 greater than the give

## WHOLE NUMBERS

### Concept of Ten “10”

**Duration:** 40 Minutes**Students Learning Outcomes :**

- Identify 10 as a 2-digit number.
- Compare and order the numbers 0 – 10.

**Materials:**

Number cards 0 - 10, worksheet given at the end (according to number of students), number blocks 0 – 10, baskets, glue/tape, board/soft board, balloons, balloon of 1 and 0, play dough, number name card of 10, cubic blocks/beads, chit pads, shoe laces, Mathematics Textbook Grade 1

**Information for Teachers:**

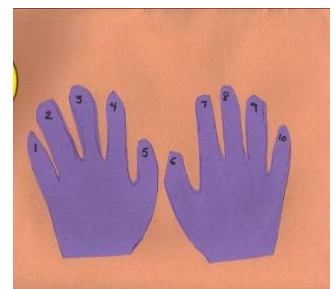
- 2-digit numbers are the numbers that have two digits and they start from the number 10 and end on the number 99.
- 10 (ten) is an even natural number following 9 and preceding 11.
- 10 is the first and the smallest two-digit number.
- In mathematics, the number 10 represents a quantity or value of 10
- Ten is the base of the decimal numeral system, by far the most common system of denoting numbers in both spoken and written language.

**Teaching tips:**

- Play number rhymes to make learning a fun.
- Use concrete objects like balls, beads, pencils, blocks to help students to count.

**Introduction:****10 Minutes**

- Write counting 1 – 10 on your fingers and count with students as shown in the figure.
- Now ask them to count their fingers and tell how many fingers do they have?
- Collect their response and appreciate them.

**Development:**



Take ten balloons, write counting 0-9 on them as shown in the figure and display in the class. Tell the students that we use number 10 to represent ten objects. The number name of 10 is “ten”. As these are ten balloons. Let’s count with me 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10.

### Activity 1:

- Display number cards 0 – 9 in sequence on board.
- Tell them these symbols 0 – 9 are called “ones” or 1-digit numbers.
- Ask the students, what number comes after 9?
- After getting their response, tell them that 10 is the first 2-digit number.
- 2-digit numbers are the numbers that have two digits and they start from the number 10.
- Number 10 in words can be written as ten.
- Call any two students in front of the class, provide balloon of 1 and 0 and ask them to make number 10.
- Now show them number name card of ‘10’ and ask them to read its name with spelling. Collect their response as t...e...n...ten.



### Activity 2:

- Provide play dough, ten cubic blocks/beads and a paper to pair of students.
- Now ask them to make number 10 and number name ten using play dough on paper.
- Then represent number ten by using cubic blocks/beads.
- A sample is shown in the figure.



### Activity 3:

- Make two or three groups of students depending upon the class strength.
- Provide eleven chit pad rolls and a shoe lace to each group.
- Now ask them to write numbers 0 – 10 on each roll.
- Now compare numbers 0 – 10 and join them in sequence by using lace.
- A sample is shown in the figure.



### Activity 4:

- Clarify the concept of number 10 from the Mathematics Textbook Grade 1.
- Perform the activity given in “Teaching point”.

### Conclusion / Sum up / Wrap up:

Conclude the lesson by the following points:

- Place 10 objects on the table and ask the students to count them.



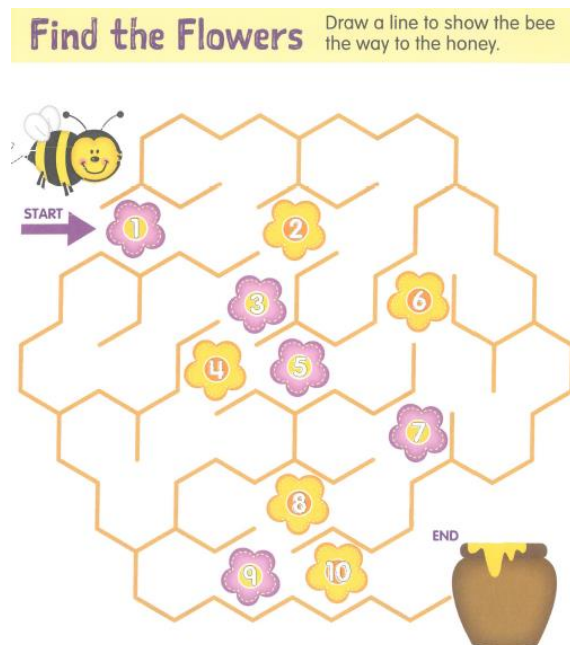
- Write different numbers on board like 2, 6, 0, 5 and ask any student to write these numbers in the correct order i.e. 0, 2, 5, 6.
- Repeat the activity to order numbers from greatest to smallest.
- Use multimedia and follow the link given below to revise numbers up to 10.  
<https://www.youtube.com/watch?v=fHqjNHxmB7c>

### Assessment:

Ask each student to find number 10 in their English, Science, Social Study books and fold that pages.

### Follow up:

- Ask the students to find number 10 in their surroundings such as on mobile key pad, keyboard, calendar, watch, etc. Then ask to write number 10 in numerals and in words in their notebooks.
- Ask the students to solve the following worksheet.



### Glossary:

**Digit:** A digit is a single symbol used to make numerals. 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 are the ten digits we use in everyday numerals.

**Number:** A number is an amount of something. It can be written with one or more – or many – digits.

**Two-digit numbers:** 2-digit numbers are the numbers that have two digits and they start from the number 10 and end on the number 99.

## WHOLE NUMBERS

### Numbers up to 99

**Duration:** 40 Minutes**Students Learning Outcomes:**

- Read and write numbers up to 99.
- Count forward and backward up to 99.

**Materials:**

Number cards 0 - 99, worksheet given at the end (according to number of students), baskets, glue/tape, board/soft board, chit pads/paper slips, loose sheets, Mathematics Textbook Grade 1

**Information for Teachers:**

- A digit is a written symbol for any of the ten numbers from 0 to 9.
- These digits are 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 are called ones or 1-digit numbers.
- 2-digit numbers are the numbers that have two digits and they start from the number 10 and end on the number 99.
- Forward counting is counting by adding one more, every time.
- Backward counting is counting by removing one, every time.

**Teaching tips**

- It is very important for students to count every day. Repeated oral counting helps them to hear what numbers sound like and to learn their order. Using different things like counters, marbles etc., can help in building a connection to oral counting and counting objects. This one-to-one counting is an important skill that needs to be practiced often.
- Number line is helpful in counting numbers forward and backward.

**Introduction:**

Display number cards 0 – 10 in sequence on board and ask students the following questions:

- What are 1-digit numbers.
- Is 10 a 1-digit number or a 2-digit number?
- Which digits are used to make 10?
- What is the greatest 1-digit number?
- What is the smallest 2-digit number?

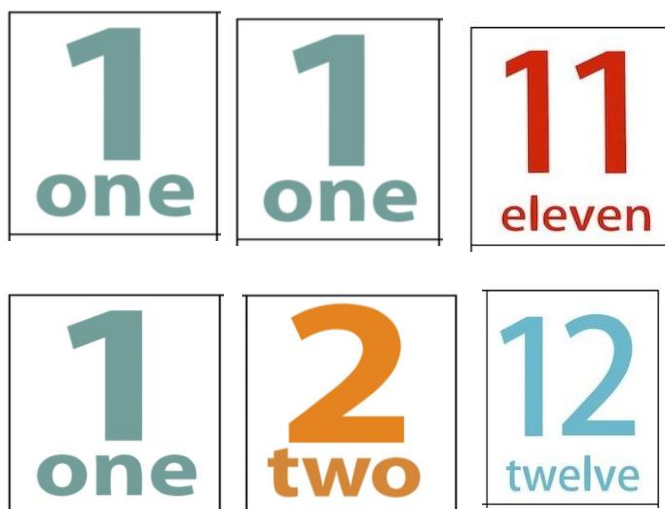
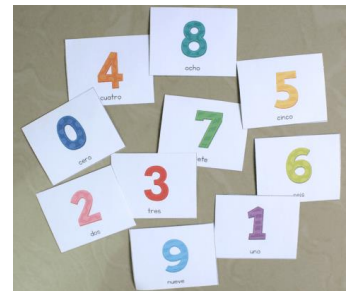
- Randomly call any student in front of the class and ask him/her to take 10 steps forward and count steps like 1,2,3,4,5,6,7,8,9 and 10. Similarly, ask the same student to take 10 steps backward and count steps like 10, 9, 8 up to 1.
- Repeat the activity with different numbers. Involve all students in this activity.

### Development:

Tell the students about the formation of 2-digit numbers with the help of 1-digit numbers. Tell the students that 10 is the first 2-digit number formed by using digits 0 and 1. Today we will make more 2-digit numbers by using digits 0 – 9.

### Activity 1:

- Make two groups of students with ten students in each group.
- Provide ten number cards of digit 1 to ten students of 1<sup>st</sup> group and ask them to stand on my left side.
- Provide number cards 0 – 9 to ten students of 2<sup>nd</sup> group and ask them to stand on my right side in a sequence from 0 - 9.
- Now ask any student of 1<sup>st</sup> group (For example Taha) to come in front of the class and display his/her card of digit 1.
- Now ask first student of 2<sup>nd</sup> group (the student which have number 0) to come in front of the class and stand on the right side of Taha and display his/her card.
- Now tell the students that we make a 2-digit number 10.
- Now ask both the students to display their cards on board in the same order.
- Repeat the activity by calling next student from each group and tell the students that we are going to make next 2-digit number i.e.11. Ask them to display their cards on soft board.
- Continue the activity till number 19.
- Now put number cards from 10 – 19 in a basket and ask rest of the students to read the numbers on board and display matching number card in front of it.
- Repeat the activity by taking number 2 and joining it with digits 0 – 9 and hence make numbers from 20 to 29 and display on the board.
- Continue the activity up to numbers 99.
- In the given figure formation of numbers 11, 12 is shown as an example.



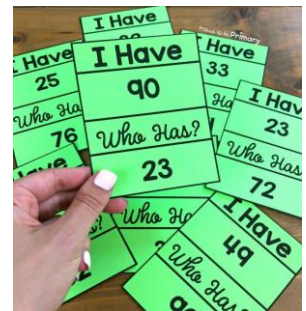
### Activity 2:

- Now make 100 chart on paper and provide one paper to each student.
- Now make pair of students and ask one student from each pair to write forward counting from 0 -99.
- Ask another student from each pair to write backward counting from 99 -0.
- Facilitate them in their work.
- A sample is shown in the figure.



### Activity 3:

- Take chit pads/paper slips and prepare them as shown in the figure.
- Now provide one chit pad/paper slip to each student and ask them to read the chit and find his number.
- Facilitate the students in their work.



### Activity 4:

- Make two groups of students.
- Put number cards 0 – 99 in each basket.
- Provide one basket to each group.
- Now ask first group to display these cards on half portion of writing board/soft board by counting forward from 0 - 99.
- Now ask second group to display these cards on other half portion of writing board /soft board by counting backward from 99 – 0.
- Facilitate them in their work.

### Conclusion / Sum up / Wrap up:


- Say any number e.g., 15 and ask any student to count 10 steps forward and backward from the number 15.
- Repeat the activity with different numbers to enhance the concept.

### Assessment:

Show numbered flashcards and ask the students to count their steps forward (if flash card says 25 students will walk 25 steps ahead)  
Repeat the activity for backward counting.

**Follow up:**

Ask the students to solve the following worksheet.

 **Counting forward and Backward**

Count backwards from 91.

									91
--	--	--	--	--	--	--	--	--	----

Count forward from 8.

8									
---	--	--	--	--	--	--	--	--	--

Count backwards from 27.

									27
--	--	--	--	--	--	--	--	--	----

Count backwards from 70.

									70
--	--	--	--	--	--	--	--	--	----

Count forward from 46.

46									
----	--	--	--	--	--	--	--	--	--

**Glossary:**

**2-digit number:** A number made up of 2 digits.

**Forward Counting:** Counting numbers by adding one more, every time or counting from smallest to the greatest number.

**Backward Counting:** Counting numbers by removing one , every time or counting from greatest to the smallest number.

## WHOLE NUMBERS

### Place Value (Tens and Ones)

**Duration:** 40 Minutes**Students Learning Outcomes:**

- Recognize and identify the place value of a specific digit in a 2-digit number (tens and ones)
- Decompose a number up to 99 to identify the value of a number in tens and ones place.

**Materials:**

Number cards 0 - 99, worksheets (according to number of students), cubic blocks, chit pads, 37 coins of 1 rupee, three 10 rupee notes, multimedia, abacus, dice, manipulative such as popsicle sticks, beans, or mini erasers, flashcards of tens and ones, Mathematics Textbook Grade 1

**Information for Teachers:**

- “Place value” is the value of each digit in a number. It describes the value of every digit in a number depending on its position. These positions start from the units place (ones place).
- The order of the place value of digits in a number from right to left is expressed as ones, tens, hundreds, thousands and so on. For example, the place value of 4 in 345 is 4 tens or 40. However the place value of 4 in 467 is 4 hundreds or 400. It is important to understand that a digit can be the same, but its value depends on its position in the number.

**Teaching tips:**

- Use abacus to understand the concept of place value.
- Use manipulates, such as base-ten blocks, matchsticks, beads to clarify the concept of tens and ones.

**Introduction:**

- Use multimedia and follow the link of number rhyme regarding place value given below  
<https://www.youtube.com/watch?v=sb-OeAfpmGM>



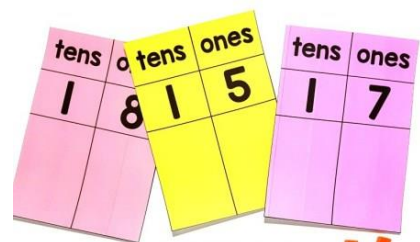
## Concept Development:

Introduce the concept of place value to students through different activities. Tell them today we will learn place value through grouping of objects. We will make groups of tens and then count in tens and ones.

### Activity 1:

Provide thirty-seven coins of 1 rupee to a whole group of students.

- Show them 1 rupee coin and tell them this is 1 rupee and all these are 1 rupee coins. We can say these coins as “ones” .
- Now ask students to count these coins and tell how many coins.
- Help them in counting correctly, then place a number card of thirty-seven in front of the students.
- Now ask them to divide the coins in groups of ten.
- Now count with students in groups of tens such that;
  - 1<sup>st</sup> group of coins: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.
- Now place a 10 rupee note beside this group and tell them this is one ten rupee note and we can say it “one ten”.
- Now write  $10 \text{ ones} = 1 \text{ ten}$  on chit pad and tag on these coins.
- Ask them how many one rupee coins make a 10 rupee note. Tell them, we can say 10 ones make 1 group of ten.
- Now count next group of coins such that 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 and place 1 ten rupee note beside this group. Tell them this group also have 10 coins so we can place one more ten rupee note. Now there are 2 groups of tens and 20 coins of 1 rupee.
- Now ask how many one rupee coins make two 10 rupee notes? After getting their response, write  $20 \text{ ones} = 2 \text{ tens}$  and tell them 20 ones make 2 groups of tens.
- Again count next group of coins as 21, 22, 23, 24, 25, 26, 27, 28, 29, and 30 and place one more ten rupee note beside this group.
- Now ask them, how many ones make 3 groups of 10. After getting their response, tell them we can replace thirty coins of 1 rupee by three 10 rupee notes.
- Now write  $30 \text{ ones} = 3 \text{ tens}$  and tag on this group.
- Now count next group of coins as 31, 32, 33, 34, 35, 36, and 37.
- Now ask them can we keep 1 ten rupee note with this group, and why?
- After getting their response, tell them as there are 7 ones so we cannot place a ten rupee note. We count them in one. Because as we know that  $10 \text{ ones} = 1 \text{ ten}$ .
- Sum up the activity by counting coins in groups of tens and ones as 10, 20, 30 and 7 ones.
- Write 37 as 3 tens and 7 ones.
- Tell them, in the beginning we counted all 1-rupee coins that make 37 ones. Then we decomposed the number 37 into tens and ones i.e., 3 tens and 7 ones equal 37.
- Which way of counting is easy? After getting their response, tell them counting in tens and ones is easier than counting individually to large number of objects. It is less time consuming.
- Repeat the activity by taking handheld items such as



Popsicle sticks, beans, and mini erasers up to 99 to show tens and ones.

### Activity 2:

- Take cubic blocks and prepare slips of some numbers up to 99 as shown in the figure.
- Now take any slip, read the number and decompose it into tens and ones by using cubic blocks in front of the students.
- Now take other slips one by one, read the number and decompose it into tens and ones with the help of students.
- Give some slips to all students for independent practice.
- After their practice, ask different questions from them like;
- How many tens and ones are there in number 24?
  - How many ones are there in 6 tens?
  - What is the number if there are 8 tens and 9 ones?
- Tell them all 1-digit numbers are called ones.
- We can decompose a 2-digit number into tens and ones by making groups of tens and separating ones as we have done in this activity.
- Show the flashcard of number 23 and tell them that 2 is at tens place so its place value is 20 and 3 is at ones place so its place value is 3.
- Now show flashcard of number 32 and ask about their place value i.e., 3 is at tens place so its place value is 30 and 2 is at ones place so its place value is 2.
- Conclude the activity by defining the place value i.e. it is the value of each digit in a number.



### Activity 3:

- Make pair of students.
- Ask them, today will play a game whose name is “Journey on the Place Value Path”
- Provide print outs of the given game and a dice to each pair.
- Now ask them to roll the dice to see which outer square you land on.
- Read the number represented by the base ten symbols, and colour it on your game.
- When you get 5 in a row, you win!
- A solved sample is shown in the figure.





**The Place Value Path**

Directions: Put your playing piece anywhere on the path. Move around the board using a die. When you land on a space, count by tens and ones to get the total number of squares. Find the number on your bingo board and cover or dot it. When you get 5 in a row, the game is over. Have fun!

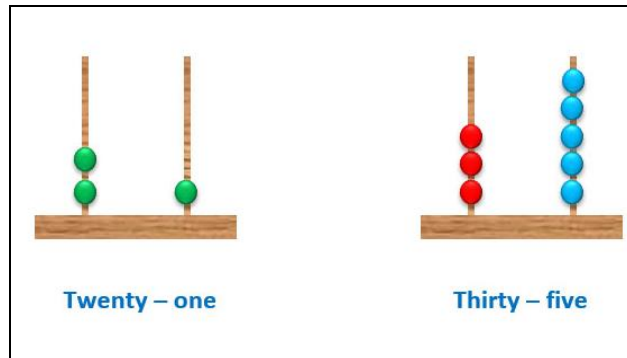
44	17	24	54	25
16	5	26	70	50
2	96	free	46	73
49	63	11	36	40
83	51	22	19	10

#### Activity 4:

- Clarify the concept of place value of numbers up to 99 from the Mathematics Textbook Grade 1.
- Perform the activity given in “Teaching point”.
- Ask the students to solve the questions given in the textbook.

#### Conclusion / Sum up / Wrap up:

- Represent different numbers on abacus by putting beads in tens and ones rods.
- Ask the students to tell the number.



#### Assessment:

Provide the following worksheet to the students to solve.

Read the number in tens and ones. Then match it to the number in the centre.

Start	3 ones 1 tens	5 ones 4 tens	8 ones 9 tens	1 ones 5 tens	4 ones 7 tens	2 ones 6 tens	9 ones 2 tens	3 ones 3 tens
9 ones 4 tens	62	11	84	24	98	37	7 ones 8 tens	
1 ones 1 tens	29	13	74	61	15	93	4 ones 2 tens	
9 ones 2 tens	79	87	49	55	45	82	5 ones 5 tens	
4 ones 8 tens	51	48	36	29	68	33	6 ones 3 tens	
8 ones 6 tens	3 ones 9 tens	2 ones 8 tens	6 ones 6 tens	5 ones 1 tens	8 ones 4 tens	7 ones 3 tens	9 ones 7 tens	

**Follow up:**

**Project**

- Ask the students to solve the place value scavenger hunt given below. The purpose of hunt is to find numbers in the real world with certain place values. For example, they might be looking for a number with 5 in the ones place or 7 in the tens place. Once they find a certain number, they cut it out and glue it to their scavenger hunt sheet.
- Where can students look for numbers?
  - Magazines
  - Newspapers
  - Food labels/packages
  - Any printed material that has numbers
- A sample of solved scavenger hunt is shown in the figure.

Place Value Scavenger Hunt		Name
Directions: Cut out and glue a number beside the description it matches.		
0 in the ones place		
2 in the tens place		
4 in the hundreds place	465	
5 in the tens place		



# Place Value Scavenger Hunt

Name: \_\_\_\_\_

Directions: Cut out and glue a number beside the description it matches

4 in the ones place	
7 in the tens place	
0 in the ones place	
2 in the tens place	
8 in the ones place	

## Glossary:

**Abacus:** A simple counting device made of a frame, wire and beads.

**Place value:** It is the value of each digit in a number.

## WHOLE NUMBERS

### Comparing Numbers, Ordering Numbers

**Duration:** 40 Minutes**Students Learning Outcomes :**

- Compare 1 – digit and 2 – digit numbers.
- Order the set of numbers from 0 to 99 in ascending and descending order.
- Identify which number (up to 99) comes:
  - Before and after a given number.
  - Between two given numbers.

**Materials:**

Number cards 0 - 99, baskets, cubic blocks, chart, chit pads, tape, worksheets, scissors, multimedia and balloons, Mathematics Textbook Grade 1

**Information for Teachers:**

- Comparing numbers in mathematics is a process in which we determine if one number is equal, smaller or greater than the other number.
- Comparing numbers is an important part of building a student's number sense.
- Number sense is the ability of a student to recognize a number, its value, and its relationship with other numbers.
- Putting things into their correct place following some rule is called ordering.
- Ordering Numbers is a method of arranging them in order - either from greatest to smallest or smallest to greatest.
- Ascending order is a method of arranging numbers from smallest to greatest. It is also known as increasing order.
- Descending order is a method of arranging numbers from greatest to the smallest. It is also known as decreasing order.
- Before number means the number, which is 1 smaller than the given number.
- After number means the number which is 1 greater than the given number.

**Teaching tips**

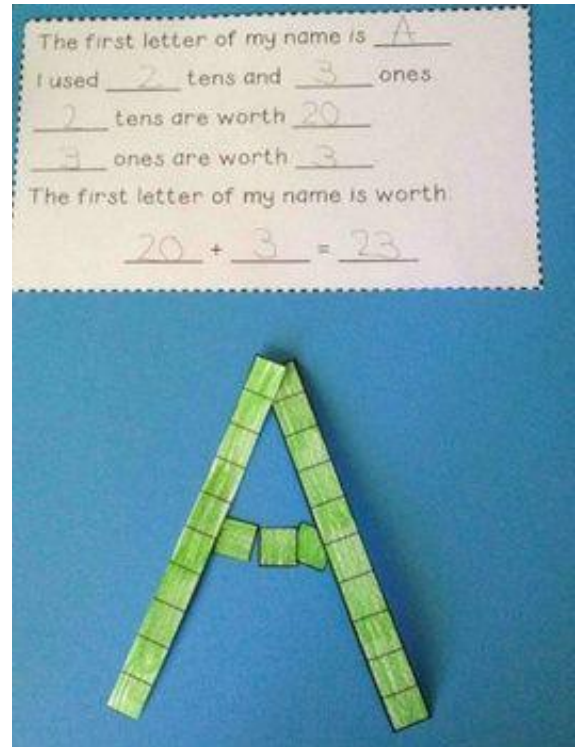
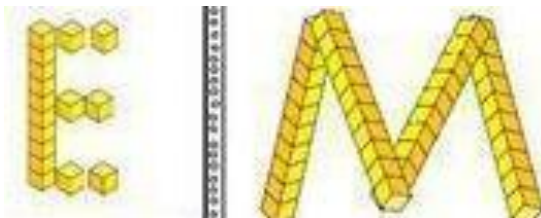
Here are some tips that will help to teach comparing and ordering numbers to students:

- To compare numbers, follow the steps given below;
  - **Step 1:** To compare two numbers, the number with more digits is greater than the other. Similarly, the number with fewer digits is smaller than the other. e.g., 10 is greater than 9.

- **Step 2:** If the digits at the tens place are the same, then the number with a greater digit at the ones place is greater.
- Use stairs or make a ladder with blocks to explain the concept of ordering.

### Introduction:

- Put cubic blocks in one basket and number cards 0 – 99 in another basket.
- Now ask each student to make the first letter of his/her name in tens and ones using these blocks.
- Ask each student to count the cubes in tens and ones, he/she used to make his/her capital letter, find this number card from the basket, and tag it.
- For example, in the figure capital letter A used 2 tens and 3 ones, hence the number is 23.
- Now ask students to compare the cubes they used to make their letter and see which student used more cubes, which student used fewer cubes, and which student used an equal number of cubes.

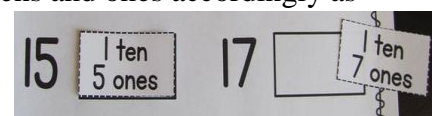


### Concept Development:

Introduce the method of comparing numbers by giving reference of above activity and display E and M cubes in front of the students. Tell them in the letter “E” 16 cubes are used while in the letter “M” 40 cubes are used. So number 16 is less than number 40. Tell the students that we can also observe that in the letter “E” 1 ten is used while in the letter “M” 4 tens are used. As in a 16, the number of tens are less so 16 is the smaller number, and 40 is greater number.

### Activity 1:

- Make the given worksheet on the chart.
- Now ask the students to read the number, then cut and paste tens and ones accordingly as shown in the figure.
- Now compare these numbers one by one in front of students and explain the method of comparing.
- Tell them, we can compare two 1-digit numbers easily because we know that which number is greater than the other.
- For example, in the given worksheet 5 is greater than 3.
- But in comparison of 2 – digit numbers, we compare the place value of digits.
- We start comparing digits which have the greatest place value i.e., tens place
- For example, in the given worksheet, let's compare 43 and 62.





- First, we compare the digits at tens place, we can see that 4 tens is smaller than 6 tens, so 43 is smaller than 62.
- But in case of 26 and 29, the digits at tens place is same, so we compare ones, we can see that 6 is smaller than 9, so 26 is smaller than 29.
- If we compare 87 and 87, we can observe that digits at both places are same, so the numbers are equal.
- Repeat the activity with other numbers to enhance the concept.

## Tens and Ones

5	<input type="text"/>	2	<input type="text"/>
3	<input type="text"/>	9	<input type="text"/>
26	<input type="text"/>	29	<input type="text"/>
43	<input type="text"/>	62	<input type="text"/>
35	<input type="text"/>	53	<input type="text"/>
27	<input type="text"/>	22	<input type="text"/>
87	<input type="text"/>	87	<input type="text"/>
24	<input type="text"/>	34	<input type="text"/>

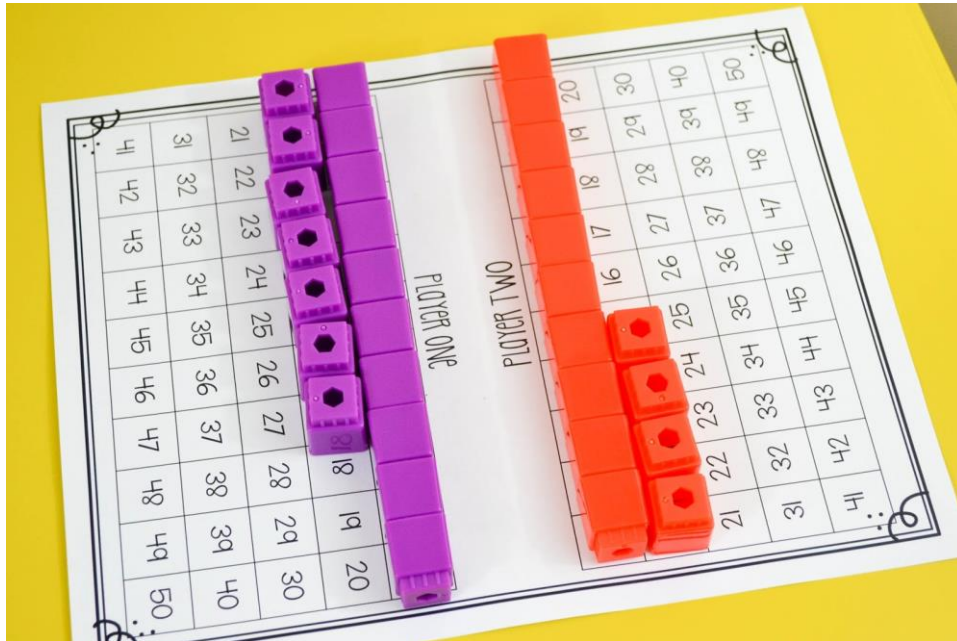
2 tens 4 ones	3 tens 4 ones	8 tens 7 ones	2 tens 9 ones	2 tens 6 ones	3 ones	9 ones	5 ones
8 tens 7 ones	5 tens 3 ones	2 tens 2 ones	2 tens 7 ones	3 tens 5 ones	4 tens 3 ones	6 tens 2 ones	2 ones

### Activity 2:

- Make pairs/groups of students.
- Prepare the worksheet as shown in the figure for numbers 0 – 99.
- Provide this worksheet and one chit pad to each pair/group.
- Now put cubes in one basket and number cards 0 – 99 in other basket.
- Ask each group/pair to pick any two number cards, read the numbers and show these numbers on the worksheet using cubes.
- Now compare the number and tell which number is greater and which is smaller.
- Then write the numbers on a chit pad (for example, 43 is greater than 18) and display them in the class.



- Facilitate them in their work.



### Activity 3:

- Introduce the concept of ascending and descending order to students. Tell them ascend means “climb up” and descend means “climb down”. So, in Mathematics “Ascending order” means to arrange numbers in increasing order, that is, from smallest to greatest. And “Descending order” means to arrange numbers in decreasing order, that is, from greatest to smallest.
- Tell them we can arrange 2 – digit numbers in ascending and descending order by comparing tens and ones.
- Take 4 balloons and label number cards on them as shown in the figure.
- Now call any four students in front of the class and give one balloon to each student randomly.
- Tell the students that we will arrange these number balloons in ascending order.
- For this we compare the digits at tens place of each number.
- Now ask students to read the digits which are at tens place of each number.
- Write the digits on board as 4, 3, 7, and 6.
- Now ask to compare, which digit is the smallest?
- After getting their response, as 3 is smallest, tell them, it means 39 is the smallest number.
- Now ask the student having number 39 to stand separately.
- Now ask students, after 3, what will be the next number greater than 3?
- After collecting their response as 4, tell them, it means 46 is next number.
- Ask student having number 46 to stand next to number 39.
- Ask them what will be the next number now, after their answer, tell them 6 is next number, so 66 is greater number.
- Ask student having number 66 to stand next to number 46.
- Now ask student which is the greatest number?
- Collect their response, then tell them 79 is the greatest number.
- Ask the student having number 79 to stand next to number 66.
- Finally, the numbers are arranged in ascending order as 39,46,66,79.



- Repeat the activity for descending order of numbers.

#### Activity 4:

- Put number cards 0 – 99 on the table.
- Now ask any student to take any number card and display on the board.
- Now call any two students and ask them to find the numbers which will come before and after this number.
- Repeat the activity to find out the number that comes between two numbers.
- Repeat the activity with different numbers.
- Involve all students in this activity.
- A sample is shown in the figure.



#### Activity 5

- Clarify the concept of comparing and ordering numbers from the Mathematics Textbook Grade 1.
- Perform the activity given in “Teaching point.”

#### Conclusion / Sum up / Wrap up:

- Use multimedia and follow the link given below to recap the concept of comparing numbers.

<https://www.nagwa.com/en/videos/572193975634/>

#### Assessment:

Write any number on board from 0 – 99 and ask each student to write the numbers that come before and after this number. Similarly, write any three numbers on board from 0 – 99 and ask the students to arrange these numbers in ascending and descending orders.

#### Follow up:

- Ask the students to solve the questions of comparing and ordering numbers given in the Mathematics Textbook Grade 1.



**Project:**

- Students in groups will make models as shown in the figure using a Thermo pore sheet and place a few number cards in ascending and descending order.
- Display this model in the class.

**Glossary:**

**Comparing Numbers:** Comparing numbers in mathematics is a process in which we determine if one number is equal, smaller, or greater than the other number.

**Ascending order:** The numbers arranged from smallest to greatest are called ascending order.

**Descending order:** The numbers arranged from greatest to the smallest is called descending order.

## WHOLE NUMBERS

### Concept of Hundred “100”

**Duration:** 40 Minutes**Students Learning Outcome:**

- Count in tens and recognize 100 as a 3-digit number.

**Materials:**

Number cards of tens 10, 20, 30, ..., 100, multimedia, balloon, balloon of 1 and 0,0, play dough, number cards 0 – 9, number name card of 100, hundred cubic blocks, chit pads, 100 coins of 1 rupee, 10 ten rupees notes, 1 hundred rupees note, chart paper having counting in

### Information for Teachers:

- Any numeral we want to make, we use digits, a special kind of symbol that represents a number. There are only ten digits, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 but we can make any numeral we want from them.
- A number is an amount of something. It can be written with one or more – or many – digits.
- 3-digit numbers are the numbers that have three digits and they start from the number 100 and end on the number 999.
- 100 (hundred) is an even number following 99 and preceding 101.
- Hundred is the first and the smallest 3 - digit number.
- In mathematics, the number 100 represents a quantity or value of 100.
- Hundred is an important number because it is a multiple of ten.

**Teaching Tips:**

Use hundred cubic blocks, base 10 blocks and cubic blocks to teach the concept of hundreds, tens and ones. Abacus is also helpful in understanding the concept.

### Introduction:

Use multimedia and follow the link given below for number rhyme up to 100.

<https://www.youtube.com/watch?v=B5iAW-jnkPw>

### Concept Development:

Take one balloon, write 100 on it as shown in the figure, and display it in the class. Tell the students that we use the number 100 to represent a hundred objects. The number name of 100 is “Hundred”.

**Activity 1:**

- Display number cards 0 – 9 in sequence on the board.
- Tell them these symbols 0 – 9 are called digits.
- There are only ten digits, 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 but we can make any number we want from them.
- A number can be written with one or more – or many – digits.
- 3-digit numbers are numbers that have three digits and they start from the number 100.
- Digits 0, 0, and 1 are used to make the number hundred.
- 99 is the last or greatest 2-digit number.
- 100 comes after 99.
- It is the first three-digit number.
- Number 100 in words can be written as “hundred”.
- Call any three students in front of the class, provide balloons of 1 and 0, 0 and ask them to make the number 100.
- Now show them the number name card of ‘100’ and ask them to read its name with spelling. Collect their response as h...u...n...d...r...e... d...hundred.

**Activity 2:**

- Tell the students, today we will count large number of objects through grouping of objects. We will make groups of ten and then count in tens.
- Provide hundred coins of 1 rupee to a whole group of students.
- Ask students to count these coins and tell how many coins.
- Help them in counting correctly, then place a number card of hundred in front of students.
- Now ask them to divide the coins in groups of ten.
- Then count with students in groups of ten such that;
  - 10, 20, 30, 40, 50, 60, 70, 80, 90, 100 and place a note of 10 rupees in front of each bundle of coins.
- Now place a 100 rupees note by joining all the groups of coins and tell them this is one hundred rupees note and we can say it hundred and plural hundreds.
- Now write  $10 \text{ tens} = 1 \text{ hundred}$  on chit pad and tag on bundles of coins.

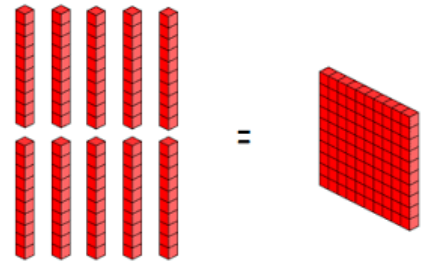


- Ask them how many ten rupees notes make 1 hundred rupees. Tell them, we can say 10 tens make 1 group of hundred.
- Tell them, in the beginning, we count all 1 rupee coins and said a hundred ones. Then we count ones in groups of ten and said 10 tens equal 1 hundred.
- Which way of counting is easy? After getting their response, tell them counting in hundreds is easier than counting individually to large number of objects. It is less time-consuming.

- Help them in counting and handling coins carefully.

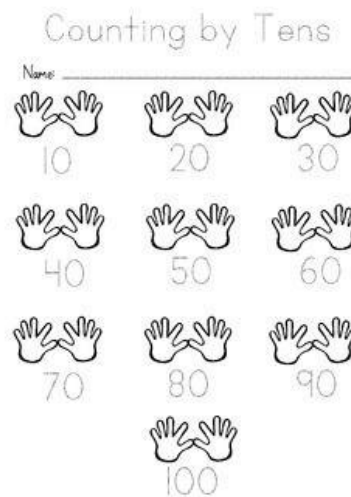
### Activity 3:

- Provide play dough, hundred cubic blocks and a paper to pair of students.
- Now ask them to make number 100 and number name “hundred” using play dough on paper.
- Then represent number hundred by using cubic blocks.
- A sample is shown in the figure.



### Activity 4:

- Display the following chart in front of the class.
- Ask the students to say counting in tens up to 100.



- Prepare the following worksheet and distribute to the students.
- Ask the students to solve the worksheet by counting in tens.
- Help them where needed.

### Activity 5:

- Clarify the concept of the number 100 from the mathematics Textbook Grade 1.
- Perform the activity given in “Teaching point”.

### Conclusion / Sum up / Wrap up:

Use multimedia and follow the link given below to revise counting in tens.

<https://www.youtube.com/watch?v=Ftati8iGQcs>

### Assessment:

Ask each student to search number 100 in their English and Science books and fold that pages.



## Follow up:

Ask the students to search number 100 in their surroundings.

## Glossary:

**3- Digit numbers:** 3-digit numbers are numbers that have three digits and they start from the number 100 and end at the number 999.

## WHOLE NUMBERS

### Counting up to 100

**Duration:** 40 Minutes**Students Learning Outcomes:**

- Identify and write missing numbers in a sequence from 1 to 100.
- Count and write number of objects in a given set.

**Materials:**

Number cards 1 - 100, basket, soft board/writing board, double tape, loose sheets, colours, worksheets, marbles, chart paper, Mathematics Textbook Grade 1

**Information for Teachers:**

- A hundred chart is a 10 by 10 grid with the numbers one to one hundred printed in the squares.
- A hundred chart is a simple way to teach a lot of math skills such as counting, number sequencing, patterns and skip counting, etc.
- A hundred chart help students build number sense and understand composition of 2-digit numbers.
- Counting Numbers are defined as the set of numbers that we used to count anything. All-natural numbers are counting numbers. And these numbers are always positive. Examples are 1, 2, 3, 4, 5 ... etc.

**Teaching Tips:**

- Give children a blank number chart and have them write in the correct numbers.
- Laminate a number chart and have children work in partners to cover and guess numbers in a “guess any number” game.
- 
- Simple games such as **Roll to 100** or **Race to 100** can be played on numbers as a fun brain break.

**Introduction:**

- Put number cards 1 – 100 in a basket.
- Ask students to arrange these cards in sequence from 1 – 100 on soft board/writing board using double tape.



- Now count the numbers 1 – 100 in sequence with the students.

### Concept Development:

Tell the students that they will practice counting from 1 – 100 using objects.

#### Activity 1:

Ask each student to write numbers on his/her loose sheet from 1 to 100 as shown in the figure.

- Ask one student to speak one number
- Tell others to colour the number that has been uttered / told
- Now tell others to practice the same
- Ask every time, which number comes before and after the called-out number.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

#### Activity 2:

- Put number cards up to 200 in a basket.
- Provide a different number of marbles to each student.
- Ask them to count the marbles and place a number card according to the number of marbles.
- Help them in counting and handling marbles carefully.



#### Activity 3:

1	2	3	☆	5	6	7	8	9	10
11	12	13	14	15	16	17	☆	19	20
21	22	☆	24	25	26	27	28	29	30
☆	32	33	34	35	36	37	38	39	40
41	42	43	44	45	☆	47	48	49	50
51	52	53	54	55	56	57	58	☆	60
61	☆	63	64	65	66	67	68	69	70
71	72	73	74	☆	76	77	78	79	80
81	82	83	84	85	86	85	88	89	☆
91	92	93	94	95	96	☆	98	99	100



Fill in the missing numbers.

4	18	23	31	46
59	62	75	90	97

Make a chart as shown in the figure and display it in the class. Now recall counting up to 100 by filling in missing numbers with the help of students.



### Conclusion / Sum up / Wrap up:

- Provide the following worksheet to each student.
- Ask them to identify and write the missing numbers on the given space according to spacecraft.

Space number chart										SPACE	number
1	2	3	4		6	7	8	9	10		
11	12	13	14	15	16	17		19	20		
21	22	23		25	26	27	28	29	30		
31	32	33	34	35	36		38	39	40		
41	42		44	45	46	47	48	49	50		
	52	53	54	55	56	57	58	59	60		
61	62	63	64	65	66	67	68	69			
71	72	73	74	75		77	78	79	80		
81		83	84	85	86	87	88	89	90		
91	92	93	94	95	96		98	99	100		

### Assessment:

Ask the students to solve the questions in the Mathematics Textbook Grade 1.

### Homework

Ask the students to solve the questions of missing numbers up to 100 and counting objects given in the Mathematics Textbook Grade 1.

### Glossary:

**Hundreds Chart:** A hundred chart is a 10 by 10 grid with the numbers one to one hundred printed in the squares.

## WHOLE NUMBERS

### Ordinal Numbers

**Duration:** 40 Minutes

#### Students Learning Outcome:

- Identify the position of objects using ordinal numbers such as first, second... tenth, including representations 1<sup>st</sup>, 2<sup>nd</sup>... 10<sup>th</sup> through pictures.



**Materials:** Ordinal number cards (1<sup>st</sup> – 10<sup>th</sup>), balloons/candies (according to class strength), ordinal number names cards (first – tenth), timetable of class 1, double tape, loose sheets, multimedia, worksheet, concrete objects like toys, stationery, Mathematics Textbook Grade 1

#### Information for Teachers:

- Cardinal numbers are the numbers that are used for counting. It helps us to know how many elements are there.
- Ordinal numbers indicate the position or order of things or objects in a series.
- Ordinal numbers can be written as words (first, second, third) or as numerals followed by abbreviations (1st, 2nd, 3rd).
- In real life, we use ordinal numbers during race games, to announce results, to distribute something in a row, or to tell the order of something.

#### Teaching Tips:

- Ask the students to line up different objects in a row. Then ask for the position of any object and match it with the correct ordinal number card.
- Use multimedia to show car racing to the students to help reinforce the concept.

#### Introduction:

- Hold a few candies/balloons in your hand.
- Now tell the students, “Today I will give you candy/balloon. So who will take this candy/balloon first?”
- Collect their response as ‘I will take it first. Now ask any ten students in the class, make a row (line up). Give them candies/balloons according to their position in the row.
- Now call the students using ordinal numbers first, second, third, and so on, and hence delivered the candy/balloon to students.

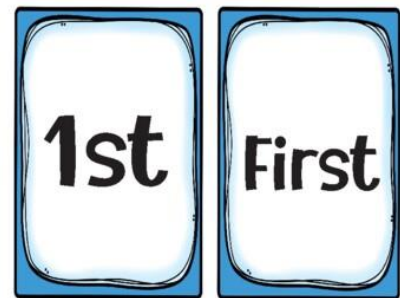
- Repeat the activity by distributing candies/balloons to the rest of the class.

### Concept Development:

Introduce ordinal numbers up to the tenth to students. Explain to the students that we use words such as first (1<sup>st</sup>), second (2<sup>nd</sup>), third (3<sup>rd</sup>), to tell the position of the objects. These words are called “Ordinal numbers”. In real life, we use ordinal numbers during race games, to announce results, to distribute something in a row, or to tell the order of something as we have done in the activity.

### Activity 1:

- Display ordinal number cards and ordinal number name cards up to the 10<sup>th</sup> on board using double tape as shown in the figure.
- Tell the students, we write ordinal numbers as ‘1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th’ and their names as ‘first, second, third, fourth, fifth, sixth, seventh, eighth, ninth, tenth respectively.
- Now show the ordinal number card of ‘1st’ to students and ask students to read this ordinal number.
- Collect their response as ‘first’.
- Now show them the ordinal number name card of ‘first’ and ask them to read its name with spelling.
- Collect their response as f... i...r...s...t...first. Repeat the activity by showing other ordinal numbers and their name cards to students.



### Activity 2:

- Put ordinal number cards 1st to 10th on the table.
- Call any 10 students in front of the class.
- Now ask each student to pick one card from the table.
- Then ask the students to read his/her ordinal number and arrange themselves according to ordinal number sequence.
- Now remaining students will tell the position of each student.
- Repeat this activity with remaining students.

### Activity 3:

- Write ordinal numbers up to 10th on board.
- Ask students to write the spelling of those on their loose sheets.

### Activity 4:

- Place some concrete objects/toys like car, ball, bat, book, pencil, doll, bottle, geometry, etc. randomly on students’ table.
- Now ask students to write the order with the name of the objects.
- Then ask the position of any object from the students.

### Activity 5:

- Organize a frog race competition among the students to see who comes first, second, third, and so on.



### Activity 6:

- Clarify the concept of ordinal numbers from the Mathematics Textbook Grade 1.
- Ask the students to solve the questions related to ordinal numbers given in the Mathematics Textbook Grade 1.

### Conclusion / Sum up / Wrap up:

- Use multimedia and follow the link given below for ordinal numbers up to the 10th.  
<https://www.youtube.com/watch?v=0CWWNzprEQ4>

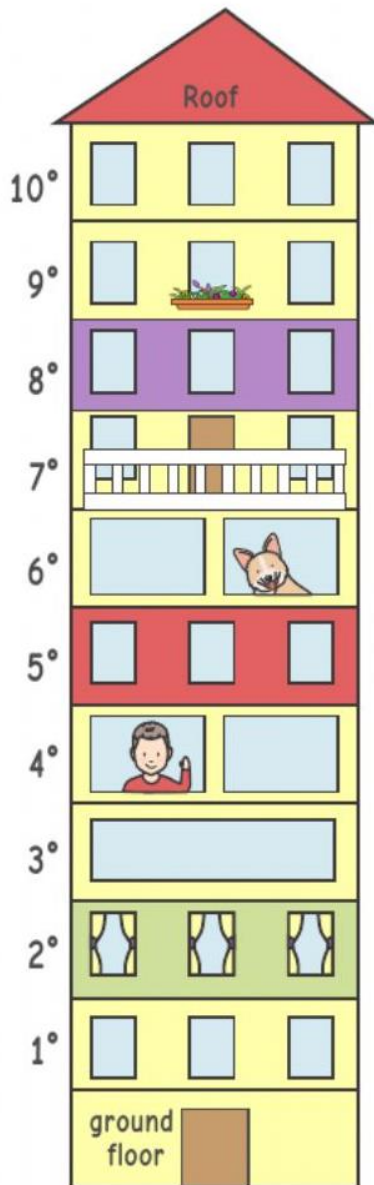
### Assessment:

Speak out any ordinal number from 1st – 10th and ask the students to write this number on their loose sheets. Repeat this activity for all numbers randomly.

### Follow up:

- Provide the following worksheet for the students to solve.

## Ordinal numbers 1st to 10th



Complete the sentences with the correct ordinal numbers.

- 1- The \_\_\_\_\_ floor is painted red.
- 2- There is a balcony on the \_\_\_\_\_ floor.
- 3- There is a dog on the \_\_\_\_\_ floor.
- 4- There is only one window on the \_\_\_\_\_ floor.
- 5- There are flowers on the \_\_\_\_\_ floor.
- 6- There is a boy on the \_\_\_\_\_ floor.
- 7- The \_\_\_\_\_ floor is under the second floor.
- 8- The \_\_\_\_\_ floor is under the roof.
- 9- The \_\_\_\_\_ floor is painted purple.
- 10- There are yellow curtains on the \_\_\_\_\_ floor.

**Glossary:**

**Cardinal Number:** Cardinal numbers are the numbers that are used for counting something e.g. 1, 2, 3, 4, 5, 6, 7 ...

**Ordinal Number:** A number that tells the **position** of something in a list, such as 1st, 2nd, 3rd, 4th, 5<sup>th</sup>, etc.

## WHOLE NUMBERS

### One-to-One Correspondence, Comparing Objects

**Duration:** 40 Minutes**Students Learning Outcomes:**

- Compare two or more groups of objects in terms of numbers.
- Match objects having one – to – one correspondence.
- Identify the number of objects in two groups to show “more than” and “less than”.

**Materials:**

Flashcards of balloons, hens, chicks, rats, cats, flashcards of objects showing one-to-one correspondence, counters, sheets, objects cards, number cards 1 – 9, glue/double tape, objects, worksheets, flashcards of more and less objects, cubic blocks, toy tea set, Mathematics Textbook Grade 1

**Information for Teachers:**

- One-to-one correspondence between sets A and B is similarly a pairing of each object in A with one and only one object in B, with the dual property that each object in B has been thereby paired with one and only one object in A.
- It involves learning how to count a group of objects by assigning one number to each object and only counting each object once.
- One – to - One correspondence is a foundation for all the skills that come after it: adding, subtracting, finding one more and less, and lots of other things too.
- When we compare amounts in everyday life, we use words like more, less, greater, smaller, or the same as. In mathematics, we say numbers or amounts are greater than, less than, or equal to each other.
- Through comparison or one – to – one correspondence according to number of objects between two groups, we can find which group has less number of objects, which group has more objects or both groups have equal number of objects.

**Teaching Tips:**

- Provide a sandpit to the students. Ask the students to make mud pies or cupcakes and place a candle on each one.
- Arrange a toy tea set for the students. Ask them to match cups to saucers one-to-one.



- Counting rhymes and finger plays are excellent for teaching one-to-one correspondence.



### Introduction:

- Display the flashcards of kids holding balloons in their hands.
- Ask the students, which child has more balloons?
- Ask them, how can you tell?
- After that tell them to compare such as boy with red shirt has 13



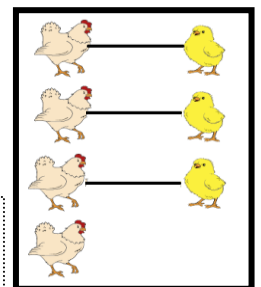
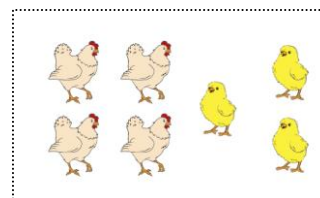
### Concept Development:

Introduce the concept of comparison and one-to-one correspondence to students through the following activities.

#### Activity 1:

- Display the flashcard of hens and chicks on the board.
- Now ask students, “Are there more hens or chicks?”
- Ask them, “to tell the difference”
- Give remarks on their feedback.
- Draw a line between one hen and one chick to show one-to-one correspondence as shown in the figure.
- Tell them the amount of hens and chicks.

Ask them the following questions



- How many chicks are there?
- How many hens are there?
- Which number is greater?
- Which number is smaller?

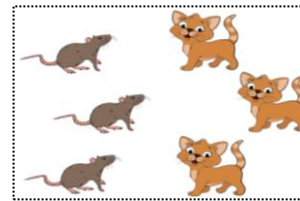


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### Activity 1:

- Display the flashcard of rats and cats on board equal number
- Now ask students to do the following
- Count the cats and rats
- So there are **as many** rats **as** cats.



with

### Activity 2:

- Now show them flashcards of one-to-one correspondence between dogs and bones.
- Ask them, “Are there enough bones for each dog?”
- After their response, tell them that the line between one dog and one bone is showing that there is one bone for each dog or there is no dog without bone. It is called one-to-one correspondence.



### Activity 3

- Make pairs of students.
- Draw Set A and Set B on sheets as shown in the figure below.

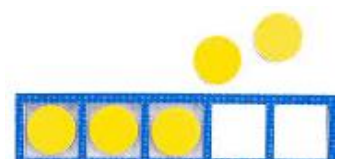
Set A

--	--	--	--	--	--	--	--	--	--

Set B

--	--	--	--	--	--	--	--	--	--

- Provide one sheet and few counters to each pair.
- Ask each pair to place counters in sets A and B to show that:
  - Set A has more counters than Set B.
  - Set A has less counters than Set B.
  - Set A has as many counters as set B.
 Facilitate them where needed.



**Activity 4:**

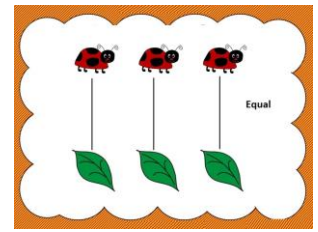
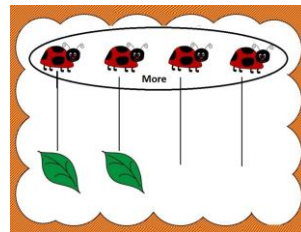
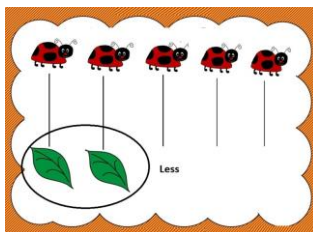
- The display gave object cards on board or put the objects in the form of sets on the table.
- Now ask the students to count and tell which group has more of objects.
- Encourage them in counting and comparing.
- Now make pairs of students.
- Provide a few cubic blocks to each one of the pair.
- Now ask each pair to count their blocks.
- Ask each pair to tell which has more blocks and how much more?
- Now call any one pair and ask them to put their blocks tower in front of the class on the table and place the number card below each tower.
- Now ask them whose blocks are less and how much less?
- Ask them to tell which number is less and how much less? Such as figure in 3 is 1 less than 4.
- Ask other pairs to write and compare the numbers according to their blocks.

**Activity 5:**

- Clarify the concept of one-to-one correspondence and compare objects from the Mathematics Textbook Grade 1.
- Perform the activity given in “Teaching point”.

**Conclusion / Sum up / Wrap up:**

Show flashcards of more, less and equal (one-to-one correspondence) and number cards to recap the concept.




**Assessment:**


Provide the given worksheet to each student to solve.

LO: Can I match one object with another?


1. Draw a sweet for each child so they all get 1 each.



2. Are there enough chairs for the family? Explain why.



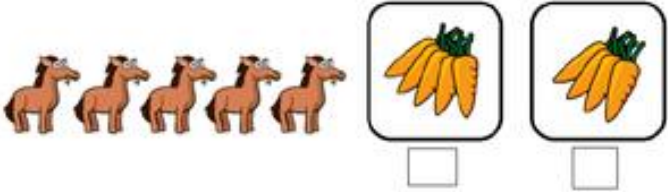
3. There are 4 children going to the beach. Can every child have a bucket and spade? Shade the circle and explain your answer.



Yes

No

4. Which group of carrots matches the number of horses? Tick the box.

**Follow up:**

Ask the students to solve questions of one-to-one correspondence and compare objects given in the Mathematics Textbook Grade 1.

**Glossary:**

**One – to – One correspondence:** Counting each object in a set once, and only once with one touch per object.

## NUMBER OPERATIONS (ADDITION)

### How Much More

**Duration:** 40 Minutes**Students Learning Outcome:**

- Compare numbers from 1 to 20 to identify “how much more” one is from another.

**Materials:**

Two baskets, toy fruits, toy animals, flashcards of “more than”, cubic blocks, number cards 1 – 20, jars, objects, hula-hoop, chart, worksheet, Mathematics Textbook Grade 1

**Information for Teachers:**

- In Mathematics, the four basic operations on whole numbers are addition, subtraction, multiplication and division.
- More is a comparative word.
- “How much more” means the measurement/quantity more than entity/person.

**Teaching Tips:**

- Use the “counting up” strategy to understand the concept.
- Use a number line to compare “how much more” one number is from another.

**Introduction:**

- Put two baskets having a different numbers of toy fruits on the table.
- Ask students to tell, which basket has more fruit?
- “How can you tell?”
- Ask them to compare by counting.





**Concept Development:**

Give the students following instruction:

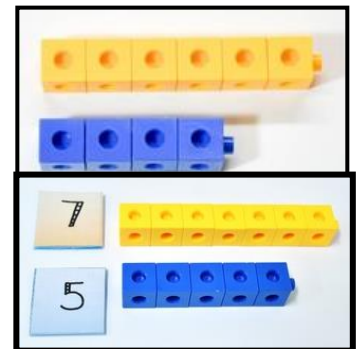
1. We have found the basket which has more fruits.
2. Now to see how much one basket has more than the other.

Example:

- One basket has 3 fruits
- Other has 5 fruits
- Hence it has 2 more fruits

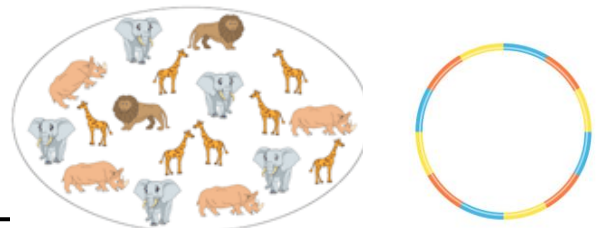
**Activity 1:**

- Make two rows of 6 yellow and 4 blue cubic blocks.
- Now place number cards 6 and 4 beside the respective rods.
- Now tell the students, to find out how much more yellow blocks are from blue blocks.
- Tell the students that 6 is 2 steps forward from 4.
- Hence **6** is 2 more than **4**.
- Repeat the activity by giving more examples.



**Activity 2:**

- Put some toy animals in a Hula-hoop.
- Now write the following question on the chart.



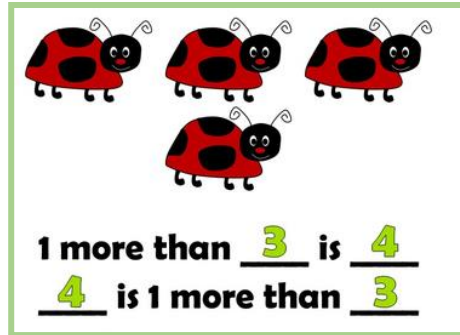
How many  ? _____	How many  ? _____
How many  ? _____	How many  ? _____
<p>How many more  are there than  ? _____</p> <p>How many fewer  are there than  ? _____</p>	

- Ask the whole group of students to count each animal and write the answer on the chart.
- Help them in their work.

**Activity 3:**

- Clarify the concept of “how much more” from the Mathematics Textbook Grade 1.



**Conclusion / Sum up / Wrap up:**

- Recall the concept of “How much more” by using flashcards.

**Assessment:**

Provide the following worksheet to the students.

Ask them to fill in the gaps to make these statements correct.

1.	17	is 3 more than	<input type="text"/>
2.	15	is 5 more than	<input type="text"/>
3.	12	is 2 more than	<input type="text"/>
4.	18	is 5 more than	<input type="text"/>
5.	16	is 1 more than	<input type="text"/>
6.	19	is 4 more than	<input type="text"/>

**Follow up:**

- Ask the students to solve the questions of “How much more” given in the Mathematics Textbook Grade 1.

**Glossary:**

**How much more:** It means the measurement/quantity is more than the entity/person.

## NUMBER OPERATIONS (ADDITION)

### Addition of 1-Digit Numbers

**Duration:** 40 Minutes

#### Students Learning Outcome:

- Recognize and use symbols of addition “+” and equality “=”.

Construct addition sentence from given picture or number stories.



#### Materials:

Number cards 0 - 9, number blocks, paper slips of addition sentences, multimedia, pencils, shoe box, marker, two disposable glasses, some mini balls, two dice, concrete objects like beads, counters, cubic blocks, etc. “+” and “=” symbol blocks and cards, straws, flashcards of addition, worksheets, chart, bowls, Mathematics Textbook Grade 1

#### Information for Teachers:

Addition is a way to put things together. When you add two amounts, you're counting them together, as one larger amount.

Addition equation/Sentence:

- An equation/sentence such as is called addition equation/sentence.
- Addends are the numbers that are added, i. e. on which the addition operation is performed.
- The answer to the addition sentence is called the **sum**.
- When we write out addition sentence, we use two symbols i.e. “+ “ and “=”.
- A symbol is a mark, sign, or word that indicates, signifies, or is understood as representing an idea, object, or relationship.
- The plus sign (+) means two things are being added together.
- In an addition sentence equal “=” is placed between two expressions that have the same value, or for which one studies the conditions under which they have the same value.
- The equal “=” “sign is used to tell the **answer**.

$$\begin{array}{ccccccc} 5 & + & 3 & = & 8 \\ \text{addend} & \text{plus} & \text{addend} & \text{equal} & \text{sum} \end{array}$$

4 + 1 = 2 + 3

- **Teaching Tips:**

Here are some tips that will help to teach addition to students:

- Using countable manipulatives (physical objects) will make addition concrete and much easier to understand.
- Counting story books are helpful and fun learning to teach addition.
- Use frog hopping number line to add numbers.

### Introduction:

Use multimedia and follow the link given below to sing addition rhyme with students.

<https://www.youtube.com/watch?v=-kb8vXq4tMY>

### Concept Development:

Introduce the concept of addition to students by giving reference to the poem “Five little bees”. Tell the students that in the poem you see, one bee was flying, then 1 more bee came and they became two. Then one more bee join them and they became three. Ask them, at the end how many bees altogether. Yes, there are a total of five bees at the end. Tell them, in mathematics, the process of joining bees and counting total bees is called “addition” and now we will do addition according to mathematics rules. For this first we will know and remember addition and equality symbols then we will add a different number of objects by combining them and using the plus and equal symbols.

### Activity 1:

- old three pencils in one hand and two pencils in another hand.
- Now ask students to count pencils in both hands
- Write their answer on board such as 3 and 2
- Then combine all pencils and ask them to count and tell how many altogether?
- Write answer on board as follows and say, three pencils and two pencils equal five pencils  
$$3 \quad \text{and} \quad 2 \quad \text{equals} \quad 5$$
- Now show them flashcard of symbol of addition “+” and tell them, it is addition sign (+), also called the plus sign. It is a mathematical symbol that is used to represent the concept of adding two numbers or objects together. So we can replace “and” by ‘+’ sign, because “and” means combining or adding objects.
- Now replace “and” by “+” sign as follow;  
$$3 \quad + \quad 2 \quad \text{equals} \quad 5$$
- Afterwards introduce another symbol “=” by showing flashcard. Tell them it is an equality symbol. We call this symbol “is equal to”. Where we want to show something equal, we put this symbol. So we can replace “equals” by its symbol ‘=’.
- Now replace “equals” by “=” sign as follows;  
$$3 \quad + \quad 2 \quad = \quad 5$$
- Tell them this is called an addition sentence.
- Repeat the activity by taking different objects and making additional sentences with the help of students.



**Activity 2:**

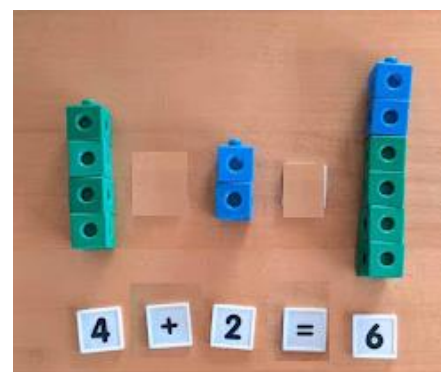
- Make 2 groups in the class
- Collect their erasers
- Now ask them about the number of their erasers that each of the group have
- Write on the board
- Ask the students to give the total number by adding all the erases
- Repeat this activity with other things

**Activity 3:**

- Call any one student in front of the class.
- Give two straws in his/her right hand.
- Now ask other students how many straws he/she has in his/her right hand? (Ans. 2 straws)
- Now ask other students how many straws he/she has in his/her left hand? (Ans. 0 or no straw)
- Now ask students to count straws in his/her hands and tell how many straws altogether?
- After taking their response '2', tell them now we make an additional sentence.
- Now write the addition sentence on the board and tell them that we show 'nothing' by the digit zero so we write it as follows;  
$$\quad \blacksquare \quad 2 \quad + \quad 0 \quad = \quad 2$$
- Repeat this activity by using different objects to clear the concept of addition with zero.
- Facilitate them in their work.

**Activity 4:**





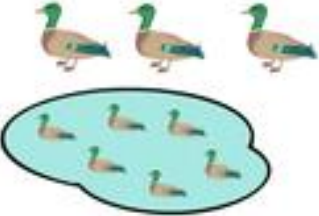
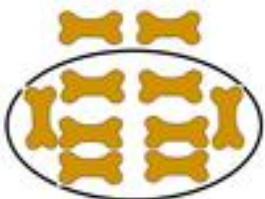
- Put counters/blocks, number cards 0 – 9 and symbol cards of “+” and “=” in front of the students.
- Ask them to construct addition sentence using these objects and display on the chart paper.
- A sample is shown in the figures.
- Facilitate them in their work.

**Activity 5:**

- Make/Paste the following worksheet on the chart.

- Ask the students to observe each picture and read the story.
- Now construct an additional sentence according to the picture.
- Help them in the reading story and constructing additional sentences.
- Clarify the concept of addition of 1-digit numbers (addition sentences from left to right by counting objects only) from the Mathematics Textbook Grade 1.

Ask the students to solve questions of addition of 1- digit numbers given in the Textbook.

<p>4 passengers are on the bus. 2 more passengers get on. How many are on the bus altogether?</p> 	<p>5 buns on the plate. I get 2 more buns How many buns are there altogether?</p> 	<p>There are 5 hot air balloons in a race. 3 more balloons join. How many balloons are there altogether?</p> 
$\square + \square = \square$	$\square + \square = \square$	$\square + \square = \square$
<p>I gets 6 presents for my birthday. I get 2 more presents. How many presents do I have altogether?</p> 	<p>6 ducks in the pond. 3 ducks go to the pond. How many ducks are there altogether?</p> 	<p>Floppy has 8 dog bones. He finds 2 more How many bones has he got altogether?</p> 
$\square + \square = \square$	$\square + \square = \square$	$\square + \square = \square$


### Conclusion / Sum up / Wrap up:

Use flashcards of addition sums/stories to recall addition of 1-digit numbers.

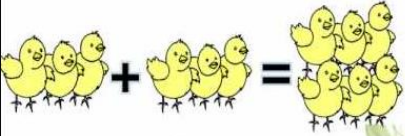
$$3 + 2 = 5$$

$$3 + 3 = 6$$

There were 3 bears and two ducks came along.  
There are five animals altogether.



$3 + 3 = 6$



**Assessment:**

Write the following questions on paper slips. Provide one slip to each student. Ask them to write addition sentence.

Four plus two equals six.	_____	○	_____	○	_____
Three plus zero equals three.	_____	○	_____	○	_____

**Follow up:**

Ask the students to solve the following worksheet.

Addition - Count the objects, write the numbers and find the sum

	+		=	<input type="text"/>
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	+		=	<input type="text"/>
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**Glossary:**

**Symbol:** A symbol is a mark, sign, or word that indicates, signifies, or is understood as representing an idea, object, or relationship.

**Addition:** When two or more than two groups are placed together, it is known as “addition”.

**Add:** Putting groups together to find the total.

**Addend:** The numbers that are being added.

**Plus:** Plus “+” sign is used to add numbers. “+” means add.

**Equal:** The equals sign (British English) or equal sign (American English), formerly known as the equality sign, is the mathematical symbol =, which is used to indicate equality in some well-defined sense.

**Sum:** The answer after addition is called the **sum**.

**Addition equation/ sentence:** An equation such as is called an addition equation or addition sentence.

$$3 + 4 = 7$$



## NUMBER OPERATIONS (ADDITION)

### Addition of 1-Digit Numbers

**Duration:** 40 Minutes**Students Learning Outcome:**

- Add two, 1-digit numbers sum up to 9.

Construct addition sentence from given picture or number stories.

**Materials:**

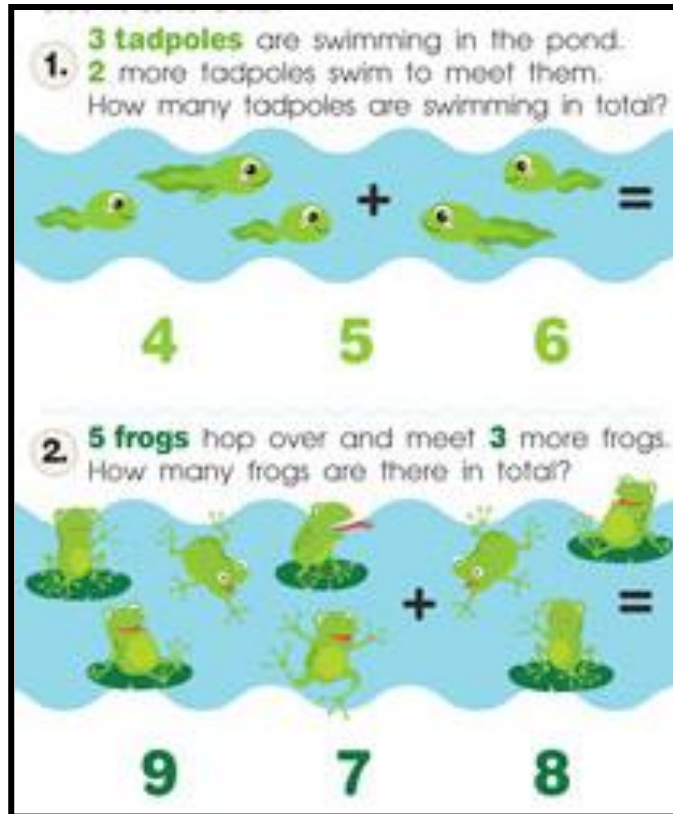
Number cards 0 - 9, paper slips of addition sentences, some disposable glasses, ice-cream sticks, concrete objects like beads, counters, etc. '+' and '=' symbol blocks and cards, flashcards of vertical addition, worksheets, flashcards of addition stories, chart, Mathematics Textbook Grade1

**Information for Teachers:**

- The addition is the process of adding two or more items together. Addition can also be called adding or add, total, sum, plus, and combine.
- To write a proper addition equation, you have an equal sign. One side shows you the total. The other side shows you what things are being added together.
- The addition sign (+), also called the plus sign, is a mathematical symbol that is used to represent the concept of adding two numbers or objects together.
- **Teaching Tips:**  
Here are some tips that will help to teach addition to students:
  - Counting on fingers is the most intuitive place to start before you transition to tokens, bottle caps, or paper cutouts.
  - If you want to incorporate some movement, put students in small groups and have them join up, counting out the total number of members once more are added.

**Introduction:**

- Paste the following worksheet on the board.
- Read each story and ask the students to choose and tell the correct answer.



### Concept Development:

Introduce the concept of vertical addition of 1-digit numbers with and without counting objects through the following activities:

#### Activity 1:

- Make different groups of students.
- Put beads, number cards 0 – 9 and symbol cards in front of each group.
- Ask them to put any two number cards, symbol cards, beads and make the additional sentence as shown in the figure.
- Now with the help of students, arrange these cards in vertical form along with beads as shown in the figure.
- Tell the students that we can also add two numbers in this way. The answer remains the same.
- Repeat the activity by adding numbers in both ways.




#### Activity 2:

- Make/paste the following worksheet on the chart.
- Provide this chart and concrete objects to students.
- Ask them to find the answer by placing concrete objects/counters beside each question.
- Help them in their work.


1. $\begin{array}{r} 2 \\ + 7 \\ \hline \end{array}$	2. $\begin{array}{r} 4 \\ + 3 \\ \hline \end{array}$
3. $\begin{array}{r} 5 \\ + 0 \\ \hline \end{array}$	4. $\begin{array}{r} 3 \\ + 5 \\ \hline \end{array}$
5. $\begin{array}{r} 2 \\ + 4 \\ \hline \end{array}$	6. $\begin{array}{r} 1 \\ + 2 \\ \hline \end{array}$
7. $\begin{array}{r} 1 \\ + 3 \\ \hline \end{array}$	8. $\begin{array}{r} 2 \\ + 2 \\ \hline \end{array}$

### Activity 3:

- Display flashcards of different additional stories on the board.
- Ask the students to read each story and complete the blanks.
- Help them in reading and understanding stories.






There are 2 monkeys.



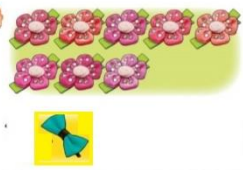
Then, 1 monkey joins them.

Add to find how many monkeys there are in all.

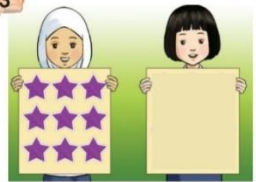
$2 + 1 = \square$

1.  There are 5  .  
There are   .  
There are  toy cars altogether.

---

2.  There are 8 flowered hair clips and  ribboned hair clip . The total number of hair clips is  .

---

3.  Mila has  purple stickers. Mei Li has  red stickers. Their total number of stickers is  .

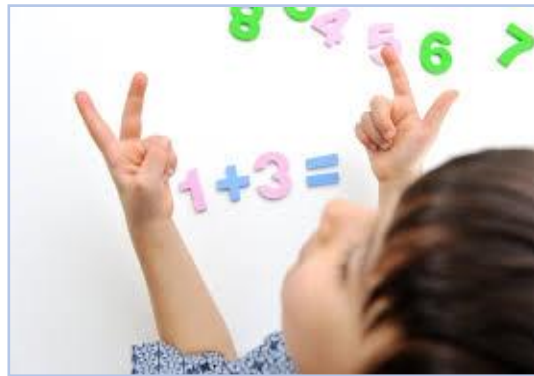
### Activity 4:

- Take ice cream sticks and disposable glasses.
- Write an additional sentence on ice cream sticks and their answers on glasses as shown in the figure.
- Now ask students to add the numbers and put the respective ice-cream stick in the relevant glass. A sample is shown in the figure.
- Help the students in adding numbers without counting objects and using their fingers or by drawing lines.



- A sample is shown in the figures.

First, draw 5 lines. To add 4, draw 4 more lines. You get the answer by counting the total number of lines drawn, 9.

$$5 + 4 = 9$$


### Activity 5

- Clarify the concept of the addition of 1-digit numbers (vertical addition) from the Mathematics Textbook Grade 1.
- Students will solve questions of addition of 1- digit numbers given in the Mathematics Textbook Grad1 with the help of a teacher.

### Conclusion / Sum up / Wrap up:

Use flashcards of addition sums to recall to addition of 1-digit numbers.

$$\begin{array}{r} 3 \text{ ☀☀☀} \\ + 6 \text{ ☀☀☀☀☀☀} \\ \hline 9 \end{array} \quad \begin{array}{r} 2 \text{ ☀☀} \\ + 5 \text{ ☀☀☀☀☀} \\ \hline 7 \end{array}$$

### Assessment:

Make paper slips of addition sentences as shown in the figure. Now provide two paper slips to each student and ask them to solve.

$5+0=$

$4+5=$

$4+4=$

$3+6=$

$3+2=$

$2+2=$

$2+6=$

$1+1=$

$7+1=$

$2+1=$

### Follow up:

Provide the following worksheet to the students to solve.

Add the numbers first, then colour the circles using the colour key given below.

$3+1$	$2+4$	$4+4$	$0+1$
$1+0$	$3+0$	$3+2$	$2+2$
$2+1$	$4+1$	$5+3$	$1+5$
blue 4	red 1	purple 8	
yellow 6	green 3	orange 5	

**Glossary:****Addition:** The process of adding two or more items together

## NUMBER OPERATIONS (ADDITION)

### Addition of 2-Digit Number and 1-Digit Number

**Duration:** 40 Minutes**Students Learning Outcome:**

- Add a 2-digit number to a 1-digit number.

Construct addition sentence from given picture or number stories.

**Materials:**

Cubic blocks, worksheets, concrete objects, multimedia, number blocks, Mathematics Textbook Grade 1

**Information for Teachers:**

- All 'ones' are called single digit or one-digit numbers and these are 0,1,2,3,4,5,6,7,8 and 9.
- If we make combination of any two 1-digit numbers from 0 to 9, then these are called 'tens' or 2- digit numbers, e.g. if we join 3 and 6 then we got 36 or 63 according to their positions.
- 2-digit numbers are the numbers from 10 to 99.
- 2-digit addition is a simple form of addition in which the numbers are placed according to their place values and then added.
- To add numbers such as 1-digit numbers, 2-digit numbers, 3-digit numbers and so on, we add their place values.
- We first add ones into ones, then tens into tens, and so on.

**Teaching Tips:**

- Use manipulatives like base ten blocks to teach 2-digit addition. Students can use plastic/wooden or printed paper base 10 blocks or they can easily draw them.
- The hundreds chart is helpful in practicing addition questions.
- Abacus can also be used to practice addition questions.

**Introduction:**

- Call 9 students and ask them to stand on the right side of the board.
- Now call 5 students and ask them to stand on the left side of the board.
- Now ask the students to count and tell how many students are there altogether?
- Observe the students and how they count.



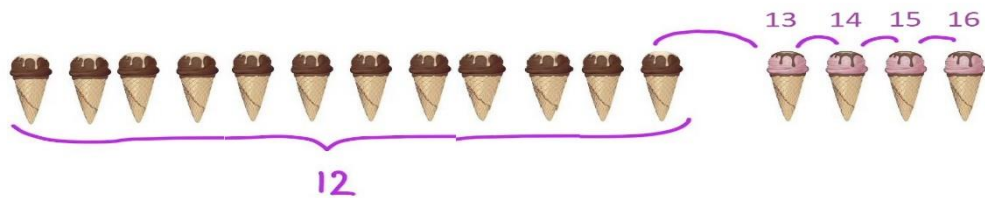
- Either they can count one by one as 1, 2, 3, 4.... 14 or they can count from 9 as 10, 11, 12, 13, and 14.
- After getting their response, introduce both ways of counting to students.

### Concept Development:

Introduce the concept of the addition of a 2-digit number and a one-digit number to students through the following activities.

#### Activity 1:

- Draw 12 cones and 4 cones on board as shown in the figure.
- Tell the students that these are 12 cones.
- Now let's count forward 4 steps from 12 to see how many cones are there altogether.
- Now tell them that there are 16 cones altogether.
- Explain that in this way, we add 2-digit number i.e. 12 and 1-digit number i.e. 4 and find the sum as 16.



#### Activity 2:

- Now tell the students, we can add 2-digit number and 1-digit number without counting objects.
- For this, we write the numbers in ones and tens.
- Tell them, we add the “ones” first then we add “tens”.
- Tell them, we will add 45 and 3 and find the sum.
- Now explain the method of addition of 2-digit number and 1-digit number with the help of the following example using cubic blocks and number blocks.

**Step 1** Show each number.

Workmat 5

Tens	Ones
40	5

4	5
+	3

**Step 2** Add the ones.

Workmat 5

Tens	Ones
40	5

4	5
+	3
	8

**Step 3** Add the tens.

Workmat 5

Tens	Ones
40	5

4	5
+	3
4	8

- After that explain the method of addition on board.
- Repeat the activity by taking different numbers.

**Activity 3:**

- Make/paste the following worksheet on the chart.
- Provide cubic blocks of tens and ones to the students.
- Ask the whole group of students to use cubic blocks of tens and ones to find the sum.
- Guide them in their work.

**ADDING A 2-DIGIT NUMBER AND A 1-DIGIT NUMBER**

Find the sum.

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**Activity 4:**

- Make pairs of students.
- Provide 16 books/notebooks to one student and 3 books/notebooks to another student of each pair.
- Now ask the students to add these books and tell how many books are there altogether?
- Now write the statement by the names of any pair of students on board and solve the word problem with the help of students.
- Repeat the activity by providing a different number of objects to each pair and making an addition to the problem on the board by their names.
- Hence explain and solve different word problems.

Fran has 16 books. Brad has 3 books. How many books do they have altogether?

tens	ones	
		books

**Activity 5:**

- Clarify the concept of addition of 1-digit and 2-digit numbers from the Mathematics Textbook Grade 1.
- Ask the students to solve some questions of the addition of 1-digit and 2-digit numbers given in the textbook with the help of a teacher.

**Conclusion / Sum up / Wrap up:**

Use multimedia and follow the link given below to recap the method of addition of a 2-digit number and a 1-digit number.

<https://www.youtube.com/watch?v=TT1Vpa-Rpkw>

**Assessment:**

Provide the following worksheet to the students to solve.

Add. Write the sum.

1.

	Tens	Ones
	4	2
+		6
<hr/>		
	4	8

2.

	Tens	Ones
	5	4
+		3
<hr/>		

3.

	Tens	Ones
	2	0
+		8
<hr/>		

4.

	Tens	Ones
	3	8
+		1
<hr/>		

5.

	Tens	Ones
	6	4
+		5
<hr/>		

6.

	Tens	Ones
	4	3
+		6
<hr/>		

7.

	Tens	Ones
	7	2
+		7
<hr/>		

8.

	Tens	Ones
	8	3
+		4
<hr/>		

9.

	Tens	Ones
	9	1
+		8
<hr/>		

10.

	Tens	Ones
	7	2
+		6
<hr/>		

11.

	Tens	Ones
	5	6
+		3
<hr/>		

12.

	Tens	Ones
	9	4
+		4
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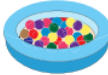
## Follow up:

Provide the following worksheet to students and ask them to solve.

**Two-Digit & Single-Digit Addition**


1) A ball pit has 81 colored balls in it. Ashley throws 5 more balls into the pit. How many balls are in the pit now?

\_\_\_\_\_




2) A baby beaver weighed 6 pounds in October. The weight increased by 23 pounds in three months. What would the new weight be?

\_\_\_\_\_




3) John ordered a pizza and a choco-chip cookie. The pizza cost \$14 and the cookie was priced at \$ 5. How much money did John spend in all?

\_\_\_\_\_




4) Rebecca and Sandra played Angry Birds online. At half an hour into the game, Rebecca had passed level 26. If Sandra was ahead of Rebecca by 3 levels, what level was Sandra in?

\_\_\_\_\_



5) Rick decides to light up his drive way using 24 porch lights. He also adds 4 more lights to the patio. How many lights did Rick use in all?

\_\_\_\_\_



## Homework

Ask the students to solve the remaining questions of the addition of a 2-digit number and 1-digit numbers given in the Mathematics Textbook Grade 1.

### Glossary:

**2-digit Number:** A number made up of two digits.

**Addition:** Addition is the process of adding two or more items together.

## NUMBER OPERATIONS (ADDITION)

### Addition of 2-Digit Numbers

**Duration:** 40 Minutes**Students Learning Outcomes:**

- Add a 2-digit number to 10s.
- Add two, 2-digit numbers.

Construct addition sentence from given picture or number stories.

**Materials:**

Cubic blocks, worksheets, concrete objects, balls, envelopes, nine 10 rupee notes, chart, number blocks, counters, three abacus, Mathematics Textbook Grade 1

### Information for Teachers:

- 2-digit addition is a simple form of addition in which numbers are placed according to their place values and then added.
- To add numbers such as 1-digit numbers, 2-digit numbers, 3-digit numbers and so on, we add their place values.
- We first add ones into ones, then tens into tens, and so on.
- When we add '0' to any number, the number remains the same.
- To add 'tens', we only add the tens and the ones are always zero (0).

**Teaching Tips:**

- Use manipulatives like base ten blocks to teach 2-digit addition. Students can use plastic/wooden or printed paper base 10 blocks or they can easily draw them.
- Hundreds chart is helpful in practicing addition questions.

### Introduction:

- Take nine 10 rupee notes.
- Show 10 rupee notes to students.
- Let's count in 10s to see how many rupees are there?
- Count in tens with the students as 10, 20, 30..., 90
- Yes, these are ninety rupees.
- As 10, 20 are 2-digit numbers, so these are called tens.

**Concept Development:**

Introduce the concept of addition of 2-digit numbers to the students through the following activities.

**Activity 1**

- Explain to the students about the addition of tens through the following figure using tens blocks.

$3 + 5 = \underline{8}$

$3 \text{ tens} + 5 \text{ tens} = \underline{8} \text{ tens}$

$\underline{30} + \underline{50} = \underline{80}$

- Now paste the following worksheet on chart and ask the students to solve by making packets of 10 balls to show “tens”.
- Guide them in solving addition questions.

1 ten + 2 tens =  tens  
 $10 + 20 = \underline{\quad}$

---

2 ten + 2 tens =  tens  
 $20 + 20 = \underline{\quad}$

---

3 tens + 1 ten =  tens  
 $30 + 10 = \underline{\quad}$



**Activity 2:**

- Now tell the students, we can add two 2-digit numbers without counting objects.
- For this, we write the numbers in ones and tens.
- Tell them, we add the “ones” first then we add “tens”.
- Tell them, we will add 35 and 12 and find the sum.
- Now explain the method of addition of two 2-digit numbers with the help of following example using cubic blocks and number blocks.

**Step 1**

Show each number.

Tens	Ones
3	5
+ 1	2

**Step 2**

Add the ones.

Tens	Ones
3	5
+ 1	2
	7

**Step 3**

Add the tens.

Tens	Ones
3	5
+ 1	2
4	7

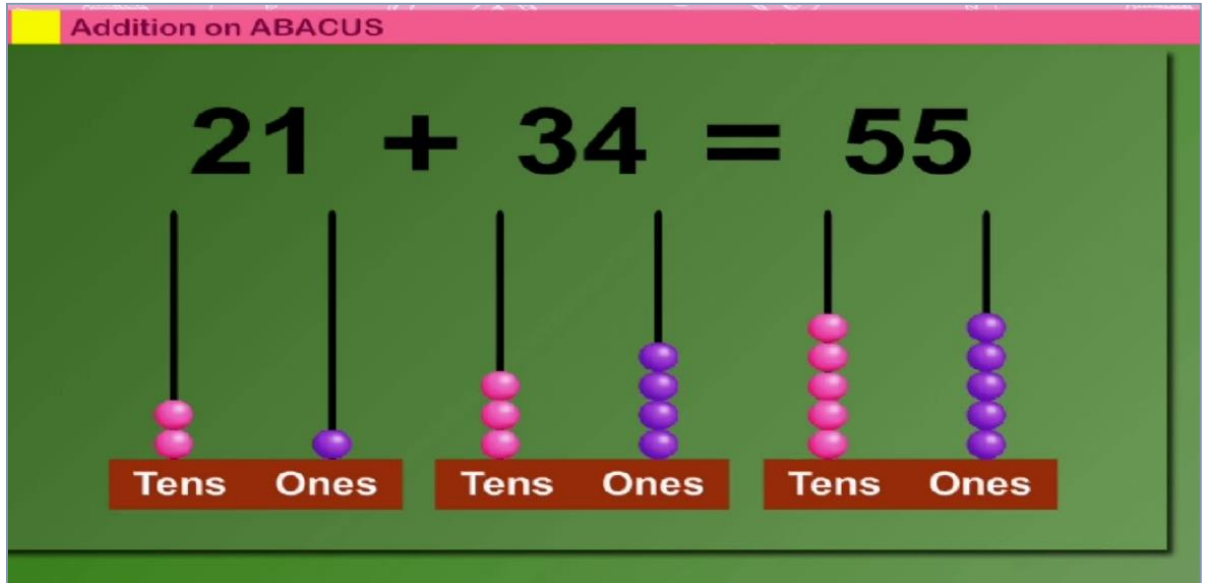
- After that explain the method of addition on board.
- Repeat the activity by taking different numbers.

**Activity 3:**

- Make/paste the following worksheet on the chart.
- Ask the whole group of students to find the sum.
- Guide them in their work.


**Activity 4:**

- Tell the students we can also add two 2-digit numbers using abacus.
- Take three abacus and explain the method through the given example.
- Repeat the activity by taking different examples.



**Activity 5:**

- Make/paste the following worksheet on chart.
- Provide cubic blocks of tens and ones or two abacus to students.
- Ask whole group of students to use cubic blocks of tens and ones to find the sum.
- Guide them in their work.

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+ 1	2																									
Tens	Ones																									
7	0																									
+ 1	0																									

**Activity 6**

- Divide the students in groups.
- Provide the following worksheet to students to solve by using ones and tens blocks.
- Guide them in solving questions.

Jared finds 22 pennies. The next day he finds 14 pennies. How many pennies does Jared find?

I need to find the total, so I add.

\_\_\_\_\_ pennies

Ellie has 16 paper clips. She collects 13 more paper clips. How many paper clips does Ellie have in all?

\_\_\_\_\_ paper clips

**Activity 7:**

- Clarify the concept of the addition of two 2-digit numbers from the Mathematics Textbook Grade 1.
- Students will solve some questions of the addition of two 2-digit numbers given in the textbook with the help of a teacher.

**Conclusion / Sum up / Wrap up:**

- Recap the addition of two 2-digit numbers through the following example.

Find  $53 + 26$ .

Step 1	Step 2
Add the ones.	Add the tens.
$\begin{array}{r} 53 \\ +26 \\ \hline 9 \end{array}$	$\begin{array}{r} 53 \\ +26 \\ \hline 79 \end{array}$

**Assessment:**

Provide the following worksheet to the students to solve.

Add. Write the sum.



1.

Tens	Ones
2	1
+	4
2	5
-----	
4	5

2.

Tens	Ones
1	8
+	1
-----	

3.

Tens	Ones
3	2
+	3
-----	

4.

Tens	Ones
2	3
+	2
-----	

5.

Tens	Ones
4	2
+	7
-----	

6.

Tens	Ones
7	5
+	0
-----	

7.

Tens	Ones
3	4
+	5
-----	

8.

Tens	Ones
4	2
+	6
-----	

9.

Tens	Ones
5	5
+	3
-----	

10.

Tens	Ones
6	4
+	1
-----	

11.

Tens	Ones
6	1
+	6
-----	

12.

Tens	Ones
7	2
+	4
-----	

### Follow up:

- Ask the students to solve the remaining questions of the addition of two 2-digit numbers given in the Mathematics Textbook Grade 1. Provide the following worksheet to solve.

**Two-Digit & Single-Digit Addition**

- 1) A ball pit has 81 colored balls in it. Ashley throws 5 more balls into the pit. How many balls are in the pit now?

\_\_\_\_\_



- 2) A baby beaver weighed 6 pounds in October. The weight increased by 23 pounds in three months. What would the new weight be?

\_\_\_\_\_



- 3) John ordered a pizza and a choco-chip cookie. The pizza cost \$14 and the cookie was priced at \$5. How much money did John spend in all?

\_\_\_\_\_



- 4) Rebecca and Sandra played Angry Birds online. At half an hour into the game, Rebecca had passed level 26. If Sandra was ahead of Rebecca by 3 levels, what level was Sandra in?

\_\_\_\_\_



- 5) Rick decides to light up his drive way using 24 porch lights. He also adds 4 more lights to the patio. How many lights did Rick use in all?

\_\_\_\_\_

**Glossary:**

**2-digit Number:** A number made up of two digits.

**Addition:** Addition is the process of adding two or more items together.

## NUMBER OPERATIONS (ADDITION)

### Find out the Unknown Numbers

**Duration:** 40 Minutes**Students Learning Outcome:**

- Recognize the use of symbols to represent an unknown (include questions that sum up to 20)

**Materials:**

Flashcards of addition sentences, charts, glue, cubic blocks, addition sentences strips and their answer strips, soft board, objects, worksheets, number cards 0 – 20, MCQs cards of addition sentence, play dough, ten frames, pegs, Mathematics Textbook Grade 1

### Information for Teachers:

- An addition sentence shows the sum of two or more numbers. The numbers that are added are known as “addends” and the result is known as the “sum” or the “total”.
- To find a missing addend in an addition sentence, we need to identify the number that should be added to the given addend to get the given sum.

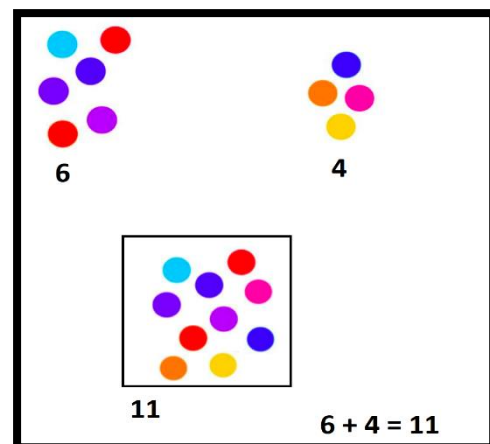
$$4 + \square = 5$$

- means to find the number that will be added into 4 to make 5.

**Teaching Tips:**

Here are some strategies that will help to teach, how to solve missing number addition sentence to students.

- Counting two sets of objects and putting them together then counting all objects.
  - $6 + 4 = ?$
  - Tip: Teach and model good counting skills by moving the objects one by one and counting at the same speed as you move the objects.





To find the missing addend in an addition sentence, we follow the following steps:

- Step 1: Look at the first number (addend). Put it in your head.
- Step 2: Count on with fingers until you reach the total/sum.
- Step 3: The number of fingers you put up is the missing number.



### Introduction:

- Divide the students in groups according to the class strength.
- Prepare the charts of addition sentences as shown in the figure.
- Provide one chart to each group along with cubic blocks.
- Ask them to build block towers that answer the addition sentence.
- Guide and appreciate them.

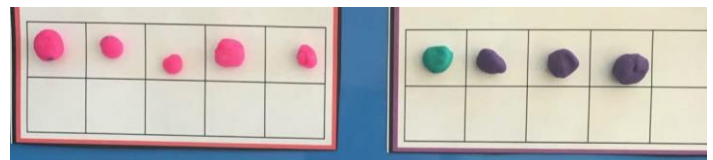
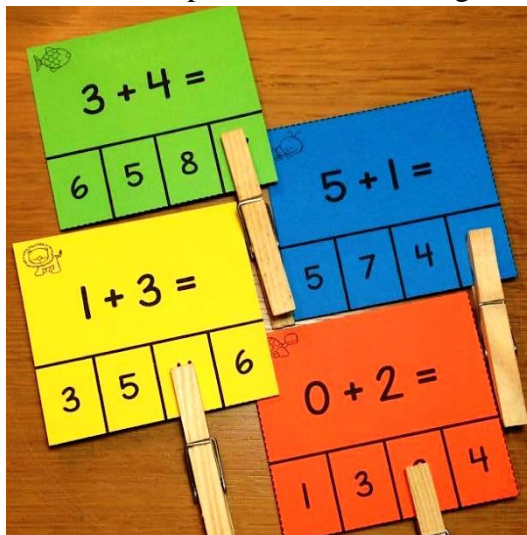


### Concept Development:

Explain the method of finding an unknown number in an addition sentence through the following activities.

#### Activity 1:

- Make the MCQs cards of addition sentence.
- Now provide MCQs cards, pegs, play dough and ten frames to whole group of students.
- Now ask them to solve the addition sentence by putting play dough balls in the ten frame and attaching a peg on the correct answer.
- A sample is shown in the figures.

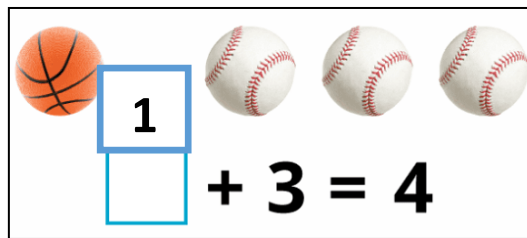


#### Activity 2:

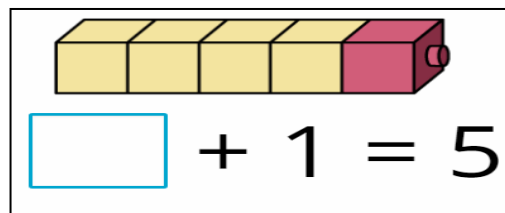
- Write the following addition sentence on board.

$$\square + 3 = 4$$

- Tell the students, now we will find the missing number to complete our addition sentence.
- Place 3 balls on the table.
- Tell them, these are three balls.
- Now how many balls are required to make 4 balls
- After getting their response, place 1 more ball on the table and ask them now how many balls altogether?
- Hence, we can say that 1 ball is required to make 4.
- Now draw 4 balls on the board and write 1 in the box.
- Tell the students, now our addition sentence is complete.

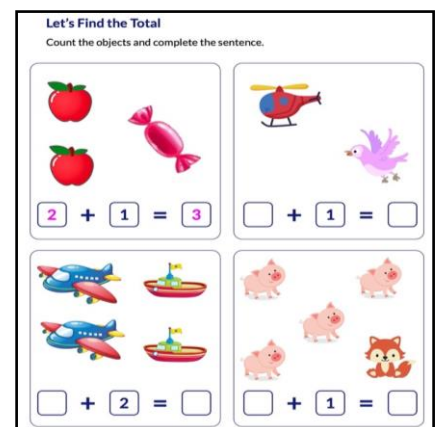


- Repeat the activity by using different objects and cubic blocks.



### Activity 3:

- Divide the students in groups according to the class strength.
- Provide following worksheet and concrete objects to groups of students.
- Ask students to complete the addition sentences using objects.
- Guide them in their work.



### Activity 4:

- Paste/Draw the given worksheet on chart.
- Display the chart on soft board.
- Now put number cards 0 – 9 on the table.
- Call any one student to come and solve any question by pasting correct number card.
- Ask other students to guide him in choosing correct number card.
- Repeat the activity with other students.

- For remaining students, you can make more questions (if possible).

**Let's Find the Missing Number**  
Complete the addition statement.

	$5 + \square = 7$
	$4 + \square = 9$
	$3 + \square = 5$
	$4 + \square = 7$
	$5 + \square = 8$

### Activity 5:

- Divide the students in groups according to the class strength.
- Provide following worksheet to each group to solve.
- Guide them in their work.

**Draw More Dots**  
Draw more dots using red color on the ladybug's second wing to match the addition sentence and then fill in the blanks.

	$5 + \square = 8$
	$6 + \square = 8$
	$6 + \square = 9$
	$4 + \square = 9$
	$5 + \square = 10$
	$7 + \square = 10$



**Activity 6:**

Write the following addition sentences on board.

- Call students one by one and ask them to solve on board by using their fingers.
- Solve one question on board and explain the method of finding missing number without using objects as follows;
  - Step 1: Look at the first number (addend). Put it in your head.
  - Step 2: Count on with fingers until you reach the total/sum.
  - Step 3: The number of fingers you put up is the missing number.

$5 + 2 = \square$

$\square + 7 = 9$

$4 + \square = 5$

$\square + 3 = 8$

$3 + 3 = \square$

$4 + \square = 7$

$14 + \square = 17$

$12 + \square = 16$

$17 + \square = 20$

$18 + \square = 19$

$16 + \square = 18$

$11 + \square = 20$

$13 + \square = 19$

$15 + \square = 18$

$\square + 16 = 20$

$\square + 18 = 20$

- Demonstrate the example given in the Mathematics Textbook Grade 1 to solve addition sentence by using pencils and number cards.

**Conclusion / Sum up / Wrap up:**

Recap the process of finding missing number in an addition sentence by pasting given addition sentences and their answer slips on soft board/chart and then dragging the answer slips to their correct places with the help of students.

	4	6	8	0	1
	10	2	15	13	9
	7	5	17	11	3

<input type="text"/> 7 + ? = 16	<input type="text"/> 4 + ? = 11	<input type="text"/> 2 + ? = 7
<input type="text"/> 13 + ? = 13	<input type="text"/> 17 + ? = 20	<input type="text"/> 7 + ? = 17
<input type="text"/> 4 + ? = 6	<input type="text"/> ? + 5 = 9	<input type="text"/> ? + 4 = 15
<input type="text"/> ? + 3 = 4	<input type="text"/> 6 + ? = 14	<input type="text"/> 7 + ? = 20
<input type="text"/> 1 + ? = 7	<input type="text"/> 5 + ? = 20	<input type="text"/> ? + 2 = 19

**Assessment:**

Provide the following worksheet to the students to solve.

Find the missing part of the total.	
$\square + 8 = 8$	$7 + \square = 12$
$\square + 4 = 12$	$8 + \square = 9$
$\square + 11 = 11$	$1 + \square = 8$
$\square + 5 = 9$	$6 + \square = 7$
$\square + 7 = 10$	$3 + \square = 6$
$\square + 2 = 7$	$6 + \square = 10$
$\square + 1 = 5$	$10 + \square = 11$
$\square + 3 = 5$	$2 + \square = 6$

**Follow up:**

Ask the students to solve questions of finding an unknown number in an addition sentence given in the Mathematics Textbook Grade 1.

**Glossary:**

**Addition Sentence:** An addition sentence shows the sum of two or more numbers. The numbers that are added are known as “addends” and the result is known as the “sum” or the “total”.

## NUMBER OPERATIONS (ADDITION)

### Addition using Mental Strategies

**Duration:** 40 Minutes**Students Learning Outcomes:**

- Add numbers (up to 20) using mental strategies by using real life examples.
- Construct addition sentence from given picture or number stories.

**Materials:**

Number cards 1 - 19, flashcards of addition sentences, concrete objects, counters, worksheets, one 10 rupee note, 4 coins of 1 rupee, chart, glue, paper slips of addition sentences, Mathematics Textbook Grade 1

**Information for Teachers:**

- Mental math is about performing math calculations in your head without a calculator or paper.
- Using mental math with addition involves breaking up the numbers into its separate parts and then adding up the matching parts and then adding up the sums to find the answer.
- Mental math strategies are accepted ways of working math out in your head that help us take shortcuts and get to the correct answer in an efficient way.
- Mental math strategies are the foundations for most of the areas of mathematics that use numbers.
- Mental math is useful in school and in everyday life. Mental math can help kids understand math concepts better and get to the answer faster.

**Teaching Tips:**

Here are some strategies that will help to teach addition using mental calculation of smaller numbers:

- Counting on

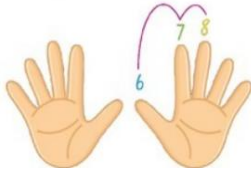


## Counting On

"Think Big, Count Small"

Put the **BIG** number in your head and **COUNT ON**

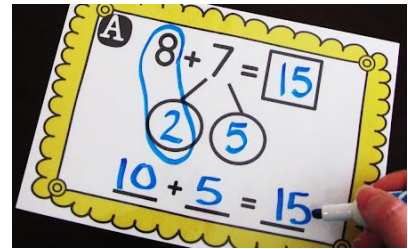
$$6 + 2 =$$



- Make a ten
- Use place value

### Top Tips

- Practise holding up a given amount of fingers so children instantly recognise how many fingers they need.
- Encourage your child to get their fingers ready before putting the number in their head or they may forget to stop counting.



Break big numbers into Tens and Units, add the Units, then add on the Tens.

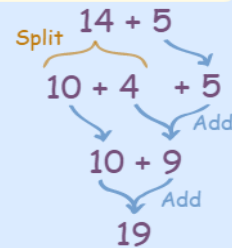
**Example: 14 + 5**

Break the "14" into Tens and Units:  $10 + 4$

Add the Units:  $4 + 5 = 9$

Now add the Tens:  $10 + 9 = 19$

Think "4 plus 5 is 9, plus 10 is 19"



## Introduction:

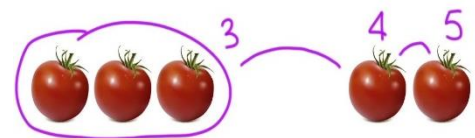
- Call any two students in front of the class.
- Give one 10 rupees note and four coins of 1 rupee to first student.
- Give three coins of 1 rupee to second student.
- Now ask each student to count his/her money and tell the amount.
- Write the amount of each student on board as Ali has 14 rupees and Sana has 3 rupees.
- Now ask both students to add their amounts and tell how many rupees altogether?
- After getting their response, write on board  $14 + 3 = 17$ .
- Now ask from students about the way they use to add money?
- Now ask other students how you will add these amounts?
- Encourage them to think and tell different ways.

## Concept Development:

Introduce the concept of mental addition using different strategies through the following activities. Ask them to count the fingers of them their friends.

### Activity 1:

- Show the students, three tomatoes (or any other object) and ask them to tell how many tomatoes?
- Now show one more tomato along with three tomatoes.
- Ask them to count on from 3 and tell how many tomatoes are now?



- Now show one more tomato along with four tomatoes.
- Ask them to count on from 4 and tell how many tomatoes are now?
- Tell the students that we choose the big number 3 and count on from 3 as 4, 5. So there are 5 tomatoes altogether.
- Write on board  $3 + 2 = 5$
- Tell the students that we can add two numbers by choosing big number and counting on from that number in our head.
- Now put 7 counters in front of each student.
- Again provide 4 counters to each student.
- Now ask them to count on from 7 and tell how many counters altogether.
- After getting their response, write on board  $7 + 4 = 11$

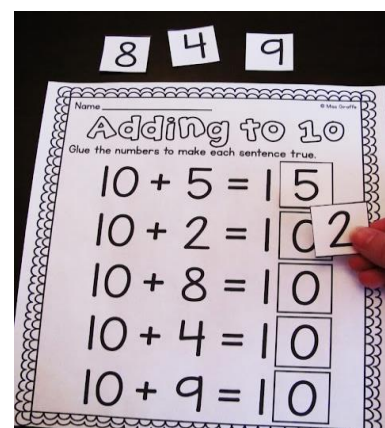
### Activity 2:

- Write addition sentences on paper slips as shown in the figure.
- Provide one slip to each student.
- Ask them to put the big number in your head and count on from that number.
- Write the answer on the slip.
- Guide them in their work.



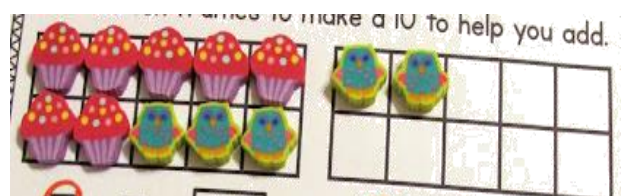
### Activity 3:

- Make the following worksheet on chart and display on the board.
- Put number cards 1 – 9 on the table.
- Ask the students to read the addition sentence, paste the correct number card to add to ten.
- Help them in their work.

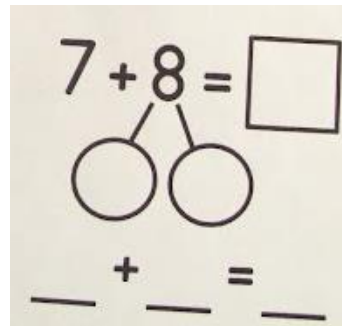
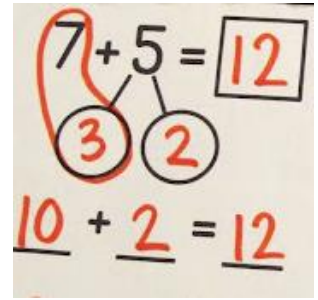


### Activity 4:

- Tell the students, we can add any two numbers orally by another method.
- We will make 10 then add the numbers with 10.
- Make two 10 frames on a paper slip.

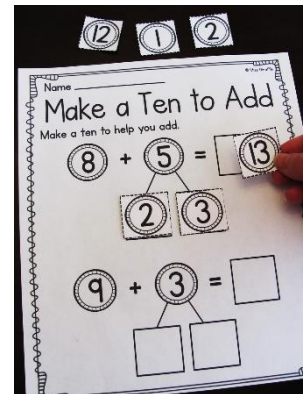


- Tell the students, there are 7 red cupcakes (or counters) and 5 blue cupcakes (or counters).
- Now we will see how many cupcakes altogether.
- Ask the student to put cupcakes on 10 frame to make ten.
- Place the remaining cupcakes on the other 10 frame.
- Now add the remaining cupcakes with 10 and tell the answer.
- After getting their response, tell the students, to add 7 and 5, we first break the number 5 into 3 and 2.
- Then we make 10 by adding 7 and 3. Now add 2 and 10 as shown in the figure.
- Tell the students, observe the 10 frame. Here you make 10 by combining three blue cupcakes and then add two cupcakes.
- Repeat the activity by giving more examples.
- Write the following questions on board and ask students to solve using 10 frame and counters.



### Activity 5:

- Make the following worksheet on chart and display on the board.
- Put number cards 1 – 20 on the table.
- Ask the students to read the addition sentence, paste the correct number cards to add the numbers by making 10.
- Help them in their work

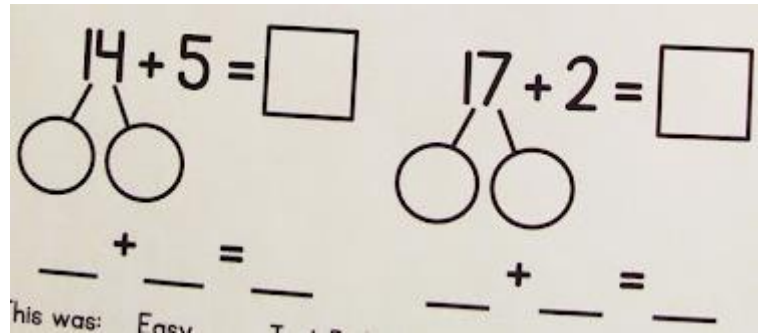
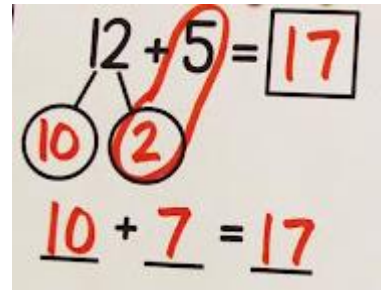


### Activity 6:

- Show the number cards of 12 and 5 to students.
- Ask them how you will add these numbers orally.
- After getting their response, tell the students that we can add 2-digit numbers orally by breaking them into tens and ones.
- Make two 10 frames on a paper slip.
- Tell the students, there are 12 birds (or any other object) and 5 carrots (or any other object).
- Now we will see how many objects altogether.
- Ask the student to put birds on 10 frame.



- Place the remaining birds and carrots on the other 10 frame.
- Now add the remaining objects with 10 and tell the answer.
- After getting their response, tell the students, to add 12 and 5, we first break the number 12 into 10 and 2, and then we add 2 ones and 5 ones.
- Now we add 7 ones with 10 as shown in the figure.
- Tell the students, observe the 10 frame. Here you break 12 birds into 10 birds and 2 birds and then add two birds and 5 carrots.
- Repeat the activity by giving more examples.
- Write the following questions on board and ask the students to solve using 10 frame and counters.



### Activity 7:

- Clarify the concept of addition using mental strategies from the Mathematics Textbook Grade 1.

### Conclusion / Sum up / Wrap up:

The concept of mental addition by explaining and solving following worksheet with the help of students.

$6 + 12 = \square$

We break the 12 counters to 10 and 2

Then we add the 2 along with the 6

Why do we break the 12 to 10 and 2?

### Assessment:

Provide flashcards of addition sentences or paper slip to each student and ask them to solve by using mental strategies.

$$4 + 11 =$$

$$5 + 10 =$$

$$6 + 9 =$$





### Follow up:

Ask the students to solve questions of addition using mental strategies given in textbook.

### Glossary:

**Mental math:** Performing math calculations in your head without a calculator or paper.

**Mental math strategies:** Accepted ways of working math's out in your head that help us take shortcuts and get to the correct answer in an efficient way.

## NUMBER OPERATIONS

### Subtraction without Borrowing

**Duration:** 40 Minutes**Students Learning Outcome:**

- Compare numbers from 1-20 and find “how much less” one is than other?

**Materials:**

Board, marker/chalk, Mathematics Textbook Grade 1, notebook

### Information for Teachers:

- To find how much a number is less than the other number means to find the difference between the two numbers using backward counting.
- For example: how much 3 is less than 9?  
Count backwards from 9 to 3.  
So, 3 is 6 less than 9.

**Teaching Tips:**

- Use backward counting strategy to teach the concept.
- Number line can also be used for this purpose.

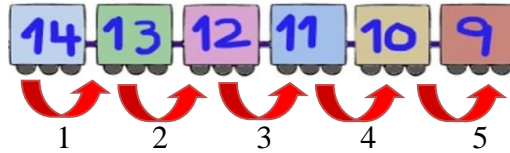
### Introduction:

- Access the prior knowledge of students by asking what is backward counting?
- Write ‘5’ on the board.
- Call a student on the board and ask him/her to write backward counting like this:  
5    4    3    2    1
- Appreciate his/her participation.
- Tell them to find how much a number is less than the other number; start counting backwards from bigger number to the smaller number. And then count the number of steps to find the answer.
- Open textbook page 58.
- Read the note given at the top of the page.
- Write ‘how much 9 is less or smaller than 14’ on the board.
- Tell them to find the answer, let’s write backward counting from 14 to 9 like this:





- Now count the number of steps from 14 to 9 like this:



- Explain to the students that 9 is 5 steps backward from 14.
- So, 9 is 5 less than 14.
- Let's practice some more examples.

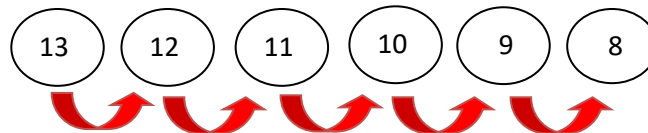
### Concept Development:

#### Activity 1:

- Write 'how much 8 is less than 13' on the board from the Mathematics Textbook page 58.
- Call a student on the board and ask him/her to write backward counting from 13 to 8 like this:



- Now call another student on the board and ask him/her to count the number of steps from 13 to 9 like this:

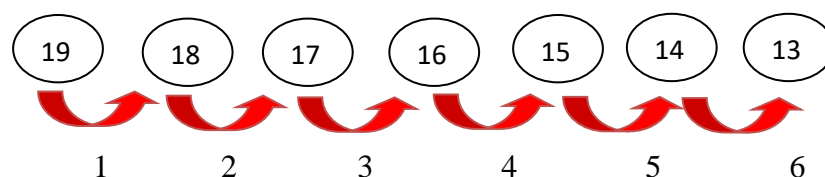


1      2      3      4      5

- Ask the whole class to count the number of steps from 13 to 8.
- Now tell them that 8 is 5 steps backward from 13.
- So, 8 is 5 less than 13.

#### Activity 2:

- Write 'how much 13 is less than 19' on the board from the Mathematics Textbook page 58.
- Call a student on the board and ask him/her to write backward counting from 19 to 13 like this:
- Now call another student on the board and ask him/her to count the number of steps from 19 to 13 like this:



- Ask the whole class to count the number of steps from 19 to 13.



- Now tell them that 13 is 6 steps backward from 19.
- So, 13 is 6 less than 19.

### Conclusion / Sum up / Wrap up:

Conclude the lesson by recalling the following points:

- How much a number is less than the other number, we find the difference between the two numbers using backward counting.
- For backward counting, always start from the bigger number and ends at the other given number.
- Count the number of steps to find the answer.

### Assessment:

Write the following questions on the board and call students to solve:

- a) How much 6 is less than 10?
- b) How much 12 is less than 20?
- c) 11 is \_\_\_\_ less than 14.
- d) 9 is \_\_\_\_ less than

### Follow up:

Ask the students to compare the numbers and write how much less a number is from the other:

- a) 4 and 12
- b) 15 and 19
- c) 7 and 13
- d) 12 and 17

### Glossary

**Comparing Numbers:** It is a process in which you determine if one number is equal, smaller or greater than the other number.

**Backward Counting:** Counting numbers from greatest to the smallest.

## NUMBER OPERATIONS

### Subtraction of 1-Digit Numbers

**Duration:** 40 Minutes**Students Learning Outcomes:**

- Recognize subtraction as a difference and take away, and use the symbol “-”.
- Subtract 1-digit number from 1-digit number.

**Materials:**

Board, marker/chalk, 6 apples (or any other concrete object like pencil, flashcards of “-” and “=”, Mathematics Textbook Grade 1, notebook

#### Information for Teachers:

- Subtraction is the process of taking away a number from another.
- It is the method of calculating the difference between two numbers.
- We use the symbol “-” for subtraction. It is read as ‘minus’ sign.

**Teaching Tips:**

- Use concrete objects like balls, beads, straws, pencils to practically solve subtraction problems.
- Play subtraction dice games e.g. start with a given number of objects say 7. Then take it in turns to roll a six-sided dice. The first player to roll subtracts the number shown on the dice from the 7 objects and works out how many they have left. Then take away the objects they have subtracted.

#### Introduction:

- Subtraction is an operation used to find the difference between numbers.
- The “-” symbol is used for subtraction process and read as ‘minus’.
- Explain to the students that when you have a group of objects and you take away few objects from it, the group becomes smaller.
- For example, if you bought 9 cupcakes for your birthday party and your friends ate 7 cupcakes.

7 out of 9 cupcakes are eaten                      2 cupcakes left



- This can be written in the form of a subtraction expression as:  $9 - 7 = 2$  and is read as "nine minus seven equals two".

- We can also write it as:



- Tell them that result of subtracting two numbers is called difference. Here, 2 is the difference.
- Also explain the following important points to the students:
- When '0' is subtracted from any other number, the result is the number itself e.g.  $2 - 0 = 2$
- When a number is subtracted from itself, the result is always '0' e.g.  $2 - 2 = 0$
- Ask the students to open textbook page 59 and demonstrate the given example on the board to clear the concept of subtraction.

## Concept Development:

### Activity 1:

- Demonstrate the following example on the board given in the Mathematics Textbook Grade 1 page 60.
- Draw 7 stars on the board and then cross out 4 stars to show subtraction. Ask the students the following questions:
- How many total stars are there?
- How many stars are cross out?
- What you will do; addition or subtraction?
- Tell them that there are 7 cars in total and 4 cars will be subtracted to find the difference.
- Ask the whole class how many cars are left?
- Help them if needed.
- Tell them there are 3 stars left.
- Write '7 minus 4 equals 3' on the board, then call a student and ask him/her to write it in subtraction form like this:  
 $7 - 4 = 3$
- Guide them if needed.

### Activity 2:

- Put 6 apples on the table in front of the students.
- Ask the students to count and tell how many apples.
- After getting their response, take away 2 apples.
- Ask the students to count the remaining apples once again.

- Now write the subtraction sentence on the board as:

6 apples      take away 2 apples      4 apples left  
 6 minus 2 equals 4  
 $6 - 2 = 4$

- We can also write it as

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

- Tell the students that this is called subtraction. Subtraction means to take away.
- Show flashcards of “-“and “=”to the students and tell them that the symbol of subtraction is “-“and “=” means ‘is equal to’.

### Activity 3:

- Ask the students to open Mathematics Textbook Grade 1 page 60.
- Draw 6 candies on the board.



- Call a student on the board and ask him/her to cross 4 candies like this:



- Now ask the whole class how many candies are left?
- After taking their response, call another student on the board and ask him/her to write the total number of candies, number of candies that were cross out and then write the candies that are left in the given boxes like this:

6
4
2

- Help them if needed.
- Now again call another student and ask him/her to write it in subtraction expression like this:

$$6 - 4 = 2$$

### Activity 4:

- Draw 4 ice creams on the board.
- Now write take away 2 on the board.
- Ask the whole class what do takeaway 2 means?
- Take their response and appreciate them.
- Now call a student on the board and ask him/her to cross out 2 ice-creams and also write how many are left like this:

2	are left
---	----------



- Repeat the whole activity with another example given on textbook page.

### Activity 5:

- Divide the class in groups (3 to 4) depending upon the number of students.
- Provide concrete objects e.g. pencils, buttons, beads, straws, etc. in different numbers to each group.
- Take away some objects from each group, so that students may solve different sums of single digit subtraction.
- Facilitate them where needed.
- Repeat the activity by providing different number of objects to each group.

### Conclusion / Sum up / Wrap up:

Conclude the lesson by recalling the following points:

- Subtraction is the process of taking one number from another.
- It is used to find the difference between numbers.
- The “-“symbol is used for subtraction process and read as ‘minus’.
- When ‘0’ is subtracted from any other number, the result is the number itself.
- When a number is subtracted from itself, the result is always ‘0’.

### Assessment:

Ask the students to solve the questions given on the Mathematics Textbook Grade 1 page 61.

### Follow up:

Ask the students to solve the questions given on textbook page 62.

### Glossary

**Subtraction:** The process of taking one number from another.

**1-digit Number:** A number made up of only one digit.



## NUMBER OPERATIONS

### Subtract 1-Digit Number from 2-Digit Number

**Duration:** 40 Minutes**Students Learning Outcome:**

- Subtract 1-digit number from 2-digit number.

**Materials:**

Board, marker/chalk, Mathematics Textbook Grade 1, plain sheets of paper, blocks, notebook

**Information for Teachers:**

- **2-digit subtraction** is done by placing the given numbers into columns using their respective place values, ones and tens.
- For example, subtract 39 and 2.
- We write it in column form as:

T	O
3	9
-	2
3	7

- To subtract 2-digit numbers, first subtract ones(o) from ones and then tens (t) from tens.

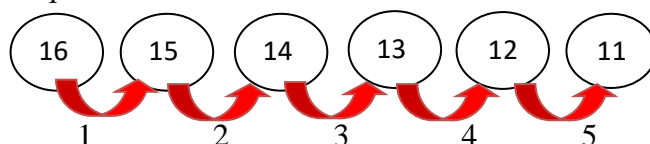
**Teaching Tips:**

- Use concrete objects like balls, beads, straws, counters to understand the subtraction problems.
- Use 'backward counting' technique to subtract numbers.

**Introduction:**

- Access their prior knowledge by asking, can you subtract 1-digit number from 2-digit number using backward counting?
- Demonstrate the example from the textbook page 63.
- Place 16 blocks on the table in front of the students.
- Call any student and ask him/her to take away 5 blocks.
- Now ask the remaining students to count and tell how many blocks are left.
- After getting their response, write the following information on the board as:

- Total blocks=16
- Take away blocks =5
- How many blocks are left=11
- Tell them in **subtraction, we always subtract the smaller number from the greater number to get the correct answer.**
- Here, 5 is smaller and 16 is greater.
- Recall subtraction using backward counting and tell them to find out the remaining blocks, subtract 5 from 16.
- Let's count 5 steps back from 16.



- So, 11 blocks are left.
- For subtracting 1-digit number from 2-digit number, we split the numbers into columns using their respective [place values](#), like ones, tens.
- We always start subtracting from the ones digit and move towards the digits at the tens place (right to left).
- Explain the following steps for 2-digit subtraction to the students:

- **Step 1:** Place the numbers one below the other such that the bigger number is placed up and the smaller number is placed below it.
- **In the above example: 5 is smaller and 16 is greater. So, we will place 5 below 16.**
- **Step 2:** The numbers need to be placed as per their place values such that the ones digits are aligned vertically together.

Tens	Ones
1	6
-	5

- **Step 3:** Start subtracting the digits from the ones column and then move on to the tens column.
- Subtract ones from ones i.e.,  $6 - 5 = 1$
- And then tens from tens i.e.,  $1 - 0 = 1$

Tens	Ones
1	6
-	5

←  
(Right to left)

- **Step 4:** Once the difference is obtained, the corresponding answer is written underneath.
- As, 6 ones – 5 ones= 1 one. So, write 1 under ones column and;
- 1 ten – 0 ten =1 ten. So, write 1 under tens column like this:

Tens	Ones
1	6
-	5
1	1

- So,11 blocks are left.

**Concept Development:****Activity 1:**

- Ask the students to open textbook page 64.
- Write  $26 - 4$  on the board.
- Ask the students the following questions:  
Which is the greater number?  
Which is the smaller number?  
How do you write  $26 - 4$  in column form?  
Appreciate their participation.
- Call a student on the board and ask him/her to write it in column form like this:

Tens	Ones
2	6
-	4

- Ask the whole class, which column will be subtracted first?
- Now ask them, what will be written under ones column?
- Take their response and guide if needed.

Tens	Ones
2	6
-	4
	2

- Explain to the students when there is nothing to subtract from a number means subtract 0 from that number.
- Here, in tens column: 2 tens - 0 tens = 2 tens
- '0' subtracted from any number is always the number itself.
- Now call a student on the board and ask him/her to solve the tens column like this:

Tens	Ones
2	6
-	4
2	2

- Help them if needed.

**Activity 2:**

- Ask the students to open textbook page 63.
- Write  $58 - 6$  on the board.
- Ask the students the following questions:  
Which is the greater number?  
Which is the smaller number?
- Call a student on the board and ask him/her to write it in column form like this:

Tens	Ones
5	8
-	6



- Now call another student on the board and ask him/her to solve the sum like this:

Tens	Ones
5	8
-	6
5	2

- Help them if needed.

### Conclusion / Sum up / Wrap up:

Conclude the lesson by recalling the following points:

- For subtracting 1-digit number from 2-digit number, split the numbers into columns using their respective [place values](#), like tens and ones.
- Always start subtracting from the ones digit and move towards the digits at the tens place (right to left).
- Once the difference is obtained, the corresponding answer is written underneath.

### Assessment:

- Provide plain paper to each student. Ask the students to write the following questions in vertical form first and then subtract:
  - a)  $67 - 2$
  - b)  $71 - 4$
- Take a quick round and check their work.
- Guide them if needed.

### Followup:

Ask the students to solve the following questions in their notebooks:

- a)  $88 - 7$
- b)  $45 - 0$
- c)  $99 - 9$
- d)  $68 - 6$

### Glossary

**1-digit Number:** A number made up of only one digit.

**2-digit Number:** A number made up of two digits.

**Subtraction:** To take away from a group or number of things.

## NUMBER OPERATIONS

### Subtract 2-digit number from 2-digit number

**Duration:** 40 Minutes**Students Learning Outcomes:**

- Subtract tens from 2-digit number
- Subtract 2-digit number from 2-digit number (which result in positive)

**Materials:**

Board, marker/chalk, Mathematics Textbook Grade 1, notebook

**Information for Teachers:**

- For subtracting, 2-digit number from 2-digit number, we split the numbers into columns using their respective place values, like ones and tens.
- To subtract 2-digit numbers, first subtract ones(o) from ones and then tens(t) from tens.
- To subtract tens, we only subtract the tens and the ones are always zero (0).

**Teaching Tips:**

- Use base 10 blocks that provide hands-on-ways to learn place value, number concepts, operations, measurements and much more.

**Introduction:**

- Access their prior knowledge by asking the following questions:
  - What do you know about subtraction?
  - Which symbol is used for subtracting the two numbers?
  - Can you subtract smaller number from greater number?
  - Which number is placed first (greater or smaller)?
- Take their response and appreciate their participation.
- Correct them if needed.
- Explain the following rules for subtracting 2-digit numbers:
- First split the numbers into columns using their respective place values, like ones and tens.
- While writing the numbers in their respective columns, always put the greater number above the smaller number.
- Always start subtracting from the ones digit and move towards the digits at the tens place (right to left).

- Always subtract ones from ones and tens from tens.
- Subtracting 0 from any number gives the number itself e.g.  $3 - 0 = 3$
- Ask a student to read aloud the question given on textbook page 65.
- Write the given information on the board like this:
  - Total sheep = 48
  - Sheep sold = 30
  - Sheep left = ?
- Tell the students to subtract, put the greater number first and smaller number below by splitting the numbers into columns using their respective place values, **like this:**

Tens	Ones
4	8
- 3	0

- Start subtracting from ones column.
- Step I: Subtract ones from ones.  $8 - 0 = 8$ . Write 8 in ones column.
- Step II: Subtract tens from tens.  $4 - 3 = 1$ . Write 1 in tens column.

Tens	Ones
4	8
- 3	0
1	8

- So, 18 sheep are left.

## Concept Development:

### Activity 1:

- Ask a student to read aloud the question given on textbook page 66.
- Ask the whole class:
  - How many total candies are there?
  - How many candies are distributed?
  - How do you find the number of candies left?
- Take their response and appreciate their participation.
- Write 85 minus 64 on the board.
- Call a student and ask him/her to put the correct symbol in between the numbers like this:  
 $85 - 64$
- Call another student and ask him/her to write it in column form like this:

Tens	Ones
8	5
- 6	4

- Call again another student and ask him/her to solve:

Tens	Ones
8	5
- 6	4
2	1

- So,  $85 - 64 = 21$

### Activity 2

- Write  $57 - 40$  on the board.
- Call a student and ask him/her to write it in column form like this:



Tens	Ones
5	7
- 4	0

- Call again another student and ask him/her to solve:

Tens	Ones
5	7
- 4	0
1	7

- So,  $57 - 40 = 17$
- Guide them if needed.

### Conclusion / Sum up / Wrap up:

Conclude the lesson by recalling the following points:

- For subtracting, 2-digit number from 2-digit number, split the numbers into columns using their respective [place values](#), like ones and tens.
- While writing the numbers in their respective columns, always put the greater number above the smaller number.
- Always start subtracting from the ones digit and move towards the digits at the tens place (right to left).
- Always subtract ones from ones and tens from tens.
- Subtracting 0 from any number gives the number itself e.g.  $3 - 0 = 3$

### Assessment:

- Ask the students to solve the sums given on textbook page 66.
- Take a quick round and check the work of few students.
- Ask the rest of the students to check their partners work. In this way, all the students' work will be checked and their concept will be cleared.

### Followup:

Ask the students to solve the questions given on textbook page 67.

### Glossary:

**2-digit Number:** A number made up of two digits.

**Subtraction:** To take away from a group or number of things.

## NUMBER OPERATIONS

### Subtraction using Mental Strategies

**Duration:** 40 Minutes**Students Learning Outcomes:**

- Subtract numbers (up to 20) using mental strategies involving real life situations.
- Construct subtraction sentences from the given pictures or number stories.

**Materials:**

Board, marker/chalk, Mathematics Textbook Grade 1, notebook.

### Information for Teachers:

Mental math is about performing math calculations in your head without a calculator or paper.

- Mental calculation is a skill that not only helps us to become better at computation but it also enhances the development of number concepts.
- Using mental math with subtraction, we subtract the number by some shortcut methods without solving it on paper.

**Teaching Tips:**

The following are some strategies that help to teach mental subtraction of numbers:

- Count back
  - Make 10
  - Split strategy
- Using a number line

**count BACK**

$14 - 3 = ?$   
 $14, 13, 12, 11$   
 $= 11$

Put the larger number in your head and count back from there.

$55 - 23$

$= 5 \text{ tens } 5 \text{ ones} - 2 \text{ tens } 3 \text{ ones}$

$= 3 \text{ tens } 2 \text{ ones}$

$= 32$

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**Use a number line**

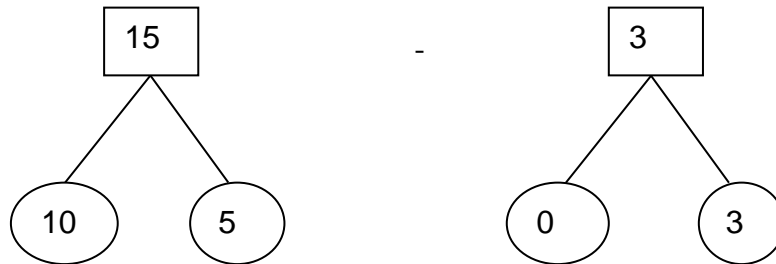
Start with the greater number and count back by jumping to the left

$8 - 2 = ?$

$8 - 2 = 6$

## Introduction:

- Explain to the students that mental math is about performing math calculations in your head without using a pencil or paper.
- Ask a student to read aloud the question.
- Write the given information from the question like this:
  - Arham had chocolates = 15
  - He ate = 3
  - Chocolates left = ?
  - Subtraction sentence:  $15 - 3$
- Using mental math with subtraction involves breaking up the numbers into its separate parts and then subtracting up the units and tens.
- To subtract two numbers mentally, subtract the digits separately.
- Demonstrate the example given in textbook page 69 on the board.
- Now let's find out the remaining chocolates using mental strategy.  
Step 1: Separate the numbers into tens and ones.  
 $15 = 1 \text{ ten} + 5 \text{ ones} = 10 + 5$   
 $3 = 0 \text{ tens} + 3 \text{ ones} = 0 + 3$

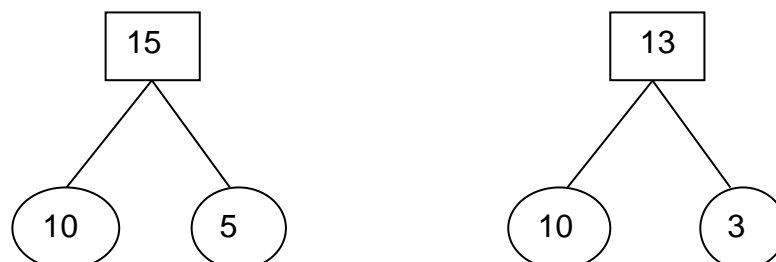


- Step 2: Subtract the tens.  
 $10 - 0 = 10$
- Step 3: Subtract the ones.  
 $5 - 3 = 2$
- Step 4: Add the difference of tens and ones.  
 $10 + 2 = 12$
- The answer ends in the same digit that the difference of the ones ends in.
- So, Arham had 12 chocolates left.

## Concept Development:

### Activity 1:

- Write  $15 - 13$  on the board.
- Ask the students, can you solve it mentally?
- Collect their feedback and tell them that we have a simple method to solve it mentally.
- First break up the numbers into 'tens' and 'ones'.



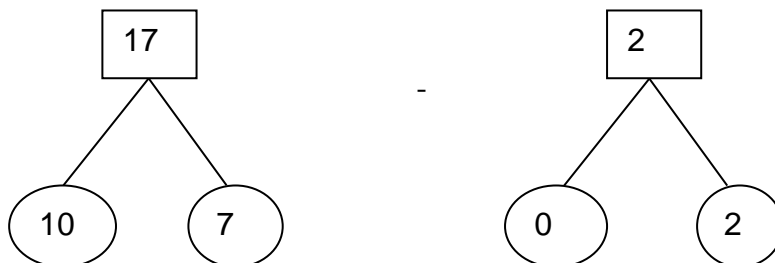
- Ask any student to tell how many ‘tens’ and ‘ones’ are in 15 and 13.
- Appreciate his/her response.
- Write the strategy on the board like this.  
 $15 = 1 \text{ ten} + 5 \text{ ones}$   
 $13 = 1 \text{ ten} + 3 \text{ ones}$
- Tell the students to subtract ones from ones and tens from tens.  
 $1 \text{ ten} - 1 \text{ ten} = 0 \text{ tens}$   
 $5 \text{ ones} - 3 \text{ ones} = 2 \text{ ones}$
- At the end, write the two answers as:  
 $0 \text{ tens } 2 \text{ ones} = 2$   
So, the required answer is 2.

### Activity 2:

- Demonstrate the following example on the board.
- Find the difference between 17 and 2.
- Call a student on the board and ask him/her to write the subtraction sentence like this:  
 $17 - 2$
- Draw the boxes on the board like this:



- Randomly call a student on the board and ask him/her to separate the numbers in tens and ones like this:



- Now call two students on the board one by one and ask him/her to write the strategy on the board and solve like this.  
 $17 = 1 \text{ ten} + 7 \text{ ones}$   
 $2 = 0 \text{ ten} + 2 \text{ ones}$   
Subtract tens from tens i.e.  $1 - 0 = 1$   
Subtract ones from ones i.e.,  $7 - 2 = 5$
- Now first write ‘tens’ and then ‘ones’ (from left to right) i.e. 15  
So, the difference between the two numbers is 15.

### Activity 3:

Write the subtraction sentences on the board:

a)  $18 - 4 = \underline{\hspace{2cm}}$

b)  $19 - 7 = \underline{\hspace{2cm}}$

- Divide the students in pairs and ask them to solve these questions using mental calculations.



- Check their work and guide them.
- Recap the use of mental calculation method and write the correct answers on the board.

### Conclusion / Sum up / Wrap up:

Conclude the lesson by recalling following rules of mental subtraction:

- First break up the numbers into 'tens' and 'ones'.
- Then subtract tens from tens and ones from ones.
- At the end, first write tens and then ones (from left to right).

### Assessment:

- Ask the students to solve the questions given on the Mathematics Textbook Grade 1 page 69.
- Check their work and correct them if needed.

### Follow up:

Write the following questions on the board and ask the students to solve in their notebooks using mental strategy.

- a)  $17 - 6 = \underline{\quad}$
- b)  $19 - 11 = \underline{\quad}$
- c) Sara had 16 candies. She ate 6. How many candies are left?

### Glossary

**Mental math:** Performing math calculations in your head without a calculator or paper.

**Mental math strategies:** Accepted ways of working math's out in your head that help us take shortcuts and get to the correct answer in an efficient way.

## MEASUREMENT

### Comparison of Objects

**Duration:** 40 Minutes**Students Learning Outcome:**

- Compare the lengths of two or more objects using the following terms:
  - long, longer, longest
  - Short, shorter, shortest

**Materials:**

Writing board, chalk/marker, duster, picture of pencils, 3 rods/sticks, 3 carrots of different lengths, worksheet 1 and 2, Mathematics Textbook Grade 1

**Information for Teachers:**

- Terms long is used to measure the length of objects that are horizontal in orientation.
- Terms longer and longest are degrees of long that are used to compare the length of two or more objects.
- Term short is used to measure the smallest distance of objects from one end to another, object is either horizontal or vertical in orientation.

**Teaching Tips:**

- Use concrete objects like thread, pencil, spoon, scale, paintbrushes. to compare their lengths.
- Involve the students in discussion about the comparison of different objects in terms of length in their surroundings.

**Introduction:**

- Brainstorm what students know about the term 'length'. And how the term used in everyday life such as 'Look at the length of this pencil'.
- Show some objects of different lengths to the students e.g. a long and a short pencil. Ask the students to which is long/short?
- After getting their response, hold up the long pencil and say the word 'long'. Now hold up the short pencil and say the word 'short'.

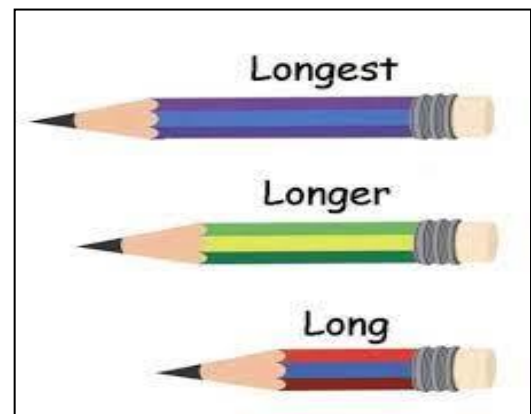


- Draw two horizontal lines of different lengths on the board and identify the terms long and short.
- Discuss a few pairs of long and short things present in the class, then ask the students to think and tell about a pair of long and short objects from surroundings.
- Repeat this activity with different objects like scale, geometry box, etc.

### Concept Development:

#### Activity 1:

- Arrange the picture of pencils of different colors(long, longer, longest) on the soft board, so that their lengths could be compared.
- Take out the longest pencil and display the flashcard containing the word “longest”. Ask the students to say the word “longest”.
- Repeat the activity with the words longer and long.
- Again, arrange the picture of pencils (short, shorter, shortest) on the soft board.
- Ask students the following questions:
  - Which one is the shortest pencil?
  - Which pencil is shorter than the blue pencil?
- Involve the students in discussion to compare different objects available in the classroom or in their surroundings e.g., geometry boxes of different lengths, scale, lunch boxes, etc.



#### Activity 2:

- Take three rods of different lengths and asked any student from the class to arrange the rods according to their length using terms long, longer and longest.
- Similarly, ask any other student to arrange the rods according to their length using terms short, shorter and shortest.

#### Activity 3:

- Divide the class in groups of 3 according to the class strength.
- Provide 3 strings of different lengths to first group.
- Provide 3 ribbons of different lengths to second group.
- Provide 3 sticks of different lengths to third group.
- Now ask each group to arrange the objects according to their lengths and say the terms long, longer longest.
- Repeat the activity for the terms short, shorter and shortest.

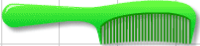
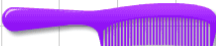




**Conclusion / Sum up / Wrap up:**

- Place carrots of different lengths on the table in front of the class. Randomly call students to arrange carrots and compare their lengths by using the following terms :  
long, longer, longest  
short, shorter, shortest
- Involve all students in this activity to enhance the understanding of concept.

**Assessment:**

- Prepare the following worksheet 1 and distribute it to the students.
  - Check their work and guide them where needed.
- Worksheet 1

Which of these objects is long, longer and longest?

LONG	LONGER	LONGEST
		-----
		-----
		-----
		-----
		-----
		-----

**Follow up:**

- Ask the students to draw any 3 objects of different lengths and label them with short, shorter and shortest.
- Prepare the following worksheet 2 and distribute it to the students to solve.
- Help them where needed.

## Worksheet 2

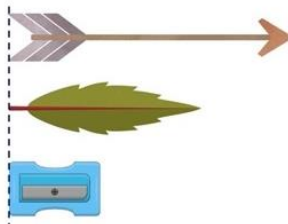
### Identify Shorter or Longer

Fill in the blanks with longer or shorter.



The broom is \_\_\_\_\_ than the paint brush.

The crayon is \_\_\_\_\_ than the broom.



The leaf is \_\_\_\_\_ than the arrow.

The leaf is \_\_\_\_\_ than the sharpener.

### Glossary:

**Length:** It is the measure of the distance between any two points.

## MEASUREMENT

### Comparison of Objects

**Duration:** 40 Minutes**Students Learning Outcome:**

- Compare the heights of two or more objects using the terms; tall, taller and tallest.

**Materials:**

Writing board, chalk/marker, duster, chart, blocks of different colors, 3 candles of different sizes, flashcards (tall, taller, tallest), worksheet, plain sheets of paper, Mathematics Textbook

### Information for Teachers:

- Term tall is used to measure the height of the objects that are vertical in orientation.
- Terms taller and tallest are degrees of tall that are used to compare the height of two or more objects.

**Teaching Tips:**

- Lining up from tallest to shortest is a great way to practice looking at height and exploring the terms tall, taller and tallest.
- Arrange a visit to a park. Ask the students to observe the heights of different plants/trees. Find out the tallest and the shortest tree.

### Introduction:

- Ask students the following question:
  - Who is taller than you in your family?
  - When you come to school how long does it take?
  - After getting their response, involve students in discussion so that everyone could recall the difference between long and tall.

### Concept Development:

#### Activity 1:

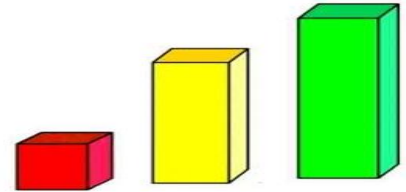
- Ask any 3 students of different heights to stand in the front of the class.
- Provide them with flashcards written

Tall, Taller, Tallest

- Tell them to stand in the order such as
- Ask them to hold the flashcards as well
- Introduce the term 'taller' and tallest.

### Activity 2:

- Make two groups of whole class.
- Provide a collection of blocks of different colors to each group.
- Ask the students in each group to make block towers.
- Then ask questions about the block towers e.g.
- Which tower is taller than the red tower?
- Which tower is shorter than the green or blue tower?
- Which tower is the tallest?
- Collect their response and guide them where needed.



### Activity 3:

- Place a candle of different lengths on the table in front of the class and say candles are tall but what is taller than a candle in your bag.
- After collecting their response, ask the students to tell what was the tallest object
- Involve maximum students in this activity to ensure their understanding.

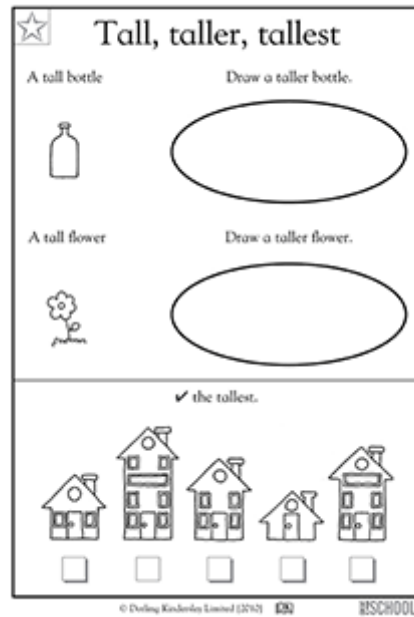
### Conclusion / Sum up / Wrap up:

- Place 3 candles of different lengths on the table in front of the class.
- Randomly ask a student to arrange these candles according to their height by saying terms tall, taller and tallest.
- Repeat the activity by using different concrete objects.
- Involve maximum students in this activity to ensure their understanding.



### Assessment:

Prepare the following worksheet and distribute it to the students.



### Follow up:

- Ask the students to draw the picture of their family on a plain paper and label the tallest person of family as 'tallest'.
- Ask the students to solve page no 79 of Mathematics Textbook Grade 1.

### Glossary:

**Height:** It is the measure of vertical distance from the base to the top.



## MEASUREMENT

### Comparison of Objects

**Duration:** 40 Minutes**Students Learning Outcome:**

- Compare the heights of two or more objects using the terms; high, higher and highest.

**Materials:**

Writing board, chalk/marker, duster, different color sheets, balloons, ball, worksheet, Mathematics Textbook Grade 1

**Information for Teachers:**

- Term High is used to measure the height of objects above the ground.
- Terms higher and highest are the degrees of high and are used to compare the heights of two or more objects.

**Teaching Tips:**

- Engage the students in a discussion to find and compare things from their surroundings in terms of high, higher and highest.
- Make a chart showing pictures of high, higher and highest to have a full understanding of the concept.

**Introduction:**

- Ask students the following question:
- Can you see birds, clouds, airplanes, kites, etc. flying in the sky? Which one fly higher in the sky?
- After getting their response, explain the term 'high' to the students.
- Show the ceiling fan to the students and introduce the term 'high'. Explain that fan is high from the ground.

## Concept Development:

### Activity 1:

- Take a ball.
- Call 3 students in front of the class.
- Ask the students to stand at a certain distance from board.
- Give the ball to the students and ask them to throw the ball on the board one by one.
- Mark the point where the ball hits the board.
- Label these points according to their degree of height i.e, high, higher, highest.
- Announce the name of that child who hits the ball at highest point.

### Activity 2:

- Call students at random in front of the class
- Provide them with A4 sheets
- Help them in making paper glider
- Ask them to fly those plans
- Ask the students whose plane rose higher

### Activity 3:

- Take three balloons of different colors.
- Randomly ask a student to paste these balloons on the wall at different heights.
- Now ask any other student to compare their heights using terms i.e., high, higher, highest.



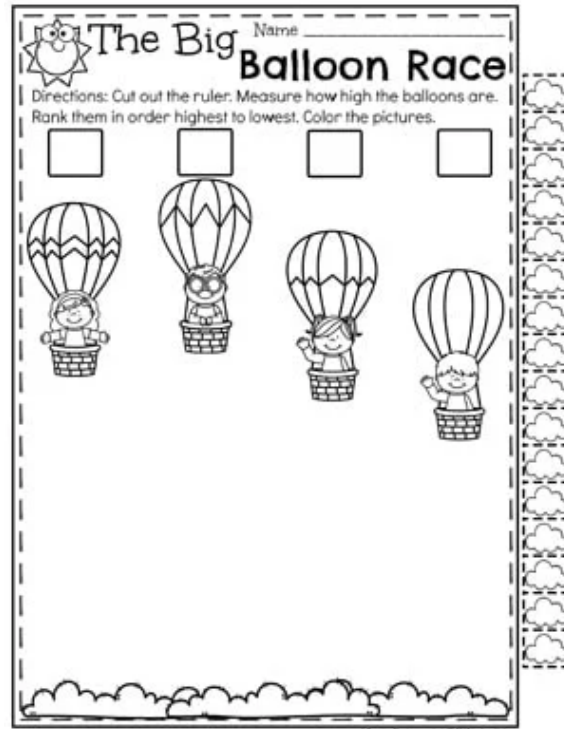
## Conclusion / Sum up / Wrap up:

- Draw three clouds (or a shape) at different height on board.
- Ask any student to identify the high, higher and highest cloud.
- Also mark “1” for high, “2” for higher, “3” for highest.
- Repeat the activity by drawing different objects on the board.



**Assessment:**

Prepare the following worksheet and distribute to the students to solve.

**Follow up:**

Ask the students to solve page no 81 of Mathematics Textbook Grade 1.

**Glossary:**

**Height:** The measurement of the vertical distance of an object from the base to the top.

## MEASUREMENT

### Comparison of Objects

**Duration:** 40 Minutes**Students Learning Outcome:**

- Compute the masses of two or more objects using the terms:
  - Heavy, Heavier, Heaviest
  - Light, Lighter, Lightest

**Materials:**

Writing board, chalk/marker, duster, pictures of an elephant and a mouse, concrete objects (heavy and light), flashcards of heaviest and lightest, balance scale, rocks/stones of different masses, worksheet, Mathematics Textbook Grade 1

**Information for Teachers:**

- Mass is the amount of matter or substance that makes up an object.
- Everything we see around us has mass e.g. a table, a chair, a glass, etc.
- Terms 'heavy' and 'light' are used to measure the mass of the objects.

**Teaching Tips:**

- Use balance scale to compare two objects using terms heavier and lighter.
- Put two objects on the scale and show students that the heavier object drops towards the ground while the lighter object lifts up.

**Introduction:**

- To revise the terms heavy and light, show the students the pictures of elephant and the mouse and ask them which is heavy and which is light.
- Show some objects of different masses to the students e.g. a book and a notebook. Ask them to say which is heavier/lighter.
- Hold up the book and say the word 'heavier', also write this word on board.
- In the same way introduced the term 'lighter'.
- Now place book, notebook and school bag on the table in front of the class.
- Ask the students to tell which one is the heaviest object.

## Concept Development:

### Activity 1:

- Divide the students in pairs in school ground/garden.
- Ask each pair to sit on seesaw and compare using terms 'heaviest' and 'lightest'.
- Explain that the heavy child comes down and the light goes up.
- While conducting this activity, it must be ensured that no such situation occurs in which feelings of any child are hurt.

### Activity 2:

- Divide the class in groups of 3 to 4 depending upon the strength of the class.
- Provide balance scale and rocks/stones of different masses to each group.
- Ask each group to place the rocks/stones on the scale and sort out the 'heaviest' and the 'lightest' respectively.
- Guide them where needed.

### Activity 3:

- Ask the class to work in groups of five.
- Give 3 water bottles (of different masses) to each group.
- Ask each group to label lightest and heaviest bottle by holding the respective flashcards.

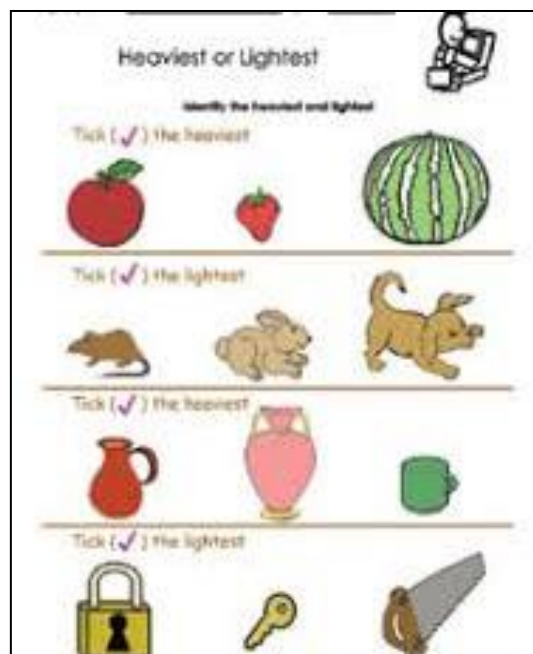
## Conclusion / Sum up / Wrap up:

Ask the students to solve the questions given on page no 83 of Mathematics Textbook Grade 1.

## Assessment:

- Prepare the following worksheet and distribute to the students.
- Ask the students to tick the heaviest and lightest items.

### Worksheet





## Follow up

- Ask the students to draw any 3 items or objects of different masses in their notebooks
- Compare the objects by labelling them heavy, heavier and heaviest.

## Glossary:

- **Mass:** Mass is the amount of matter or substance that makes up an object.

## MONEY

### Pakistani Currency Pakistani Coins and Notes

**Duration:** 40 Minutes**Students Learning Outcome:**

- Identify Pakistani currency coins (Rs 1 and Rs 2, 5, 10), Identify Pakistani Currency notes (Rs 10, 20, 50 and 100)

**Materials:**

Writing board, chalk/marker, duster, real Pakistani coins/notes, plastic container, sand/rice, pictures of Pakistani coins and notes, Mathematics Textbook Grade 1

**Information for Teachers:**

- Money is the medium of exchange for goods and services.
- Different coins and paper money have different values.
- The front and back side of each coin and note is different.
- We write rupees in short form as 'Rs'.

**Teaching Tips:**

- Show real currency coins and notes in the classroom and discuss their front and back side with the students.
- Play money games using fake coins and notes.

**Introduction:**

- Ask from students, do they buy goods from shop?
- What thing they give to shopkeeper against goods?
- Tell them the importance of money.
- Tell them every Pakistani coin and note has two faces.
- Tell them the value of coin/note is written on that coin/note.





## Concept Development:

### Activity 1:

- Ask the students to look at page no 88 of Mathematics Textbook Grade 1.
- Show them different coins and note on book.
- Make sure that each student can see the amount of money stamped on each coin/note.
- Talk about the sizes and colors of the coins; which is largest / smallest? Which would enable you to buy more?
- Discuss about the front and back side of coins and notes.
- Also discuss briefly the introduction of buildings, printed on the back side of notes.
- Tell them how to read the value of coins and notes.

### Activity 2:

- Place some real coins and notes on the table in front of the class.
- Pick them up one by one.
- Ask students to tell you, their value.

### Activity 3:

- Place real coins and notes in a large plastic container partially filled with rice or sand.
- Mix the coins/notes and rice (or sand) to hide the coins/notes.
- Pass this container among the class.
- Ask the students to find the coins/notes.
- Ask them to write on their copies which coin did they collect.
- Ask the students to tell you the names of the coins/notes they find.

## Conclusion / Sum up / Wrap up:

- Ask the students if they have any Pakistani coins or notes in their wallets.
- Ask them to show their coins/notes and identify their values.

## Assessment:

- Ask the students to open their notebooks.
- Paste the pictures of Pakistani coins and notes in their notebooks.
- Ask them to write their value.
- Check their work and guide them where needed.

## Follow up:

- Ask the students to make coins and notes with paper.
- Put their money in their money boxes and bring them to the class the next day.
- Show the coin/note to your fellows and tell the value of coin/note.
- Ask the students to solve page no 90 of mathematics Textbook Grade 1.

## Glossary:

**Currency:** It is the form of money, including coins and paper notes.

**Money:** Money is the medium of exchange for goods and services.

## MONEY

### Addition and Subtraction of Money

**Duration:** 40 Minutes**Students Learning Outcomes:**

- Match a group of coins/notes to an equivalent group of different denominations.
- Add and subtract money using the prices of objects transactions e.g., Toys.
- Add different combinations of coins/notes (to make sum up to 100).

**Materials:**

Writing board, chalk/marker, duster, different Pakistani coins/notes, Mathematics Textbook Grade 1- Monopoly if available.

**Information for Teachers:**

- When dealing with money, denomination is the value of the individual currency.
- A high value coin can be exchanged with lower value coin.
- A high value note can be exchanged with lower value coin and note.

**Teaching Tips:**

- Encourage the students to make paper coins and notes and play money games.
- Role play as a 'shopkeeper' and students 'buyers'. Represent some objects with price tags and ask the students to pick out the coins/notes of equivalent amount after reading price tags.

**Introduction:**

- Show coins and notes of different denominations and ask students to tell you the value.
- Show five coins of Rs 2 one-by-one and help students to count in 2s to find their value.
- Repeat the activity with three Rs 10 notes.
- Repeat the activity with different numbers of different denominations of coins and notes and ask students to tell you the total amounts of money.



## Concept Development:

### Activity 1:

- Revise the concept of addition of 1- and 2-digit numbers.
- Talk about a situation, when you go for buying a notebook with your father.
- Your father has to pay Rs 30 to the shopkeeper.
- Your father has a note of Rs 50 but the shopkeeper refuse that he/she does not have change.
- Then your father goes to other shop and demand a change.
- The shopkeeper takes one note of Rs 50 and give 5 notes of Rs 10 to your father.
- Write this statement on board.
- $\text{Rs } 50 = \text{Rs } 10 + \text{Rs } 10 + \text{Rs } 10 + \text{Rs } 10 + \text{Rs } 10$
- Your father pays Rs 30 to the shopkeeper.
- $\text{Rs } 30 = \text{Rs } 10 + \text{Rs } 10 + \text{Rs } 10$
- Explain to the students that this is called changing money.
- A 50 rupee note can be changed for five 10 rupee notes.
- Demonstrate the concept by showing real notes of Rs 50 and five 10-rupee notes.

### Activity 2:

- Make a shop by displaying different things like toys, stationery, biscuits, etc. put price tags on them as well
- Role play as a shopkeeper and make the students buyers. Give paper notes to the students i.e. Every student must get, 3 notes of 10 rupees, 2 conis of 5 rupees
- Encourage the students to buy what they desire
- Ask any student to buy an object of his/her own choice and get change from the shopkeeper.
- Repeat this activity for other students.

### Activity 3:

- Place a ball with a price tag of Rs 20 and a story book with a price tag of Rs 45 in front of the class.
- Ask the students, how much money is required to buy these two items?
- After getting their response, tell the students that we will add both the prices to find required money.
- Solve the money problem on the board as follows:  
$$\begin{array}{l} \text{Price of a ball} = \text{Rs } 20 \\ \text{Price of a story book} = + \text{Rs } 45 \\ \hline \text{Total price} = \text{Rs } 65 \end{array}$$
- Conclude the topic by saying that we need Rs 65 to buy both items.
- Randomly call a student in front of the class and give him/her Rs 100 (fake note).
- Ask the student if he/she wants to buy a ball, then how much amount will be get back.
- Ask the rest of the class, how we can solve this problem?
- After getting their response, tell them that we will do subtraction to find the answer.
  
- Solve the problem on the board as follows:  
$$\text{Total money} = \text{Rs } 50$$



Price of a ball = -Rs 20

Amount left = Rs 30

- Give more examples of addition and subtraction of money to enhance the concept.

#### Activity 4:

- Ask the students to open page no 94 of Mathematics Textbook Grade 1.
- Ask the students to count coins in first column i.e., Rs 30.
- Then find and match a pair in another column which has sum of Rs 30.
- Ask the students to solve the complete activity.
- Help the students where needed.

#### Conclusion / Sum up / Wrap up:

- Place one note of Rs 100 two notes of Rs 50 and 5 notes of Rs 20 on the table in front of the class.
- Randomly call a student, give him a note of Rs.100.
- Ask the student to say the value of note loudly.
- Ask him/her to find equivalent pair of Rs.100 by using note of Rs. 50 and Rs 20
- Repeat the activity with different coins and notes.

#### Assessment:

Ask students the following questions:

- How many 5-rupee coins can be changed for 20 rupees note?
- How many 50-rupee notes can be changed for 100 rupees note?
- Solve; Rs. 10+ Rs 20+ Rs 50
- Imran has Rs 40 and he wants to buy a pack of biscuits for Rs 25. What amount is left with him?

After getting their response, guide them where needed.

#### Follow up:

Make 2 different equivalent pair of Rs 20 on notebook

## TIME

### Analog Clock

**Duration:** 40 Minutes

#### Students Learning Outcome:

- Read and tell the time in hours from the analog clock for example 2 o' clock

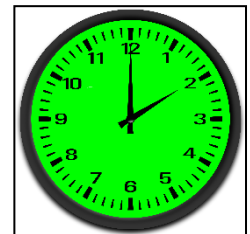


#### Materials:

White / Black Board, markers, model of analog clock, paper plate, paper strip, gum, ruler, pencil, clock prints without clock hands, flashcards of different times, Mathematics Textbook Grade 1

#### Information for Teachers:

- Students understand the concept of time with reference to activities they daily perform, such as time to wake up, time to play, time to eat, time to sleep, etc.
- You can tell what time is in several ways: by the change of day and time associating with the timings of people's different activities.
- The clock shown is analog clock. It has two hands.
- The long hand is called minute hand and it tells minutes.
- The short hand is called hour hand and it tells hours.



#### Teaching Tips:

- Make learning how to tell time is a fun activity by making paper clocks with the students.
- The classic nursery rhyme "Hickory Dickory Dock" is a playful way to help very young students to tell time.

#### Introduction:

Ask students the following questions:

- At what time do you get up early in the morning?
- At what time do you come to school?
- At what time do you go to home?
- How do we know what time is?
- Which device do you use to tell the time?

## Concept Development:

### Activity 1:

- Show the students an analog clock and ask the following questions:



- What is it and why we use this?
- How many numbers can you see on the clock dial?
- How many hands does the clock have?
- Do they have same length?
- Tell them the long hand shows minutes and the short hand shows the hours.
- Tell them the long hand is called minute hand and the short hand is called hour hand.

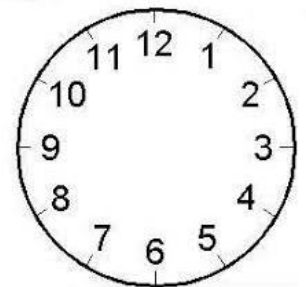
### Activity 2:

- Clarify the concept by using actual model of clock or by drawing a clock on the board.
- Set different times on the clock and encourage the students to read the time.
- Tell them, the time 7 o'clock is written as 'seven 'o clock'.
- Repeat the concept 'if the hour hand on 9 and the minute hand is on 12, then we read the time as 9 o'clock.
- Now show different times on the clock and ask them to read and write the time in their notebooks.

### Activity 3:

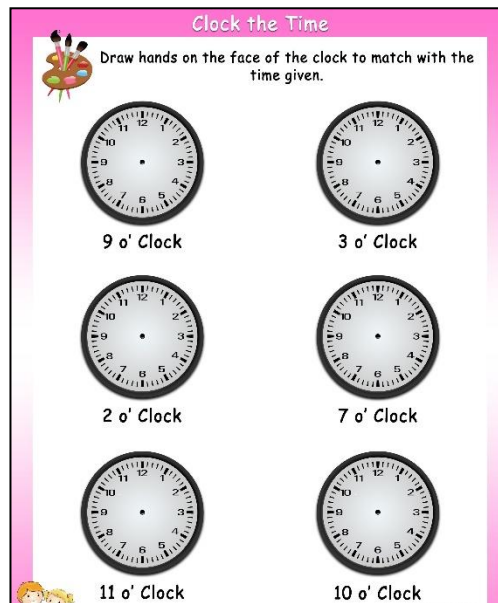
Draw an analog clock on the board.

- Show flashcard of 6 o'clock to the students.
- Randomly call any student to draw the hands of the clock showing time 6 o'clock.
- Repeat the activity until all students have a turn to show different times.



### Activity 4:

- Prepare the following worksheet and distribute it to the students.
- Ask the students to solve the worksheet.



### Conclusion / Sum up / Wrap up:

Conclude the lesson by recalling the following points:

- There are 1 to 12 numbers or dots and 2 hands on the analog clock. The long hand shows minutes and short hand shows hours.
- To show time in hours, the minute hand should point to 12 and the hour hand to the digit that shows time (e.g. to show 5 o'clock minute hand should point towards 12 and hour hand should point towards 5).
- Show different times on the clock and tell time to students.
- Tell the students by showing 11 o'clock, as short hand is at 11 and long hand is at 12 therefore it is 11 o'clock.

### Assessment:

- Provide a piece of paper to students with a circle drawn on it. Ask students to;
  - Write 1 to 12 numbers on its sides.
  - Draw hour hand and minute hand.
- Place a model clock on the table in front of the class.
- Randomly call a student and show him/her the flashcard of 8 o'clock.
- Then ask the student to show the time on the clock by moving hour and minute hands.
- Repeat the activity with all the students by displaying flashcards of different times.










**Follow up:**

- Ask students to draw different types of analog clock in their notebooks available at their home. (e.g., circular, rectangular, etc.)
- Prepare the following worksheet and distribute it to the students.
- Ask the students to solve the worksheet.
- Ask students to solve the questions at page 104 and 105 given in the Mathematics Textbook Grade 1.

**Worksheet**

Clock Hands	Activities	Time
	<p><b>Have breakfast</b></p>	<p><b>7 o'clock</b></p>
		
		
		
		

**Glossary:**

**Analog Clock:** A clock showing time using hands.

**Minute Hand:** The long hand showing time in minutes.

**Hour Hand:** The short hand showing time in hours

## TIME

### Digital Clock

**Duration:** 40 Minutes

#### Students Learning Outcome:

- Read and tell time in hours from the digital clock.



#### Materials:

White / Black board, markers, analog clock, digital clock, pencil, paper, chart, worksheet, Mathematics Textbook Grade 1

### Information for Teachers:

- Digital clock is also used for measuring time.
- Digital clock has no hands.
- Digital clock shows the time in digits.
- The clock shown is digital clock and the time written in digital form as 12:00.



#### Teaching Tips:

- Provide the students with a watch or alarm clock so they can fully understand how to read time from digital clock.
- Discuss the use of digital clocks in everyday life e.g. Cars, microwave ovens, computers and cell phones, etc.

### Introduction:

- Ask students at what time do you get up early in the morning?
- How many types of clocks do you have at your home?
- Show the students a digital clock showing 10 o'clock and ask the time.
- Show different times on digital clock in full hours and ask them to tell the time.



## Concept Development:

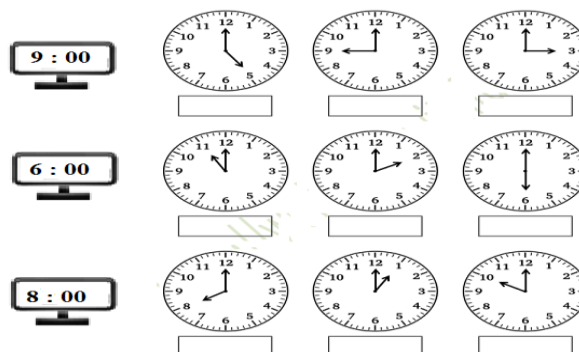
### Activity 1:

- Show the students a digital clock and ask the students have you seen a clock like this.
- Tell them this is called digital clock.
- Now show the student an analog and a digital clock showing the same time.
- Ask the students, what is the difference between an analog clock and a digital clock?
- Ask the students which clock is easier to tell time and why.
- Show the students the analog clock. Explain to the students that an analog clock uses moving hands to show time. The long hand tells the minutes, and the short hand tells the hour. Ask the students what time the analog clock is currently displaying.
- Show the students the digital clock. Explain to the students that a digital clock has no hands and it shows the time in digits.
- Both clocks are showing the time 3 o'clock. The time 3 o'clock on digital clock is written as 03:00.
- Now show different times on digital clock and ask students to show the same time on the analog clock.



### Activity 2:

- Draw the following worksheet on the board or chart and ask the students , to tell which clock showing same time, the teacher mark tick on that box.



### Conclusion / Sum up / Wrap up:





Conclude the lesson by recalling the following points:

- Analog clock and digital clocks are time measuring instruments.
- Analog clock has two hands to show the time.
- Digital clock shows time in digits.

**Assessment:**

- Randomly ask students to draw digital clocks on board and show the following times on the digital clocks. 9 o'clock, 10 o'clock, 11 o'clock.
- Draw the following worksheet on board and ask students copy it on notebooks and match the analog clock with digital clock, showing the same time.

**Worksheet**

	5:00
	9:00
	3:00
	11:00

**Follow up:**

- Ask the students to prepare time table of activities for a whole day and write the time in digital format.
- Ask students to solve the questions given in the Mathematics Textbook Grade 1.

**Glossary:**

**Analog Clock:** A clock showing time using hands.

**Digital Clock:** A clock that shows time in digits.

## TIME

### Days of the Week

**Duration:** 40 Minutes

#### Students Learning Outcome:

- Identify which day comes after/ before a particular day.



#### Materials:

Board, markers, tape, calendar, colored pieces of cards with the days of week written on each card, Flash cards of ordinal numbers from 1<sup>st</sup> to 7<sup>th</sup> written on them, chart, Mathematics Textbook Grade 1

### Information for Teachers:

- Sing the following poem to start the lesson:
- Consult textbook at all steps where and when applicable.

**In a week of seven days,  
Lots of days for us to play!  
Monday, Tuesday and Wednesday,  
Thursday, Friday that's the way,  
Saturday and Sunday too,  
Seven days, there's lots to do.**

#### Teaching Tips:

- Practice the days of the week in order using choral repetition.
- Briefly discuss about calendar and its use in daily life.
- Place a large calendar in front of the students. Use your finger or the pointing stick to identify what day today is on the calendar. Also point to the days that will be tomorrow and yesterday.



## Introduction:

Ask students the following questions:

- How many days in a week?
- Which is your favourite day and why?
- What day is today?
- What day was yesterday?
- What day will be tomorrow?

## Concept Development:

### Activity 1:

- Paste the order of week days in the class.
- Select 14 students from the class.
- Divide into two equal groups.
- Give cards to one group having names of days in a week.
- Give ordinal number cards 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, ..., 7<sup>th</sup> to second group.
- Ask both groups to come in the middle of the class and mingle with each other.
- Ask them to match the card of name of day with the number of the day.
- Ask them to stand beside each other according to their card.

### Activity 2:

#### Play “Wall touch”

- Paste the flashcards of the week days on different places of wall in the classroom.
- Bring everyone in the middle of the class.
- Give challenge to any three students.
- Shout out **Monday** and everyone has to race over to Monday card and touch it.
- Then **Tuesday** and so on (in the correct order) until all days completed.
- Play another round, this time faster!

### Activity 3:

- Divide the class in 7 different groups by giving each group name as name of day of week e.g. Monday
- Ask group members to write a day after and a day before their group name day.
- Select one member from each group and ask him to say loudly his group name and also the days they have written.
- Write the days on the board.
- By the completion of this activity, select one student and ask him to repeat all the days loudly.

### Activity 4:

- Make two groups of the whole class with name as Team A and Team B.
- Call one student from each team on board and ask to complete the statements given below:
  - **Friday comes after.....**
  - **Monday comes after.....**
  - **Sunday comes after.....**
  - **Tuesday comes after.....**
  - **Thursday comes before....**
  - **Saturday comes before.....**

○ **Wednesday comes before.....**

- For one correct response one point will be awarded.
- Winner team will be awarded by giving stars or candies, etc.

**Conclusion / Sum up / Wrap up:**

Conclude the lesson by recalling the following points:

- Saturday comes after Friday.
- Sunday comes before Monday.
- Saturday is the last day of the week.
- Sunday is the rest day from school activities.
- Monday is the first day of the week.

**Assessment:**

Write the following questions on the board and ask the students:

- Which day comes after Friday?
- Which day comes before Saturday?
- Which day comes before Thursday and after Tuesday?
- Which is your favourite day and after which day it comes?
- Ask the students to write the answers in their notebooks.
- Check their work and guide them where needed.

**Follow up:**

- Ask students to complete the following worksheet.
- Ask the students to solve the questions given in the Mathematics Textbook Grade 1.

**Days of the Week**

**Yesterday and Tomorrow**

Yesterday	Today	Tomorrow
	SUNDAY	
	MONDAY	
	TUESDAY	
	WEDNESDAY	
	THURSDAY	
	FRIDAY	
	SATURDAY	



## GEOMETRY

### 2-Dimensional Shapes

**Duration:** 40 Minutes**Students Learning Outcomes:**

- Recognize and identify shapes of similar objects in daily life.
- Identify basic shapes (Rectangle, Square, Circle, Oval, Triangle).
- Match similar basic shapes in daily life.

**Materials:**

Board, markers, tape, cut-outs of basic shapes (square, triangle, rectangle, and circle) in different colors and sizes, poster of house, Mathematics Textbook Grade 1

### Information for Teachers:

- Geometry is a kind of mathematics that studies the size, shapes, and positions of things.
- There are flat shapes and solid shapes in geometry.
- Squares, circles and triangles are some of the simplest shapes.
- A rectangle is a type of quadrilateral, whose opposite sides are equal and parallel.
- A square is a flat geometric figure that has four equal sides and four right angles.
- A triangle is a polygon with three edges and three vertices.
- A circle is a closed curve that has no corners or vertices.
- An oval is a closed geometric shape with no straight lines or vertices.

**Teaching Tips:**

- Brainstorm 2D shapes in real life objects.
- Use concrete objects like straws, paper strips, matchsticks, etc. to make boundaries of different shapes.

### Introduction:

- Tell the students that shapes are the outer form or appearance of something. Ask them find some similar shapes from the classroom.
- Make a circle with hands and tell them that this is a circle.
- Ask students to make the shape using their hands too.
- Ask them to find other objects in the classroom that are circular in shape such as sharpeners, watch dial, hair clips, etc.
- Brainstorm on other things that are shaped like a circle.
- Then make a rectangle and triangle with your hand and tell them the name of the shape.

- Again, ask them to look for more objects of that shape in the classroom.



### Concept Development:

#### Activity 1:

- Show the students cut-out of shapes of square, rectangle, triangle, oval and circle having different sizes and colors.
- Spread the shapes out on the floor and gather everyone around.
- Tell everyone to close their eyes.
- Take away one shape and say “open your eyes”.
- Everyone must guess which shape is missing.

#### Activity 2:

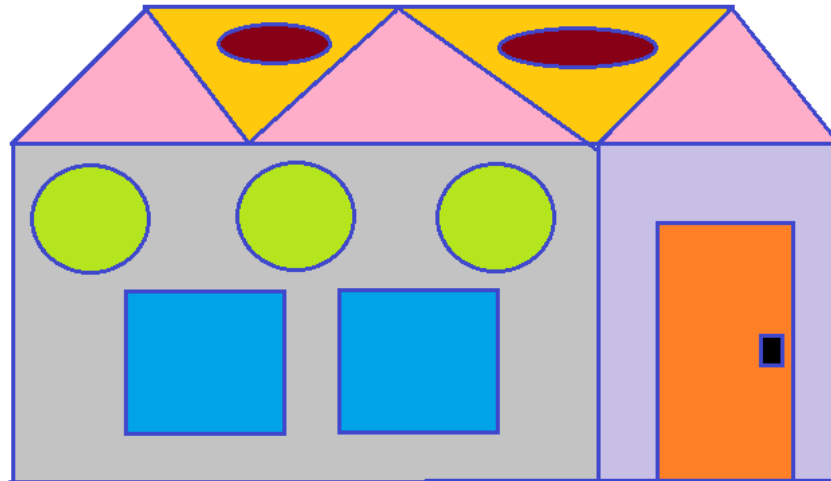
- Ask the students the following questions:
- Can you tell the shape of the door?
- Can you tell the shape of the white board?
- After getting their response, tell them that the door and white board are having similar shapes i.e. rectangular shape.
- Ask the students to find objects of similar shapes in their surroundings.






#### Activity 3:

- Make two teams of the whole class.
- Demonstrate that shapes have their names by showing cut-outs of square, circle, rectangle, triangle, and oval to the students.
- Paste /draw these shapes on the board and label them.
- Select one member from each team and speak loudly any shape.
- Selected member will run to board to find the shape.
- Member who finds first will be given a score.
- After few turns game will be ended and the team having more score will be the winner.
- Winner team will be rewarded by some gift.

#### Activity 4:

- Make some groups of the whole class.
- Take some print outs of the given sketch or draw it on some papers.
- Give each print or paper to a group.



- Ask the students to identify shapes:
- How many circles are? (Three) 
- How many squares are? (Two) 
- How many rectangles are? (Five) 
- How many triangles are? (Five) 
- How many ovals are? (Two) 

### Conclusion / Sum up / Wrap up:

Conclude the lesson by giving them examples of basic shapes from real life.

### Assessment:

Draw square, circle, rectangle, on the board and ask different students to identify.

- Make the shapes using your hands and ask students to guess.
- Teacher is also required to involve the students in solving the problems given in the exercise at the end of unit/chapter.

### Follow up:

- Ask the students to:
- Identify the shapes of different objects as square, circle, rectangle, triangle and oval at their homes.
- Draw a car or house using basic shapes.
- Ask the students to solve the questions given in the Mathematics Textbook Grade 1.

### Glossary:

**2D shape:** A shape that has two dimensions; length and width.

**Rectangle:** A rectangle is a type of quadrilateral, whose opposite sides are equal and parallel.

**Square:** A flat geometric figure that has four equal sides and four right angles.

**Triangle:** A triangle is a polygon with three edges and three vertices.

**Circle:** A circle is a closed curve that has no corners or vertices.

**Oval:** A closed geometric shape with no straight lines or vertices

## GEOMETRY

### 2-Dimensional Shapes

**Duration:** 40 Minutes**Students Learning Outcome:**

- Distinguish basic shapes by considering their attributes (sides).

**Materials:**

Board, markers, tape, cut-outs of basic shapes (square, triangle, rectangle, and circle) in different colors and sizes, Mathematics Textbook Grade 1

### Information for Teachers:

- The term “attribute” in the context of math means the traits or the properties of a shape or an object.
- Shapes have attributes like color, size and the number of sides.

### Teaching Tips:

- Build 2D shape cards with toothpicks and play dough so that students can focus on the number of sides and corners.
- Use manipulatives like chart paper to create 2D shape scenes or real-world things.



### Introduction:

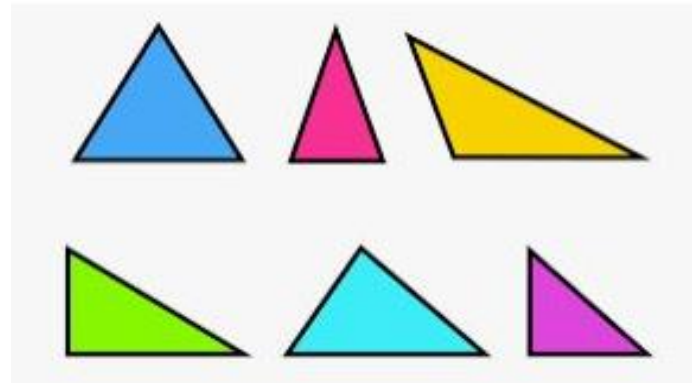
- Display a real-life image in the shape of a rectangle (e.g., a picture frame or door), and have the attributes labeled underneath it (e.g., four sides, opposite sides are parallel, opposite sides are equal in length). Do not include the name of the shape on the board.
- Ask students to turn and talk to a partner to discuss the shape based on the information. Ask them if there is anything missing.
- Explain that today's lesson will be looking at shapes closely to determine the attributes that make them special. Define attributes as the characteristics or qualities.

Provide an example of an attribute of a student in the class. Say, "An attribute of this student is that she has brown hair. Does anyone else have that attribute?"

### Concept Development:

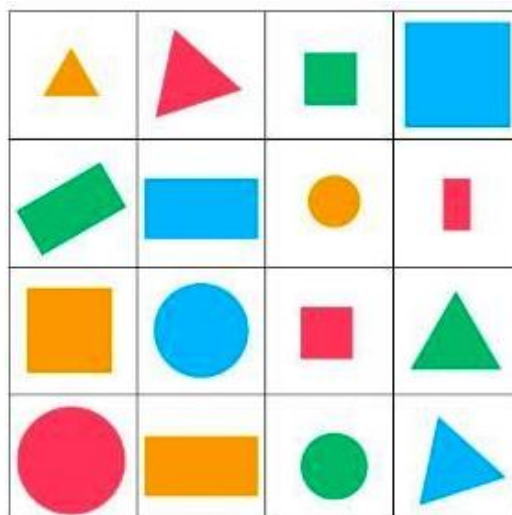
#### Activity 1:

- Draw a shape such as a triangle on the board, and change the non-defining attributes by coloring it different colors, drawing it bigger or smaller, and drawing it upside down or sideways.
- Tell students that although the triangle may look different, we know that it is a triangle because it is a flat, closed shape with three straight sides and three corners.



#### Activity 2:

- Make three groups of the whole class.
- Provide each group a printout of shapes.
- Ask each group to identify the shapes.
- Group 1 will identify triangles.
- Group 2 will identify squares and rectangles.
- Group 3 will identify circles.



### Conclusion / Sum up / Wrap up:

- Square, rectangle, triangle, and circle are basic shapes.
- Each shape has different attributes through which we can recognize the shape.



### Assessment:

- Draw some squares, circles, rectangles, on the board and ask different students to identify.
- Ask the students to solve the problems given in the exercise at the end of unit/chapter.

### Follow up:

- Ask the students to:
- Identify the shapes of different objects as square, circle, rectangle, triangle at your home.
- Ask the students to solve the questions given in the Mathematics Textbook Grade 1.

### Glossary:

**Attribute:** A quality, character or characteristic ascribed to someone or something.

## GEOMETRY

### 2-Dimensional Shapes

**Duration:** 40 Minutes**Students Learning Outcome:**

- Classify 2-D shapes according to the number of their sides and corners.

**Materials:**

Board, markers, tape, charts, scissors, ruler, worksheet 1 and 2, Mathematics Textbook Grade 1

### Information for Teachers:

- 2D shapes are shapes with two dimensions, such as length and width.
- 2D shapes are flat figures and these shapes do not have thickness or height.
- 2D shapes have sides and vertices.
- A vertex is a point where two or more lines meet. The plural of vertex is vertices.

### Teaching Tips:

- Build 2D shape cards with toothpicks and play dough so that students can focus on the number of sides and corners.
- Use manipulatives like chart paper to create 2D shape scenes or real world things.



### Introduction:

- Display the chart having shapes rhyme on it in front of the class.
- Read the rhyme loudly and ask the students to repeat after each sentence.





Let's read the rhyme of 2-D shapes.

We are 2-D shapes.  
We spread a net everywhere  
You can find us everywhere  
We make friends everywhere

Circle circle is my name  
Round and round, never stop again  
Look at the wheel, it looks like me

Oval oval is my name  
Circle and I are not the same  
Look at the egg, it looks like me

Square square is my name  
My 4 sides are the same  
Look at the carrom, it looks like me

Rectangle Rectangle is my name  
My 4 sides are not the same  
Look at the door, it looks like me

Triangle triangle is my name  
Look at me, look at me  
Count my sides one, two, three  
Look at the snack, it looks like me

Ask the students to tell the shape of the following items:

- Wheel has \_\_\_\_\_ shape? circular
- Egg has an \_\_\_\_\_ shape? oval
- Carrom has \_\_\_\_\_ shape? square
- Door has a \_\_\_\_\_ shape? rectangle

## Concept Development:

### Activity 1:

#### Rectangle

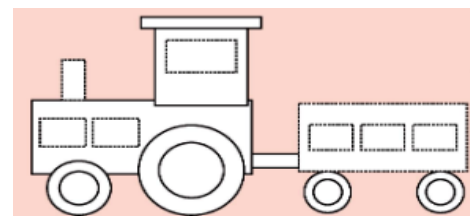
- Tell them rectangle is a 2D shape having four sides.
- Tell them rectangle has four corners(vertices).
- Tell them opposite sides of rectangle are equal.
- Tell them shorter side is called breadth and longer side is length.
- Distribute some rectangular shaped cut-outs among the students.
- Ask the students to observe and find some rectangular shaped objects inside the classroom.



Rectangle



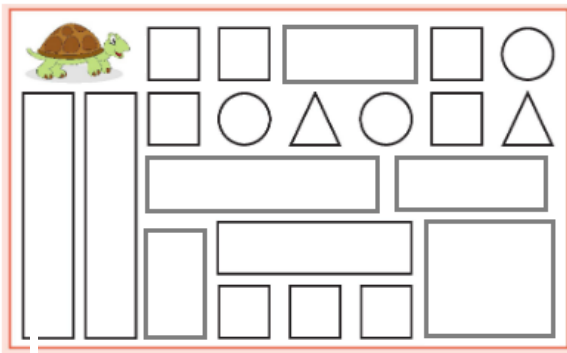
Rectangle



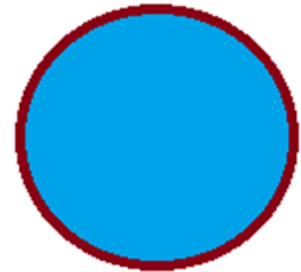
- Ask the students to find rectangles in the following picture and color them green.

### Square

- Tell them square is a 2D shape having four sides.
- Tell them square has four corners.
- Tell them all sides of square are equal.
- Distribute some square shaped cut-outs among the students.
- Ask the students to observe and find some squared shaped objects inside the classroom.
- Ask the students to find squares from the following picture and color them blue.



### Circle



- Tell them circle is a 2D shape having zero sides.
- Tell them square has no corners.
- Distribute some circular shape cut-outs among the students.
- Ask the students to observe and find some circular shaped objects inside or outside the classroom.

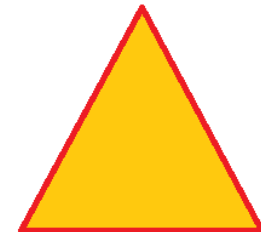
### Oval

- Tell them oval is a 2D shape having zero sides.
- Tell them oval has no corners.
- Distribute some oval shaped cut-outs among the students.
- Ask the students to observe and find some oval shaped objects inside or outside the classroom.



### Triangle

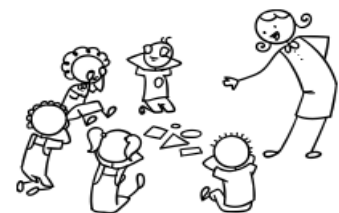
- Tell them triangle is a 2D shape having three sides.
- Tell them triangle has three corners.
- Distribute some triangle shaped cut-outs among the students.
- Ask the students to observe and find some triangle shaped objects inside or outside the classroom.



### Activity 2:

Spread the shapes cut-outs on the floor and gather everyone around.

- Tell everyone to close their eyes.
- Ask them to take away one shape. Then say “Open your eyes”.



- Tell them to speak loudly the name of the shape in their hands one by one.

### Activity 3:

- Paste shapes (rectangle, square, circle, oval, and triangle) at different corners of the classroom.
- Give name of a shape to each student.
- Ask all students to come in the middle of the class and mingle.
- Then give instruction that find the shape of the name given to each student in the classroom and stand in front of the shape.
- After that one student from each group will tell the basic attributes of the shape.

### Conclusion / Sum up / Wrap up:











Conclude the lesson by asking following questions to the students:

- How many sides and corners a triangle has?
- What shape is a clock?
- Tell any shape that has zero corners and zero sides.

### Assessment:

- Distribute the following worksheet to the students to solve.

Match the objects having the same shape.

**Follow up:**

Draw and write the number of corners and sides of each shape.

Name	Shapes	Sides	Corners
Rectangle			
Square			
Circle			
Oval			
Triangle			

Ask the students to solve the following worksheet:

**Glossary:**

**2D shape:** A shape that has two dimensions; length and width.

**Vertex:** A vertex is a point where two or more lines meet.

**Vertices:** The plural of vertex is vertices.

**Rectangle:** A rectangle is a type of quadrilateral, whose opposite sides are equal and parallel.

**Square:** A flat geometric figure that has four equal sides and four right angles.

**Triangle:** A triangle is a polygon with three edges and three vertices.

**Circle:** A circle is a closed curve that has no corners or vertices.

**Oval:** A closed geometric shape with no straight lines or vertices.

## GEOMETRY

### 2-Dimensional Shapes

**Duration:** 40 Minutes**Students Learning Outcomes:**

- Identify the next shape in the patterns with 2 or 3 elements.
- Extend a given pattern of 2 or 3 elements.

**Materials:**

Board, markers, tape, cut-outs of basic shapes (square, triangle, rectangle, and circle) in different colors and sizes, printed cloth/wrapping paper having a pattern, Mathematics Textbook Grade 1, worksheet, chart having different patterns on it, concrete objects like ball, beads, pom-pom, blocks ,etc.

**Information for Teachers:**

- Patterns are things, numbers, shapes, images that repeat in a logical way.
- A pattern is a way, in which something happens, moves, develops or is arranged in a logical way.
- The elements of a pattern repeat in a predictable manner.
- Patterns help children make predictions because they begin to understand what comes next. They also help children learn how to make logical connections and use reasoning skills.

**Teaching Tips:**

- Sing poems and lullabies with words and phrases that repeat.
- Encourage students to observe different patterns in their surroundings e.g. floor patterns, cloth patterns, pattern on trees and animals, etc.
- Use manipulatives like blocks, beads, counters, etc. to make different repeating patterns i.e. block standing, block lying flat, block standing, block lying flat,.....,etc.

## Introduction:

- Show a piece of cloth or a dupatta (scarf) or a wrapping paper with a design printed on it to the class.
- Show the students how designs (such as flowers etc.) are repeated again and again to make a pattern.
- Ask the students, can you name some animals that have patterns on their skin?(snake, zebra, giraffe, tiger, etc.)

## Concept Development:

### Activity 1:

- Ask the students that by using two or three things we can make a pattern. Demonstrate the concept by making a pattern using square and triangle on the board.



- Make another pattern by using square, triangle and circle.

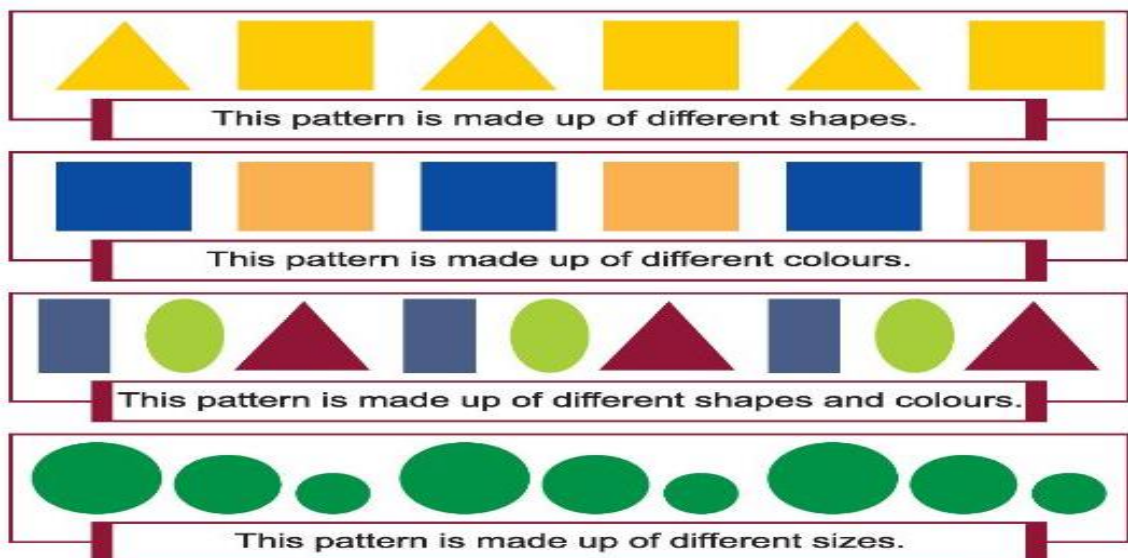


- Ask the students, is there any difference between these two patterns? (yes, in the 1<sup>st</sup> pattern, there are two shapes used i.e. rectangle and triangle but in the 2<sup>nd</sup> pattern, there are three shapes used i.e. rectangle, triangle and circle)

Display the following chart having different patterns on it on the writing board.

Ask the students to observe each pattern.

Let's observe the following patterns.

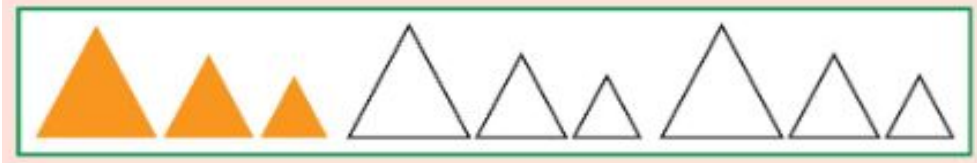


### Activity 2:

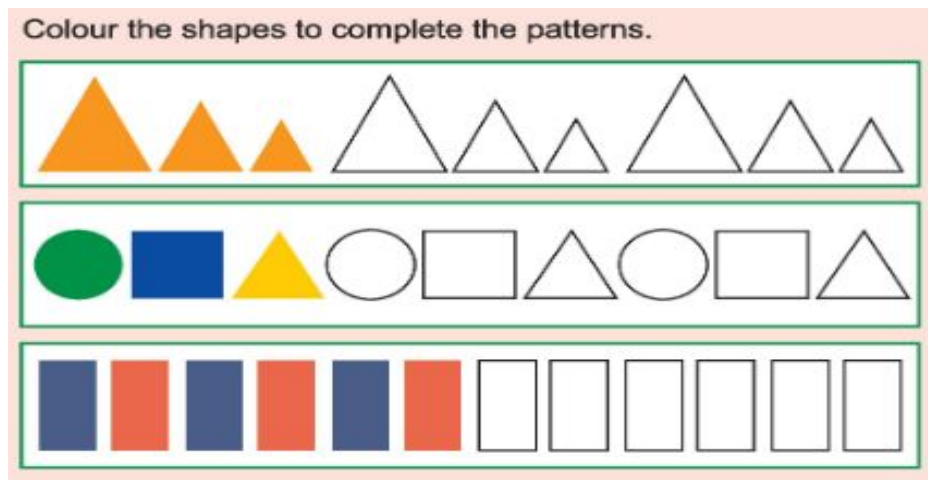
- Make three groups of the whole class.



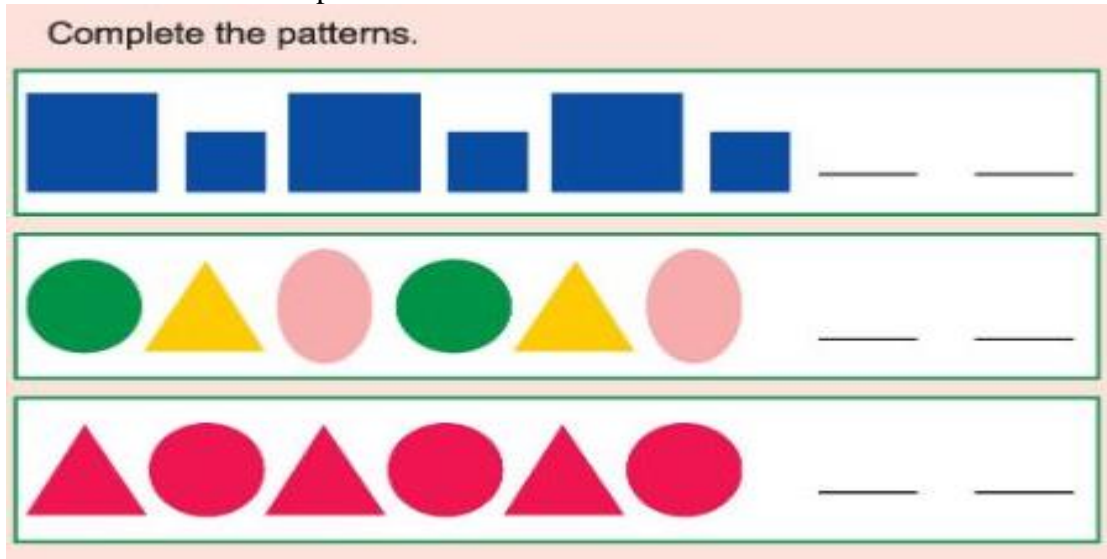
- Demonstrate the concept of extending a pattern using cut-outs of shapes or drawing different shapes on the board.



- Provide a cut-out from the following to each group and ask students to colour the pattern.



- Ask the students to extend the pattern.



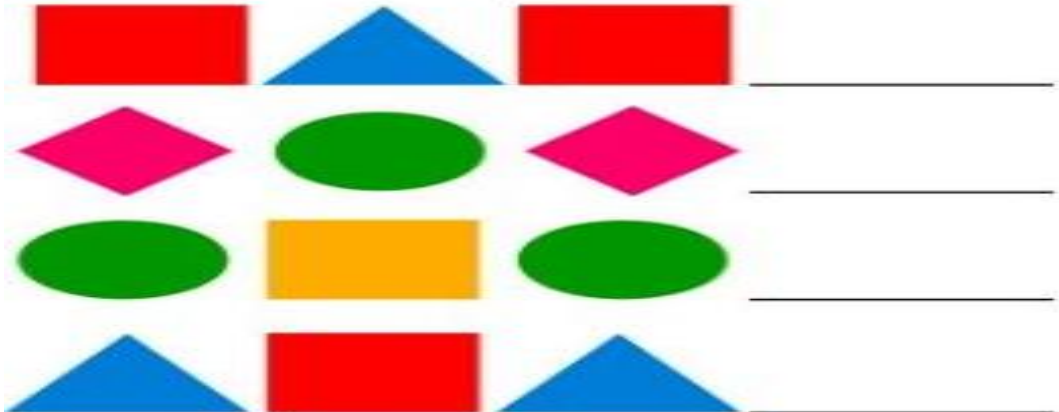
### Activity 3:

- Provide concrete objects like ball, beads, pencils, blocks, pom-pom, etc. to the students and ask them to create different patterns.
- Help them where needed.





- Ask the students to extend the following patterns individually.



### Conclusion / Sum up / Wrap up:

Conclude the lesson by showing chart of different patterns.

### Assessment:

- Draw different patterns on the board and ask the students to extend these patterns in their notebooks.
- Distribute the following worksheet to the students to solve:

Tick (✓) the correct answer to complete each pattern.

		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>



### Follow up:

- Ask the students to make some patterns using pictures of flowers, fruits, vegetables, etc.
- Ask the students to solve the questions given in the Mathematics Textbook Grade 1.

### Glossary:

**Patterns:** Patterns are things, numbers, shapes, images that repeat in a logical way.

**Repeating patterns:** Repeating patterns are patterns where a group of elements repeat themselves as the pattern extends.

## GEOMETRY

### Position

**Duration:** 40 Minutes

#### Students Learning Outcomes

- Identify where an object is placed,
  - Inside Outside,
  - Above or Below,
  - Over or Under,
  - Far or Near,
  - Before or After of a given picture

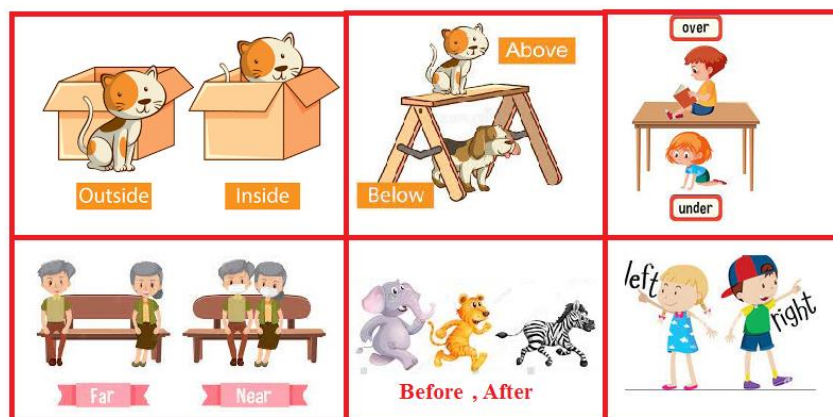


#### Materials:

Board, markers, tape, poster of position of an object, Mathematics Textbook Grade 1.

#### Information for Teachers:

- Positional words are the words that describe the position of people or objects e.g. inside or outside, above or below, over or under, far or near, before or after, right or left, etc.
- A poster of pictures can be used to demonstrate inside or outside, above or below, over or under, far or near, before or after, right or left position of an object.



**Teaching Tips:**

- Ask the students to observe and explore different positions inside/outside the classroom.
- Play games to identify different positions.

Game: “hiding a teddy bear”

Use a teddy bear to practice positional words with the children. Hide the teddy bear somewhere around the room. Ask the children to find him. When they find him they have to say in what position they found him (that is, "over the table "). Let the children take turns hiding him in different spots and in different positions. This activity enables everyone to have a chance to hide him and find him, giving everyone practice in saying what position he is in and in putting him in different positions.

**Introduction:**

Ask the students:

- What day comes before Saturday?
- What day comes after Thursday?
- Which thing is placed on your right side?
- Which thing is placed on your left side?
- Is anyone standing outside the classroom?

**Concept Development:****Activity 1:**

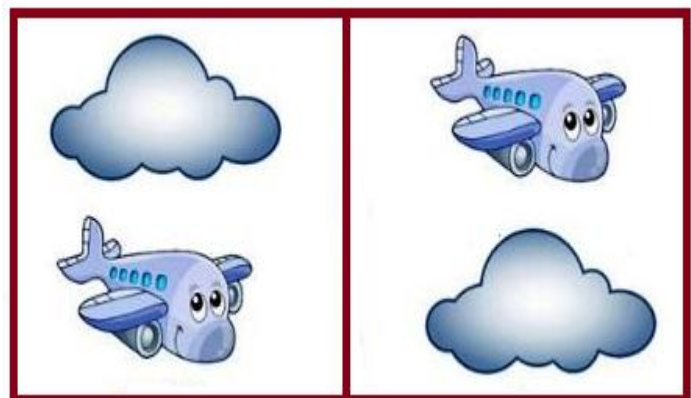
**Demonstrate the concept of inside and outside using the following picture.**

- Ask the students to observe the picture and tell that:
  - What is inside the cage? (Bird)
  - What is outside the cage on a water pot? (Bird)
- Ask the students are you inside or outside the class right now?
- Are your books inside or outside the bag?
- Ask the students to think and share more examples.



**Demonstrate the concept of above and below using the following picture.**

- Ask the students to observe the picture and tell that:
  - In first box what is above the airplane? (Clouds)
  - In second box what is above the clouds? (Airplane)
  - Also, in first plane what is below the clouds? (Airplane)
  - In second box what is below the airplane? (Clouds)



- Ask the students to think and share some more examples.

**Demonstrate the concept of over and under using the following picture.**

- Ask the students to observe the picture and tell that:
  - What is over the table? (Cat)
  - What is under the table? (Dog)
- Ask the students to think and share some more examples.



**Demonstrate the concept of far and near using the following picture.**

- Ask the students to observe the picture and tell that:
  - What is near the tree? (Cat)
  - What is far from the tree? (Boy)
- Stand in front of the board and ask the students, am I near or far from the board?
- Now place yourself at the backside of the class and ask the students now am I near or far from the board?
- Ask the students to think and share some more examples.



**Demonstrate the concept of before and after using the following picture.**

- Ask the students to observe the above picture and tell that:
  - Who is running before the finish line? (rabbit)
  - Who is running after the finish line? (tortoise)
  - Ask the students to think and share some more examples.



**Demonstrate the concept of right and left using the following picture.**

- Ask the students to observe the picture and tell that:
  - What is in the right hand of the cartoon?  
(carrot)
  - What is in the left hand of the cartoon?  
(apple)
  - Ask the students to think and share some more examples.



### Activity 2:

- Display the following poster on the wall or draw similar one on the board.
- Write the following sentences on the board.
- Ask the students to think and complete the sentences.
  1. Fan is \_\_\_\_\_ the desks. (above / below)
  2. Water bottle is \_\_\_\_\_ the bag. (near/far from)
  3. Cat is sitting \_\_\_\_\_ the table. (over / under)



### Conclusion / Sum up / Wrap up:

Discuss real life examples of these concepts with the students.








**Assessment:**

Ask students the following questions:

- Are their books over or under the desks? (over)
- What day comes after Sunday? (Monday)
- What month comes before December? (November)

Distribute the following worksheet to the students to solve.

<p>Tick (✓) the picture where the horse is over the fence.</p> 	<p>Tick (✓) the picture where the kid is far from the ball.</p> 
<p>Encircle the cow which is near the house.</p> 	<p>Encircle the girl who is before the boy.</p> 
<p>Encircle the vehicle which is after the bus.</p> 	

**Follow up:**

Randomly ask students the following questions:

- Which is far from your home; school or market?
- Are the monkeys inside or outside the cage in the zoo?
- Does the airplane fly above/ below the high buildings?

**Glossary:**

**Position:** A place where someone or something is located.



<b>Mathematics-I</b>		
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14.	Parveen Din Muhammad	Subject Specialist, Quaid-e-Azam Academy for Educational Development Punjab, Lahore
15.	Dr. Adila Khanam	Subject Specialist, Quaid-e-Azam Academy for Educational Development Punjab, Lahore
<b>Designing, Composing &amp; Layout</b>		
16.	Asim Jacob	Assistant, Quaid-e-Azam Academy for Educational Development Punjab, Lahore
17.	Aneeq Rehman	Freelance

جملہ حقوق بحق ناشر قائمہ اعظم اکیڈمی فار ایجوکیشنل ڈیولپمنٹ پنجاب محفوظ ہیں اور اس پر حقوق نسخہ کے تمام قوانین نافذ العمل ہیں۔ اس کتاب کو معزز اساتذہ بچوں کی تدریس کے امدادی مواد کے طور پر استعمال کر سکتے ہیں لیکن اس کے مواد کے کسی حصے یا پوری کتاب کو از خود بغیر اجازت چھپوانا ممنوع ہے ایسی صورت میں ادارہ ہذا قانونی چارہ جوئی کا حق رکھتا ہے۔



# Mathematics Teachers' Guide Lesson Plans



Quaid-e-Azam Academy for Educational Development, Punjab  
Wahdat Road, Lahore