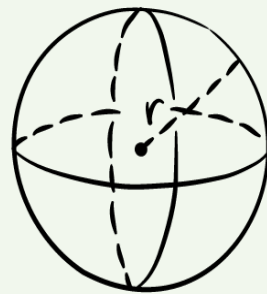
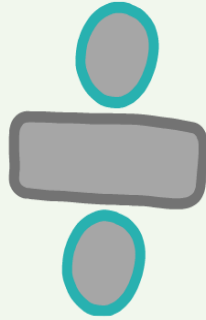
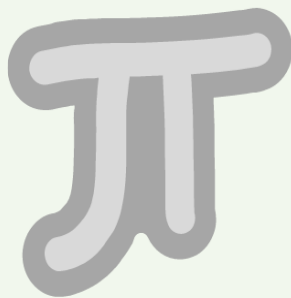


# MathStep 3

(Revised/ SNC Version)



$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$V = \frac{4}{3} \pi r^3$$

## Lesson Planner

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# Unit 1: Numbers to 10,000

**Suggested Number of Lessons:** 6 or 7

## Lesson 1

**Objective(s):** Read and write Roman numbers up to 20

**Teaching Resources:** Flashcards with Roman numbers 1 to 20 written in figures and words, a clock with numbers in Roman form

### **Introduction (5-8 min)**

Use flashcards or show a clock with the numbers written in Roman form to the children. Ask them if they have such a clock before. Ask them what is different about the numbers on the clock. Allow them to share their experiences.

### **Teaching procedure (20 min)**

Draw a table on the board with two columns. In one column write numbers 1 to 20 and in the second column write their Roman forms. Tell children that Roman numbers are written using a few letters of the English alphabet. Read the numbers aloud with the children and help them to identify the numbers. Refer to page 10 for reinforcement.

### **Task (10 min)**

Exercise 1, Question 1	Children should be able to convert and write common numbers for each Roman number.
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### **Homework**

Ask children to complete Exercise 1, Question 2.

## **Lesson 2**

**Objective(s):** Read and write numbers up to 10,000 in numerals and words  
Identify the place value of numbers up to 5-digit

**Teaching Resources:** Countable items such as balls, blocks, etc. Base-10 blocks

### **Introduction (5 min)**

Recall counting numbers from 1 to 999 with the children. Refer to pages 8 for reinforcement and revision activity.

### **Teaching procedure (20 min)**

Discuss the opening page with the class. Ask them if they have seen price tags with 4-digit numbers on them at shops. Allow them to share their experience.

Recap place value up to 3-digits with the children. Tell them that when we add one more to 999, we get 1000 (one thousand). Reiterate the fact that 10 ones make 1 ten, 10 tens make 1 hundred and 10 hundreds make 1 thousand.

Show the place values on the board and write the number 2148 under them:

<b>Thousands (Th)</b>	<b>Hundreds (H)</b>	<b>Tens (T)</b>	<b>Ones (O)</b>
2	1	4	8

Tell them that 2 is in the thousands place and its value is 2000. 1 is in the hundreds place and its value is 100. 4 is in the tens place and its value is 40. Lastly, 8 is in the ones place and its value is 8. Write the number 3076 on the board and ask children to tell you place and value of each digit in the number. Discuss a few more examples. Refer to the textbook pages 12 to 14 for reinforcement.

### **Task (12 min)**

Exercise 1, Question 1	Children should read the numbers in figures and match them to their correct word form. The first one is done for them.
Exercise 1, Question 2	Children should count the blocks and write the correct number in figures and words.
Exercise 1, Question 5 (parts b to d)	Children should read the numbers and fill in each abacus with the correct number of beads. They should then write the numbers in words.

### **Homework**

Ask children to complete Exercise 1, Question 3, 4 and 5 (parts e to f).

### **Lesson 3**

**Objective(s):** Represent a given number on number line up to 2 – digit numbers.  
Identify the value of a number from number line up to 2 – digit numbers.

**Teaching Resources:** Wall chart of a number line

#### **Introduction (5 min)**

Recap counting of numbers from 0 to 100 with the children. Say ‘What number is 10 more than 42?’, ‘What number is 5 less than 70?’, etc.

#### **Teaching procedure (25 min)**

Draw a number line on the board with numbers 0 to 10. Tell the children that this is a number line and we can easily represent numbers on them. These are very useful when doing and understanding mathematical operations such as add and subtract. Ask them to note that in the number line, each number is one more than the previous number.

Similarly, draw three different number lines on the board; one number line from 0 to 20 where the difference between each number is 2, the next line from 0 to 30 with a difference of 3 between each number, and the last line 0 to 40 with a difference of 5 between each number. Ask the children to tell you the difference between each number for each number line.

Draw a number line 0 to 20 with a difference of 4 between each number on the board. Show two numbers missing on the line. Ask children to fill in the gaps for you. Refer to page 21 for reinforcement.

#### **Task (10 min)**

Exercise 2, Question 1, parts a, c and d	Children should observe each number line and identify the difference between the numbers. They should then fill in the missing numbers.
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#### **Homework**

Ask children to complete the remaining parts of Exercise 2, Question 1.

## **Lesson 4**

**Objective(s):** Compare two numbers up to 3 - digits using symbols “<”, “>”, or “=”.  
Write the given set of numbers in ascending and descending order  
(numbers up to 3 - digit).

**Teaching Resources:** Base-10 blocks or counters

### **Introduction (5 min)**

Recap comparing up to 3-digit numbers in terms of hundreds, tens and ones. Write a few 3-digit numbers on the board and ask the children to compare the numbers using the symbols > and <. Write a few numbers on the board and ask the children to arrange them in ascending/descending order. Ask the children to attempt the simple task on page 9 for reinforcement.

### **Teaching procedure (20 min)**

Write the following numbers on the board. Also draw empty boxes below each number:

3160	2540	5013

Ask the children to arrange the numbers in ascending order. Take feedback from them to arrange the numbers. Since these are 4-digit numbers, emphasise that we always start comparing from the thousands, then the hundreds, then the tens and lastly the ones. Ask them to highlight the smallest and the greatest number. Repeat the activity with more numbers. Ask them to arrange numbers in descending order. Once again start comparing from the thousands. Observe that pupils are able to arrange numbers according to the orders asked for. Refer to the textbook pages 23 to 25 for reinforcement.

**Task (10 min)**

Exercise 3, Question 1	Children should observe each set of numbers and identify which is greater or smaller. They should then insert the correct symbol in the box. The first one is done for them.
Exercise 3, Question 2	Children should fill in the blanks accordingly.
Exercise 3, Question 5	Children should arrange each set of numbers in descending order and write in the boxes. The first one is done for them.

**Homework**

Exercise 3, Question 3	Children should observe and complete the tables accordingly.
Exercise 2, Question 4	Children should arrange each set of numbers in ascending order and write in the boxes. The first one is done for them.

## **Lesson 5**

**Objective(s):** Recognise even and odd numbers up to 99 within a given sequence.  
Differentiate between even and odd numbers within a given sequence.

**Teaching Resources:** Countable objects or counters

### **Introduction (5 min)**

Make children sit in pairs. Give each pair a set of objects such as 5 pencils, 4 balls, 6 erasers, 2 books, 9 stones, 8 chalks, etc. Now ask them to group the items in pairs. Which sets made complete pairs? Which sets had one item left? Take feedback from the children.

### **Teaching procedure (20 min)**

Tell the children that the above activity was done to understand the concept of even and odd numbers.

Draw six stars on the board. Group them in pairs. Ask 'How many pairs are made? Yes, there are 3 pairs. Was any star was left? No stars were left. So, 6 is an even number'

Now draw seven stars and once again group them in pairs. Ask the class what has happened. There is one star left. Tell the class that this means 7 is an odd number

Reiterate that when a number can easily be broken down into complete pairs, it is an even number. Incomplete pairing means the number is odd. Also tell them that all numbers that have 0, 2, 4, 6 or 8 in the ones place are always even. Numbers that have 1, 3, 5, 7 or 9 in the ones place are always odd.

Refer to pages 28-29 for reinforcement.

**Task (10 min)**

Exercise 4, Question 1	Children should identify the even numbers and circle them.
Exercise 4, Question 2	Children should identify the odd numbers and circle them.
Exercise 4, Question 5	Children should check if 38 is an even or odd number. Ask them to see the value of the digit in the ones place.

**Homework**

Exercise 4, Question 3	Children should see if the numbers make complete pairs or not and then say whether they are even or odd.
Exercise 4, Question 4	Children should check if 27 is an odd number by looking at the value of the digit in the ones place.
Exercise 4, Question 6	Children should list all the even numbers between 30 and 40.



## **Lesson 6**

**Objective(s):** Round off a whole number to the nearest 10

**Teaching Resources:** Wall chart of a number line

### **Introduction (5 min)**

Ask children if they have heard of terms like 'approximately', 'almost equal to', etc. before. Have they ever heard people talking about 'estimates'?

### **Teaching procedure (20 min)**

Explain the concept of rounding off to children with references to rounding off total cost of items.

Write the number 24 on the board and draw a number line labelled 20 to 30. Mark the number 24 on the number line. Highlight that the upper ten is 30 and a lower ten is 20. Tell the children when rounding off to the nearest 10, we always look at the digit in the ones place.

- If the digit is 0, 1, 2, 3 or 4, we round off the number to the lower ten.
- If the digit is 5, 6, 7, 8 or 9, we round off the number to the upper ten.

Ask the children what will be the value of 24 when rounded off to the nearest 10. The children should say 20.

Repeat the activity with the number 28 and then 25. Tell the children that if a number is at the midpoint between the upper and lower tens, it is rounded off to the upper ten.

Refer to page 31-32 for reinforcement.

### **Task (10 min)**

Ask children to complete Exercise 5, Questions 1 and 2.

## **Lesson 7**

**Objective(s):** Round off a whole number to the nearest 100

**Teaching Resources:** Wall chart of a number line

### **Introduction (5 min)**

Recap rounding off to the nearest 10.

### **Teaching procedure (20 min)**

Write the number 130 on the board and draw a number line labelled 100 to 200. Mark the number 130 on the number line. Here the upper hundred is 200 and the lower hundred is 100. Tell the children when rounding off to the nearest 100, we always look at the digit in the tens place.

- If the digit is 0, 1, 2, 3 or 4, we round off the number to the lower hundred.
- If the digit is 5, 6, 7, 8 or 9, we round off the number to the upper hundred.

Ask the children what will be the value of 130 when rounded off to the nearest 100. The children should say 100.

Repeat the activity with the number 180 and then 150. Tell the children that if a number is at the midpoint between the upper and lower hundreds, it is rounded off to the upper hundred.

Refer to page 33-34 for reinforcement.

### **Task (10 min)**

Ask children to complete Exercise 5, Questions 3 and 4.

## Unit 2: Addition within 10 000

**Suggested Number of Lessons:** 5 to 6

### Lesson 1

**Objective(s):** Recall addition within 1000

**Teaching Resources:** Countable items such as balls, blocks, etc. Base-10 blocks.

#### **Introduction (5 min)**

Recall addition within 1000 with the children.

#### **Teaching procedure (20 min)**

Write the sentence  $23 + 16$  on the board and ask the children to add the vertically and tell you the total. Write another sentence  $236 + 247$  on the board. Ask the children to add them vertically. Ask the children if the sum involves carrying or not. Give a few more examples on the board. Ensure that the children are able to add easily.

#### **Task (10 min)**

Recap Questions 1 to 3	Children should be able to attempt the questions easily.
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#### **Homework**

Ask children to complete Question 4 of the Recap section.

## Lesson 2

**Objective(s):** Adding numbers up to 4-digit without carrying

**Teaching Resources:** Base-10 blocks or counters

### **Introduction (8 min)**

Recap place values (ones, tens, hundreds and thousands) and addition of 3 digit numbers without carry over with the children.

### **Teaching procedure (20 min)**

Tell the class that now that they know how to add up to 3-digit numbers, they will learn how to add 4-digit numbers. Recall the place values up to thousands with the children then write the following sum on the board:

Th	H	T	O		Th	H	T	O		
	3	3	1	5	➔	3	3	1	5	
+		2	3	3		+		2	3	3
						3 5 4 8				

Begin adding from the ones, the tens, the hundreds and then the thousands. Repeat the activity by adding 1056 and 1213. Refer to the textbook for reinforcement.

### **Task (10 min)**

Exercise 1, Question 1 parts a to d	Children should observe each set of numbers and add them. Remind them to start adding from the ones. The first one is done for them.
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### **Homework**

Exercise 1, Question 1 parts e to h	Children should observe each set of numbers and add them. Remind them to start adding from the ones.
---	--

### Lesson 3

**Objective(s):** Add 2-digit numbers mentally

**Teaching Resources:** Base-10 blocks or counters

#### **Introduction (5 min)**

Recap adding numbers within 50 with the children.

#### **Teaching procedure (20 min)**

Write the following on the board and solve it in a stepwise manner:

$$\begin{array}{r} 35 \\ \swarrow \searrow \\ 30 \quad 5 \end{array} + \begin{array}{r} 24 \\ \swarrow \searrow \\ 20 \quad 4 \end{array} = ?$$

$$5 + 4 = 9$$

$$30 + 20 = 50$$

$$50 + 9 = 59$$

Ask the children to split each number into tens and ones and then add them individually. They can then put the number together to tell the total. Repeat the activity with another example. Refer to the textbook for reinforcement.

#### **Task (10 min)**

Exercise 2,  
Question 1

Children should be able to add the given numbers mentally. Remind them to split the numbers into tens and ones mentally and then add them.

## Lesson 4

**Objective(s):** Adding 4-digit numbers with carry

**Teaching Resources:** Base-10 blocks

### Introduction (5 min)

Recap addition of 3-digit numbers with carry with the children.

### Teaching procedure (20 min)

Tell the children that they have already learnt about adding up to 3-digit numbers with carry and now they will learn how to add 4-digit numbers with carry. Write the following sum on the board:

Th	H	T	O
2	3	5	8
+	3	1	9
			5
			3

Th	H	T	O
2	3	5	8
+	3	1	9
			5
			3

Th	H	T	O
2	3	5	8
+	3	1	9
			5
			3

Th	H	T	O
2	3	5	8
+	3	1	9
			5
			3

Solve the above sum step wise. Add the ones: 8 ones + 5 ones = 13 ones. Regroup as 1 ten 3 ones. Carry over 1 ten to the tens column. Add the tens: 1 ten + 5 tens + 9 tens = 15 tens. Remind the children that 10 tens make 1 hundred. Regroup as 1 hundred and 5 tens. Carry over 1 hundred to the hundreds column. Add the hundreds: 1 hundred + 3 hundreds + 1 hundreds = 5 hundreds. Now add the thousands: 2 thousands + 3 thousands = 5 thousands. So,  $2358 + 3195 = 5553$

Repeat the activity with another example. Refer to the textbook for reinforcement.

### Task (10 min)

Exercise 3, Question 1 parts a to f	Children should observe each set of numbers and add them. Remind them to start adding from the ones and remember to add the carry. The first one is done for them.
---	--

### Homework

Exercise 3, Question 1 parts g to p	Children should observe each set of numbers and add them. Remind them to start adding from the ones and remember to add the carry.
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## **Lesson 5**

**Objective(s):** Solve real life number stories up to 4-digit with and without carrying involving addition

**Teaching Resources:** Base-10 blocks

### **Introduction (5 min)**

Recap addition of 3-digit numbers (with and without carry) with the children.

### **Teaching procedure (30 min)**

Write the following story on the board: Huma has 1260 beads. She buys 268 beads more. How many does she have altogether?

Ask the children to solve the word problem with you on the board. Observe whether children have grasped the idea of carry over constructively.

Write another example,  $2305 + 1623$  on the board and solve it with the children.

Refer to the examples in the textbook and solve them with the children in class.

### **Homework**

Exercise 4, Questions 1 to 3	Children should read and understand each word problem. Remind them to start adding from the ones and remember to add the carry.
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## Unit 3: Subtraction within 10 000

**Suggested Number of Lessons:** 7 to 8

### Lesson 1

**Objective(s):** Revise subtracting within 1000

**Teaching Resources:** Countable items such as balls, blocks, etc. Base-10 blocks.

#### **Introduction (5 min)**

Recall subtraction within 1000 with the children.

#### **Teaching procedure (22 min)**

Write the sentence  $359 - 25$  on the board and ask the children to subtract and tell you the difference. Write another sentence  $563 - 145$  on the board. Ask the children to subtract them vertically. Give a few more examples on the board. Ensure that the children are able to subtract easily.

#### **Task (10 min)**

Recap Questions 1 to 2	Children should be able to attempt the questions easily.
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#### **Homework**

Ask children to complete Question 3 of the Recap section.



## Lesson 2

**Objective(s):** Subtracting 4-digit numbers without borrowing


**Teaching Resources:** Base-10 blocks or counters

### **Introduction (7 min)**

Recap place values (ones, tens, hundreds and thousands) and subtraction of 3-digit numbers without borrowing with the children.

### **Teaching procedure (20 min)**

Tell the class that now that they know how to subtract 3-digit numbers, they will learn how to subtract 4-digit numbers. Recall the place values up to thousands with the children then write the following sum on the board:

Th	H	T	O		Th	H	T	O		
	5	7	8	6		5	7	8	6	
-		2	5	5		-		2	5	5
<hr/>						<hr/>				
<hr/>						<hr/>				
						5	5	3	1	

Begin subtracting from the ones, then the tens, then the hundreds and then the thousands. Repeat the activity by subtracting 3124 from 5697. Refer to the textbook for reinforcement.

### **Task (10 min)**

Exercise 1, Question 1 parts a to d	Children should observe each set of numbers and subtract them. Remind them to start subtracting from the ones. The first one is done for them.
---	--

### **Homework**

Exercise 1, Question 1 parts e to h	Children should observe each set of numbers and subtract them. Remind them to start subtracting from the ones.
---	--

### Lesson 3

**Objective(s):** Subtract 2-digit numbers mentally

**Teaching Resources:** Base-10 blocks or counters

#### **Introduction (5 min)**

Recap subtracting numbers within 50 with the children.

#### **Teaching procedure (20 min)**

Write the following on the board and solve it in a stepwise manner:

$$\begin{array}{r} 49 \\ \swarrow \searrow \\ 40 \quad 9 \end{array} - \begin{array}{r} 32 \\ \swarrow \searrow \\ 30 \quad 1 \end{array} = ?$$

$$40 - 30 = 10$$

$$9 - 1 = 8$$

$$10 + 8 = 18$$

Ask the children to split each number into tens and ones and then subtract them individually. They can then put the number together to tell the answer. Repeat the activity with another example. Refer to the textbook for reinforcement.

#### **Task (10 min)**

Exercise 2,  
Question 1

Children should be able to subtract the given numbers mentally. Remind them to split the numbers into tens and ones mentally and then subtract them.

## Lesson 4

**Objective(s):** Subtracting 4-digit numbers with borrowing

**Teaching Resources:** Base-10 blocks

### Introduction (5 min)

Recap subtraction of 3-digit numbers with borrowing with the children.

### Teaching procedure (20 min)

Tell the children that they have already learnt about subtracting 3-digit numbers with borrowing and now they will learn how to subtract 4-digit numbers with borrowing. Write the following sum on the board:

Th	H	T	O		Th	H	T	O		Th	H	T	O		Th	H	T	O		
7	<sup>1</sup> →	2	9		<del>6</del>	<sup>12</sup> →	12	9		<del>6</del>	<sup>1</sup> →	12	9		<del>6</del>	<del>13</del>	<del>4</del>	12	9	
-		6	5	7	-		6	5	7	-		6	5	7	-		6	5	7	
<hr/>					<hr/>						<hr/>					<hr/>				
			2				7	2				7	7	5			6	7	7	5

Solve the above sum step wise. Subtract the ones: 9 ones – 7 ones = 2 ones. Subtract the tens. 2 tens is smaller than 5 tens, so regroup 1 hundred as 10 tens. We have 10 tens and 2 tens which is 12 tens. 12 tens – 5 tens = 7 tens. After regrouping we have 3 hundreds left. Subtract the hundreds. 3 hundreds is smaller than 6 hundreds, so regroup 1 thousand as 10 hundreds. We have 10 hundreds and 3 hundreds which is 13 hundreds. 13 hundreds – 6 hundreds = 7 hundreds. After regrouping we have 6 thousands left. Subtract the thousands: 6 thousands – 0 thousands = 6 thousands. So,  $7429 - 657 = 6775$ .

Repeat the activity with  $6251 - 2588$ . Refer to the textbook for reinforcement.

### Task (10 min)

Exercise 3, Question 1 parts a to g	Children should observe each set of numbers and subtract them. Remind them to start subtracting from the ones. The first one is done for them.
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### Homework

Exercise 3, Question 1 parts h to p	Children should observe each set of numbers and subtract them. Remind them to start subtracting from the ones. The first one is done for them.
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## **Lesson 5**

**Objective(s):** Solve real-life number stories involving subtraction of 4-digit numbers without and with borrowing

**Teaching Resources:** Base-10 blocks

### **Introduction (10 min)**

Recap subtraction of 4-digit numbers (with and without borrowing) with the children.

### **Teaching procedure (25 min)**

Write the following story on the board: A shop has 3450 notebooks. It sells 1536 notebooks. How many notebooks are left in the shop?

Ask the children to solve the word problem with you on the board. Make sure that the children understand the word problem and tell you what is required. Observe whether children have grasped the idea of borrowing constructively.

Write another example,  $5342 - 2215$  on the board and solve it with the children. Ask children to be careful when they are borrowing and to make changes accordingly.

Refer to the examples in the textbook and solve them with the children in class.

### **Homework**

Exercise 4, Questions 1 to 3	Children should read and understand each word problem. They should then solve them. Remind children to start subtracting from the ones and be careful when they are borrowing.
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# Unit 4: Multiplication

**Suggested Number of Lessons:** 9 to 10

## Lesson 1

**Objective(s):** Recap multiplication as repeated addition and revise tables of 2, 3, 4, 5 and 10

**Teaching Resources:** Countable items such as balls, blocks, etc. Base-10 blocks.

### **Introduction (5 min)**

Recap tables of 2, 3, 4, 5 and 10 with the children.

### **Teaching procedure (20 min)**

Write a few multiplication statements on the board and ask children to complete them with you. For example,  $4 \times \underline{\quad} = 20$ ,  $3 \times 8 = \underline{\quad}$ ,  $2 \times 7 = \underline{\quad}$ ,  $5 \times \underline{\quad} = 30$ , etc.

You can call children up to the board and ask them to solve it. You can also ask them to demonstrate the multiplication sentences on the board using stars, circles, etc.

### **Task (10 min)**

Recap Questions 1 to 4	Children should be able attempt the questions easily.
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### **Homework**

Ask children to complete Recap, Questions 5 and 6.

## Lesson 2

**Objective(s):** Develop multiplication table of 6  
Apply mental mathematical strategies to multiply 1 – digit numbers to 1 - digit numbers.

**Teaching Resources:** Base-10 blocks or counters

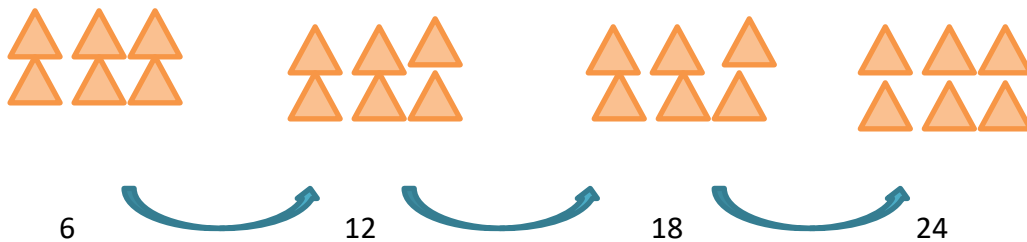
### **Introduction (5 min)**

Recap the concept of multiplication as repeated addition with the children.

### **Teaching procedure (20 min)**

The children are already familiar with the tables of 2, 3, 4, 5 and 10. Learning new ones should not be very difficult. However, pay close attention to slow learners.

Draw the following on the board.



Introduce the concept of skip counting in sixes to teach the table of 6. Tell them that in the table of 6, each number is 6 more than the previous number.

Refer to the textbook for reinforcement. Refer to page 81 and ask the children to memorise the table of 6.

### **Task (10 min)**

Exercise 1, Question 1 and 2	Children should be able to apply the 6's table and solve the questions.
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### **Homework**

Ask children to complete Exercise 1, Question 3 and 4.

### Lesson 3

**Objective(s):** Develop multiplication table of 7

Apply mental mathematical strategies to multiply 1 – digit numbers to 1 - digit numbers.

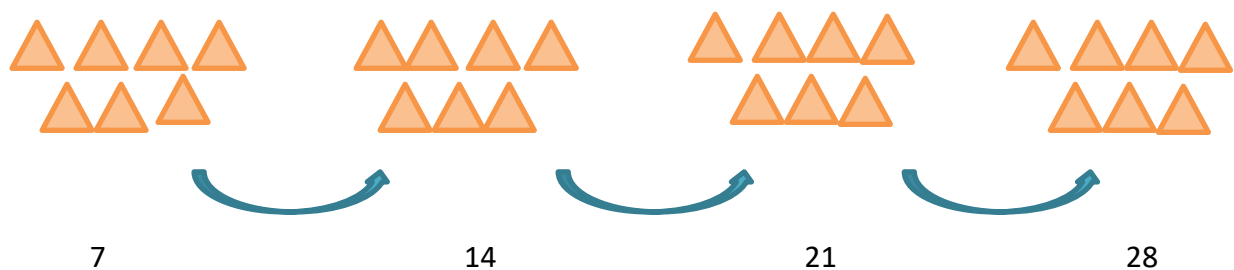
**Teaching Resources:** Base-10 blocks or counters

#### **Introduction (5 min)**

Recap grouping of numbers and repeated addition with the children.

#### **Teaching procedure (20 min)**

Draw the following on the board.



Introduce the concept of skip counting in sevens to teach the table of 7. Tell them that in the table of 7, each number is 7 more than the previous number.

Refer to the textbook for reinforcement. Refer to page 86 and ask the children to memorise the table of 7.

#### **Task (10 min)**

Exercise 2, Question 1 and 2	Children should be able to apply the 7's table and solve the questions.
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#### **Homework**

Ask children to complete Exercise 2, Question 3 and 4.







## **Lesson 6**

**Objective(s):** Multiplying by 0 and 1

**Teaching Resources:** Base-10 blocks or counters, 5-6 bags or transparent containers, balls, blocks, etc.

### **Introduction (5 min)**

Recap tables from 2 to 10 with the children.

### **Teaching procedure (30 min)**

Place a bowl on the table and put 3 balls in it. Ask the children: how many balls are there? The children should say 3. Similarly put 11 balls in a transparent container and ask how many balls are there in the container. The children should say 11.

Now draw a large circle on the board and draw 6 stars in the circle. Ask the children how many stars are there in the circle. They should say 6. In all three cases, emphasise to the children that we had increased the number of items but there was only one container/group – this shows that no matter how large the number is, if we multiply it by 1, the number remains the same.

Use a similar strategy to explain the concept of multiplication with zero. Place an empty container on the table and ask the children how many blocks are in it. Children should say zero. Now place four three identical empty bowls on the table and ask the children how many blocks are there in each bowl. The children should reply zero. Tell the children that we can conclude that no matter how large a number is, if it is multiplied by 0, the answer will be 0.

Refer to the textbook for reinforcement.

## Lesson 7

**Objective(s):** Multiply 2-digit number by 1 - digit number without carry over

**Teaching Resources:** Base-10 blocks or counters

### **Introduction (5 min)**

Recap the tables of 2 to 10 with the children.

### **Teaching procedure (30 min)**

Write the following on the board:

Diagram illustrating the multiplication problem  $12 \times 2$  on a board. The multiplicand (12) is shown under the tens (T) and ones (O) columns. The multiplier (2) is shown below the ones column. The product (24) is shown below the tens and ones columns. Labels identify the multiplicand, multiplier, and product.

Help children identify all the parts. Give a few more examples and solve them on the board with them.

Now write the following:

Diagram illustrating a blank multiplication problem on a board. The multiplicand (12) is shown under the tens (T) and ones (O) columns. The multiplier (2) is shown below the ones column. There are two blank lines below the tens and ones columns for the product.

Solve the above sum with the children stepwise. First multiply the ones and then the tens. Discuss a few more examples. Refer to the textbook pages 100-101 for reinforcement.

### **Homework**

Ask children to revise the tables. Give the following sums for reinforcement:  $13 \times 3$ ,  $5 \times 10$ ,  $4 \times 7$ ,  $2 \times 14$ ,  $6 \times 11$ .

## **Lesson 8**

**Objective(s):** Multiply 2-digit number by 1 - digit number with carry over

**Teaching Resources:** Base-10 blocks or counters

### **Introduction (5 min)**

Recap the tables of 2 to 10 with the children.

### **Teaching procedure (20 min)**

Recap vertical multiplication with the children using simple numbers.

Now write the following:

$$\begin{array}{r} \text{T O} \\ 23 \\ \times 4 \\ \hline \\ \hline \end{array}$$

Solve the above sum with the children stepwise. First multiply the ones and then the tens. Tell the children that this multiplication involves carrying so they have to be careful to add the carry. Discuss a few more examples. Refer to the textbook pages 102-103 for reinforcement.

### **Task (10 min)**

Exercise 5, Question 1 parts (a) to (f)	Children should be able to apply the 9's table and solve the questions.
--	---

### **Homework**

Ask children to complete Exercise 5, Question 1 parts (g) to (l).

## **Lesson 9**

**Objective(s):** Solve real-life number stories involving multiplication of 2 - digit numbers by 1 – digit numbers

**Teaching Resources:** Base-10 blocks

### **Introduction (5 min)**

Recap the tables of 2 to 10 with the children.

### **Teaching procedure (30 min)**

Write the following story on the board: Amna buys 7 packets of cupcakes. Each packet has 4 cupcakes. How many cupcakes are there altogether?

Ask the children to solve the word problem with you on the board. Observe whether children have grasped the idea of multiplication constructively.

Write another example on the board: There are 12 plates. Each plate has 4 cherries. How many cherries are there altogether? Solve it with the children.

Refer to the examples in the textbook and solve them with the children in class.

### **Homework**

Exercise 6, Questions 1 to 4	Children should read and understand each word problem. Ask children to memorise tables properly and apply them in each question. The first one is done for them.
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# Unit 5: Division

**Suggested Number of Lessons:** 6 to 7

## Lesson 1

**Objective(s):** Revise division by 2, 3, 4, 5 and 10

**Teaching Resources:** Countable items such as balls, blocks, etc. Base-10 blocks. Bowls, baskets or containers

### **Introduction (7 min)**

Discuss the opening page. Ask the children if they have shared sweets or chocolates with their friends. Ask them if they shared them equally or not.

### **Teaching procedure (20 min)**

Revise the tables of 2, 3, 4, 5 and 10 with the children.

Write the following statements on the board and solve them with the children:  $12 \div 3 = \underline{\quad}$ ,  $9 \div 3 = \underline{\quad}$ ,  $30 \div 5 = \underline{\quad}$ ,  $36 \div 4 = \underline{\quad}$ ,  $80 \div 10 = \underline{\quad}$ .

You can call children up to the board and ask them to solve it. You can also ask them to demonstrate the division sentences on the board using stars, circles, etc.

### **Task (10 min)**

Recap Questions 1 to 4	Children should be able attempt the questions easily.
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### **Homework**

Ask children to complete Recap, Questions 5 and 6.

## **Lessons 2 and 3**

**Objective(s):** Divide numbers within the multiplication table of 6 and 7 with remainder zero

Apply mental mathematical strategies to divide 1-digit number by a 1 - digit number

**Teaching Resources:** Base-10 blocks or counters

### **Introduction (5 min)**

Recap the tables of 6 and 7.

### **Teaching procedure (20 min)**

Draw the following on the board.



Ask the children to divide the triangles in 6 groups. Now ask them how many triangles are there in each group. The children should be able to divide and tell you the correct answer. Make sure that they are able to make equal groups. Repeat with another example.

Similarly draw 21 stars on the board and ask the children to group them in 7 groups. Ask how many stars are in each group. Repeat with another example.

Refer to the textbook for reinforcement.

### **Task (10 min)**

Exercise 1, Questions 1, 3 and 5	Children should be able to apply the 6 and 7's table and solve the questions.
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### **Homework**

Ask children to complete Exercise 1, Questions 2, 4 and 6.

## **Lesson 4**

**Objective(s):** Divide numbers within the multiplication table of 8 and 9 with remainder zero

Apply mental mathematical strategies to divide 1-digit number by a 1 - digit number

**Teaching Resources:** Base-10 blocks or counters

### **Introduction (5 min)**

Recap the tables of 8 and 9.

### **Teaching procedure (20 min)**

Draw the following on the board.



Ask the children to divide the triangles in 8 groups. Now ask them how many triangles are there in each group. The children should be able to divide and tell you the correct answer. Make sure that they are able to make equal groups. Repeat with another example.

Similarly draw 45 circles on the board and ask the children to group them in 9 groups. Ask how many circles are in each group. Repeat with another example.

Refer to the textbook for reinforcement.

### **Task (10 min)**

Exercise 2, Questions 1 and 2	Children should be able to apply the 8 and 9's table and solve the questions.
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### **Homework**

Ask children to complete Exercise 2, Questions 3 and 4.



## Lesson 5

**Objective(s):** Divide a 2-digit number by 1 - digit number with 0 remainder

**Teaching Resources:** Base-10 blocks or counters

### Introduction (5 min)

Recap the tables of 2 to 10 with the children.

### Teaching procedure (30 min)

Write on board:  $8 \div 2$

Ask children to tell you the answer. Tell them that actually they are dividing 8 ones by 2.

Now write on board:  $80 \div 4$

Ask the children to tell you the answer. Tell them it is the same as dividing 8 tens by 4.

Discuss a few more examples. Refer to the textbook for reinforcement.

Now Write the following on the board:

$$\begin{array}{r} 24 \\ 2 \overline{) 48} \\ \underline{4} \phantom{0} \\ 08 \\ \underline{8} \\ 0 \end{array}$$

Labels: divisor (2), dividend (48), quotient (24), remainder (0)

Help children identify all the parts. Give a few more examples and solve them on the board with them.

Now write the following on the board and solve it:  $51 \div 3$ . Use the vertical method and solve the above sum with the children stepwise. First divide the tens and then the ones. Discuss a few more examples. Refer to the textbook for reinforcement.

### Task (10 min)

Exercise 3, Question 1 parts (a) to (f)	Children should be able to solve the division sums using the vertical method.
---	---

### Homework

Ask children to complete Exercise 3, Question 1 parts (g) to (l).

## **Lesson 6**

**Objective(s):** Solve real-life number stories involving division of 2 – digit number by a 1 - digit number

**Teaching Resources:** Base-10 blocks

### **Introduction (5 min)**

Recap the tables of 2 to 10 with the children.

### **Teaching procedure (30 min)**

Write the following story on the board: Sara has 32 flowers. She places them equally in 8 vases. How many flowers are there in each vase?

Ask the children to solve the word problem with you on the board. Observe whether children have grasped the idea of division constructively.

Write another example on the board: There are 56 apples. Ahmed packs 4 oranges in one bag. How many bags does he pack? Solve it with the children.

Refer to the examples in the textbook and solve them with the children in class.

### **Homework**

Exercise 4, Questions 1 to 4	Children should read and understand each word problem. Ask children to memorise tables properly and apply them in division in each question. The first one is done for them.
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# Unit 6: Fractions

## **Lesson 1:** Proper and improper Fraction

**Objectives:** Express the fractions in figure and vice versa, match the fraction with related figures, recognize proper and improper fraction

**Teaching Resources:** - Book pg.129, 130,131,132, teacher's board, and A4 size computer paper

### **Introduction (5min)**

Show full A4 size computer paper. Tell them the its one whole then fold the paper into half and tell them the one part in half is  $\frac{1}{2}$  .then half again to show them the quarter part ,open the paper again and show them all four parts and discuss the half ,quarter and three fourth. Observe their prior knowledge and make them ready for new topic

### **Teaching Procedure (15min)**

Ask children to observe the picture pg.129 and tell the fraction of cake given in picture and ask which child is taking correct portion of cake? They will observe the fractions figures and color the parts according to fraction. They will observe the shaded parts and write and match the fractions.

Tell them about types of fraction .if numerator is less than denominator is known as proper fraction. Numerator is greater than denominator is known as improper fraction.

## **Types of Fractions**

### **Proper Fractions**

Numerator (top number) is smaller than  
Denominator (bottom number)       $\frac{1}{3}$      $\frac{5}{8}$

### **Improper Fractions**

Numerator is larger than Denominator       $\frac{7}{3}$      $\frac{4}{3}$

### **Mixed Numbers**

Whole number and a fraction       $3\frac{5}{7}$      $2\frac{4}{9}$

Explain the examples of book page 131,132

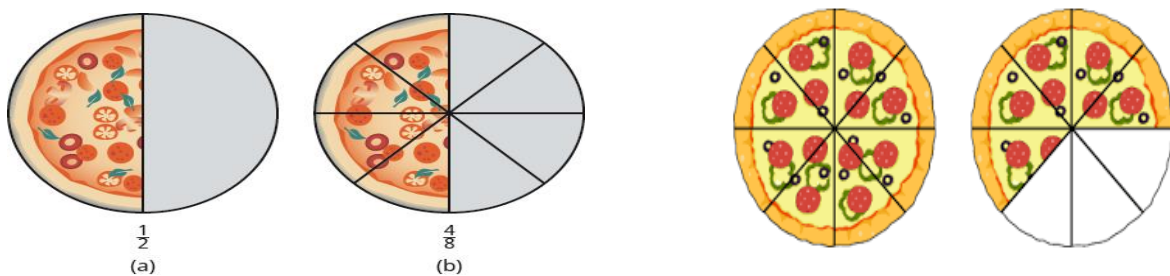
Discuss the real life issues how fraction help us to make further parts of whole and how can compare find the difference of larger part or smaller part.

**Task 18 min**

Exercise 1(Q1): Children should sort out the proper and improper fraction from the given fraction  
(The first one is done for them)

**H.W: Explanation (2min)**

Children should find the proper and improper fraction from the given figures in Homework



**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

## **Lesson 2:** Equivalent fraction

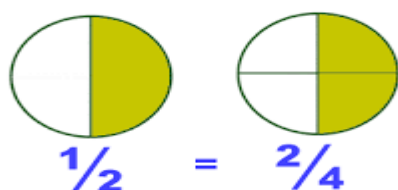
**Objectives:** Identify equivalent fractions from the given figures, write three equivalent fractions for a given fraction.

**Teaching Resources:** - Book pg. 133,134,135,136, teacher's board, and equivalent fraction definition and example chart

### **Introduction (5min)**

Is  $1/2$  and  $2/4$  is equal?

Draw a two circles on teacher's board and show them the fraction  $1/2$  and in other circle and show  $2/4$  and tell them to observe the size of shaded part. Observe their prior knowledge and make them ready for new topic



### **Teaching Procedure (15min)**

Ask children to observe the picture pg.133 and tell them if denominators are same are known as like fractions and if denominators are not same are known as unlike fraction. Discuss the real life example pg.134 and explain them equivalent fraction and example pg.135.tell children that we can observe the denominator and numerator and find the multiples of both when we find the missing equivalent fraction.

**Definition**

**Equivalent Fraction** A fraction with the same numerical value as another fraction but whose numerator and denominator are multiplied by a common factor.

Examples of equivalent fractions:

$$\frac{1}{2} = \frac{2}{4} \rightarrow \frac{1 \cdot 2}{2 \cdot 2}$$
$$\frac{2}{3} = \frac{6}{9} \rightarrow \frac{2 \cdot 3}{3 \cdot 3}$$

Discuss the real life issues how fraction help us to make further parts of whole and how can compare find the difference of larger part or smaller part.

**Task 18 min**

Exercise 2(Q1): Children should match the fraction with its equivalent fraction (The first one is done for them)

Exercise 2(Q2): Children should write the missing numerator and denominators for finding its equivalent fraction (The first one is done for them) (a till f)

**H.W: Explanation (2min)**

Children should do Ex 2 Q2 (g till l parts) pg.136 in Homework

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

### **Lesson 3:** Comparing unlike fraction

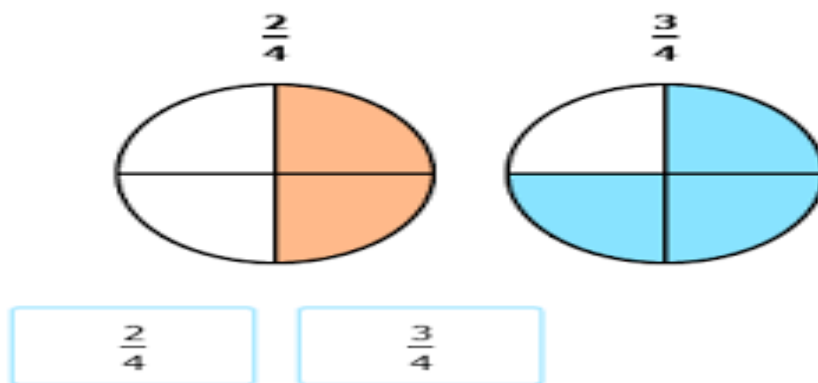
**Objectives:** Compare fractions with the same denominators using symbols  $<$ ,  $>$  or  $=$

**Teaching Resources:** - Bookpg.137, teacher's board, and fraction figures chart

#### **Introduction (5min)**

Show fraction figures and ask them to tell the fractions then ask which have more fractional parts or which fraction have less fractional parts, Observe their prior knowledge and make them ready for new topic

Which fraction is **less**?



#### **Teaching Procedure (15min)**

Ask children to observe the picture pg.137 and explain real life example and ask them who eats more parts of cake? Tell them comparison is easy if denominators are same then we will compare the fraction by observing the numerator, tell them the rule of like fraction if denominators are same larger the numerator larger the fraction .Explain the examples of book pg.137

Discuss the real life issues how fraction help us to make further parts of whole and how can compare find the difference of larger part or smaller part.

#### **Task 18 min**

Exercise 3(Q1): Children should shade the figure and circle the bigger fraction (The first one is done for them)

#### **H.W: Explanation (2min)**

Children should do Q2 pg.138 in Homework

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

## **Lesson 4: Adding like fractions**

**Objective:** Add two fractions with same denominators. Represent addition of fraction through figures

**Teaching Resources:** - Book pg. 139,140, teacher's board, fraction figures chart

### **Introduction (5min)**

Do you know?

Half +half =one whole

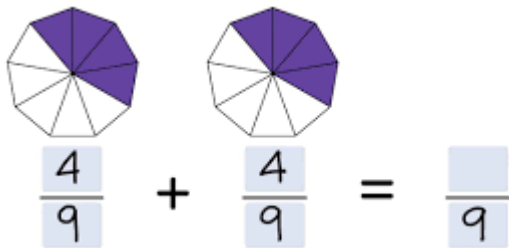
Quarter +quarter = one half

Half + Quarter= three fourth

Observe their prior knowledge and make them ready for new topic

### **Teaching Procedure (20min)**

Tell children we can easily add the fraction with like(same) denominators, we only add the numerators and get the answer. Explain the real life examples pg.139



Discuss the real life issues how fraction help us to find the total parts of anything or how many wholes we get from fraction parts

### **Task 18 min**

Exercise 4(Q1): Children should shade the shape and add the fraction. (The first one is done for them)

Exercise 4(Q2): Children should add the given like fractions (The first one is done for them) (a till e)

### **H.W: Explanation (2min)**

Children should do Ex 4 Q2 (f till i) pg.140 in Home work

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.



## **Lesson 5: Subtracting like fractions**

**Objective:** Subtract two fractions with same denominators. Represent subtraction of fraction through figures

**Teaching Resources:** - Book pg. 141,142, teacher's board, fraction figures chart

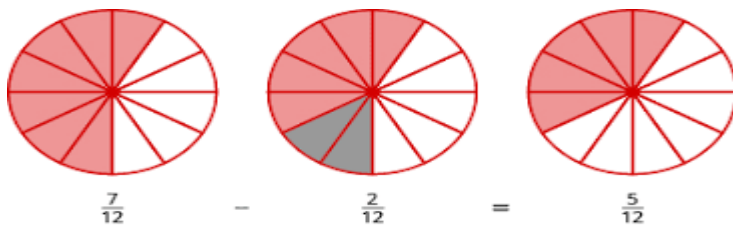
### **Introduction (5min)**

Do you know?

Show them the fraction cut outs and Tell children if we add half and half we get one whole again.  $1/2 + 1/2 = 2/2 = 1$  means one whole and if we add  $1/2$  and  $1/4$  we get three fourth,  $1/2 + 1/4 = 2/4 + 1/4 = 3/4$

### **Teaching Procedure (20min)**

Tell children we can easily subtract the fraction with like(same) denominators, we only subtract numerators and get the answer. Explain the real life examples pg.141



Discuss the real life issues how fraction help us to find about distribution of whole and how much fraction part left at the end

### **Task 18 min**

Exercise 5(Q1): Children should read fractions and then subtract (The first one is done for them)
Exercise 4(Q2): Children should subtract the given like fractions (The first one is done for them) (a till e)

### **H.W: Explanation (2min)**

Children should do Ex 5 Q2 (f till i) pg.142 in Home work

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

# Unit 7: Length, Mass and Capacity

## Lesson 1: Measuring Length

**Objectives:** Use standard metric units of length (kilometer, metre and centimetre) including abbreviations.

**Teaching Resources:** - Text book pg.144, 145,146,147,148,149,150, teacher's board, big scale, metre scale, measuring tape.

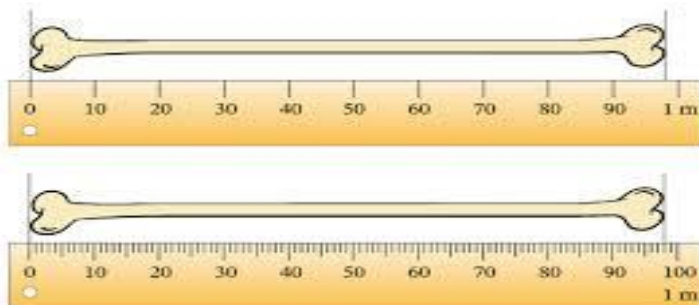
### **Introduction (5min)**

Ask children to observe the pictures on pg.144 and ask them to write the units in which we measure the given objects .children will measure the lines with the help of scale given on pg.145 .children will add the lengths .Observe children's prior knowledge and make them ready for new topic.

### **Teaching Procedure (15 min)**

Ask children to find the objects which has more than 2kg mass and less than 2kg mass in recap activity, children will discuss all the recap question and complete the recap work given on pg. 146

Show them large scale and tell them for small measurement of length we use centimetre and metres and if we want to measure the large table size then we use metre scale. Ask them to measure the length of teacher's board and door, desk and book discuss the examples given on pg.148, 149.150



Discuss the real life example, we can use millimeters or centimeters to measure how tall we are, or how wide a table is, but to measure the length of a football field it is better to use meters. **A meter is equal to 100 centimeters.** Meters can be used to measure the length of a house, or the size of a playground. A kilometer is equal to 1000 meters.

### **Task (20 min)**

Exercise recap pg.145, 146 .Children should identify the mass and add the given masses.

### **H.W: Explanation (2min)**

Children should do recap pg.147 in homework

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

## **Lesson 2: Addition of Length**

**Objectives:** Add measures of length in same units without carrying, Solve real life situations involving same units of lengths for addition without carrying.

**Teaching Resources:** - Text book pg.151, 152,153, teacher's board, two sizes of ropes

### **Introduction (5min)**

Show the children three different sizes objects and ask them which object we measure in cm and which we measure in m. and which object we measure in mm? Observe children's prior knowledge and make them ready for new topic

### **Teaching Procedure (15 min)**

Ask children to observe bookpg.151 discuss the real life situations with them and ask them we can add the length in the same unit with the same method we are using for simple addition. Tell them we can add length in same unit vertically and horizontally.

Discuss the real life example, Length is one of the most common measurements that is used every day. This can tell you how far away the nearest town is, **the width of a fridge or your height**. In science it can be used on very different scales to measure the size of the universe,

### **Task (20 min)**

Exercise1:Q1 .Children should add the given lengths in the same units horizontally and vertically pg. 152
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Exercise: Q2 .Children should add the given lengths in the same units vertically pg. 152
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### **H.W: Explanation (2min)**

Children should do Q3 pg.153 in homework

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

## **Lesson 3: Subtraction of Length**

**Objectives:** Subtract measures of length in same units without borrowing, Solve real life situations involving same units of lengths for subtraction without borrowing.

**Teaching Resources:** - Text book pg.153, 154, 155, teacher's board, two sizes sticks, few stationary items, big size scale

### **Introduction (5min)**

Show them two size sticks and ask student to find the difference of both sticks 35cm minus the small sticks size from large stick size 75cm. Observe children's prior knowledge and make them ready for new topic

### **Teaching Procedure (15 min)**

Ask children to observe book pg.153, 154 discuss the real life situations with them and ask them we can subtract the length in the same unit with the same method we are using for simple subtraction. Tell them we can subtract length in same unit vertically and horizontally.

Discuss the real life example, Length is one of the most common measurements that is used every day. This can tell you how far away the nearest town is, **the width of a fridge or your height**. In science it can be used on very different scales to measure the size of the universe,

### **Task (20 min)**

Exercise2:Q1 .Children should subtract the given lengths in the same units vertically pg. 154
Exercise2:Q3 .Children should subtract the given lengths in the same units vertically pg. 155

### **H.W: Explanation (2min)**

Children should do Q2 pg.155 in homework

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

## Lesson 4: Measuring Mass

**Objectives:** Use standard metric units of mass (kilogram and gram) including abbreviations.

**Teaching Resources:** - Text book pg.156,157 , teacher's board, two objects (one heavier and other lighter) weigh machine if possible ,weigh machine chart to show the measuring scale clearly to children

### **Introduction (5min)**

Show two objects book and pen and ask which one have more weight? Then show pen and paper and ask which one have more weight. Observe children's prior knowledge and make them ready for new topic.

### **Teaching Procedure (15 min)**

Ask children to observe book pg. 156 and discuss the real life examples about objects that which object is heavier and lighter. Tell them the SI Units for kilogram is kg and grams is g .1 kg =1000g show them the measuring scale of weigh machine and ask them to observe pg.156 find the masses of different fruits and objects by observing scale.



Discuss the real life example, Mass can be best understood as the amount of matter present in any object or body. Everything we see around us has mass. For example, **a table, a chair, your bed, a football, a glass, and even air has** mass. That being said, all objects are light or heavy because of their mass.

### **Task (20 min)**

Children should identify the different masses by observing different pictures.

### **H.W: Explanation (2min)**

Children should find which thing is heavier and lighter in homework (water melon/apple) (scissor/pen) (book/tissue)

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

## **Lesson 5: Addition of Mass**

**Objectives:** Add measures of mass in same units without carrying, Solve real life situations involving same units of mass for addition without carrying.

**Teaching Resources:** - Text book pg.157, 158,159 teacher's board, SI unit chart for mass

### **Introduction (5min)**

Show the children three different sizes objects and ask them which object we measure in kg and which we measure in g. and which object we measure in mg? Observe children's prior knowledge and make them ready for new topic

### **Teaching Procedure (15 min)**

Ask children to observe bookpg.157 discuss the real life situations with them and ask them we can add the Mass in the same unit with the same method we are using for simple addition. Tell them we can add Mass in same unit vertically and horizontally.

Discuss the real life example, Mass is one of the most common measurements that is used every day. This can tell you how heavier the object, and how lighter object and we also measure mass when we need a particular quantity to add and making mixture or cooking food. In science it can be used on very different and minute weight of an objects and atoms

### **Task (20 min)**

Exercise3:Q1 .Children should add the given mass in the same units horizontally and vertically pg. 158
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Exercise 3:Q2 .Children should add the given mass in the same units vertically pg. 158
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### **H.W: Explanation (2min)**

Children should do Q3 pg.159 in homework

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

## **Lesson 6: Subtraction of Mass**

**Objectives:** Subtract measures of mass in same units without borrowing, Solve real life situations involving same units of mass for subtraction without borrowing.

**Teaching Resources:** - Text book pg.159, 160,161, teacher's board, SI unit chart for mass

### **Introduction (5min)**

Ask them about the units of Mass

How many mg we find in 1g?

How many g we find in 1kg?

Observe children's prior knowledge and make them ready for new topic

### **Teaching Procedure (15 min)**

Ask children to observe bookpg.159, 160, discuss the real life situations with them and ask them we can subtract the Mass in the same unit with the same method we are using for simple subtraction. Tell them we can subtract Mass in same unit vertically and horizontally.

Discuss the real life example, Mass is one of the most common measurements that is used every day. This can tell you how heavier the object, and how lighter object and we also measure mass when we need a particular quantity to add and making mixture or cooking food. In science it can be used on very different and minute weight of an objects and atoms

### **Task (20 min)**

Exercise4: Q1 Children should subtract the given mass in the same units horizontally and vertically pg. 160
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Exercise 4:Q2 .Children should add the given mass in the same units vertically pg. 161
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### **H.W: Explanation (2min)**

Children should do Q3 pg.161 in homework

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

## Lesson 7: Measuring Capacity

**Objectives:** Use standard metric units of capacity (litres, millilitres) including abbreviations.

**Teaching Resources:** - Text book pg.161, teacher's board, two objects (one big water bottle and other can or small water bottle or juice bottle ) water ,measuring beaker or chart with clear scale

### **Introduction (5min)**

Show two bottles of different size and ask in which bottle holds more water or less water? Then show can and 500ml bottle which one holds more water. Observe children's prior knowledge and make them ready for new topic.

### **Teaching Procedure (15 min)**

Ask children to observe book pg. 161 and discuss the real life examples about two different container jug of 2litre and milk pack 1 litres to find the difference of capacity to hold water. Tell them the SI Units for litre is l and millilitres ml .1 l=1000ml show them the pictures given on pg.179,180,181 and explain the given examples .tell them how can we observe the volume of water in measuring container by observing the measuring scale. Tell them if the size of container increase its capacity or volume also increase



Discuss the real life example, the basic units of measurement of capacity are **liter (l)** and **milliliter (ml)**. To measure smaller quantities of liquid, we use milliliter (ml) and to measure larger quantities we use liter (l).

### **Task (20 min)**

Children should identify the different capacity by observing different pictures.

### **H.W: Explanation (2min)**

Children should find which container have more capacity to hold liquid in homework (drum/1000ml water bottle) (spoon/glass) (bucket/jug)

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.



## **Lesson 8: Addition of Capacity or Volume**

**Objectives:** Add measures of capacity in same units without carrying, Solve real life situations involving same units of capacity for addition without carrying.

**Teaching Resources:** - Text book pg. 162,163, 164, teacher's board, SI unit chart for capacity

### **Introduction (5min)**

Show the children two different containers and ask them which container have more capacity. Observe children's prior knowledge and make them ready for new topic

### **Teaching Procedure (15 min)**

Ask children to observe bookpg.162, 163 discuss the real life situations with them and ask them we can add the capacity and volume in the same unit with the same method we are using for simple addition. Tell them we can add capacity in same unit vertically and horizontally.

Discuss the real life example, one of the main ways volume is used daily is when calculating drinking amounts. When you fill up your vehicle, the volume of gasoline your gas tank holds determines your purchase. Cooking and Baking, Cleaning House, Water Conservation. Swimming Pools and Hot Tubs.

### **Task (20 min)**

Exercise5:Q1 .Children should add the given capacity in the same units horizontally and vertically pg. 163
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Exercise5:Q2 .Children should add the given capacity in the same units horizontally and vertically pg. 164
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### **H.W: Explanation (2min)**

Children should do Q3 pg.164 in homework

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

## **Lesson 9: Subtraction of Capacity or Volume**

**Objectives:** Subtract measures of capacity in same units without borrowing, Solve real life situations involving same units of capacity for subtraction without borrowing.

**Teaching Resources:** - Text book pg.164, 165,166, teacher's board, SI unit chart for mass

### **Introduction (5min)**

Ask them about the units of capacity

How many millilitres we find in one litre?

Which one is hold more water 5l bottle or 10 l bottle?

Observe children's prior knowledge and make them ready for new topic

**Teaching Procedure (15 min)**

Ask children to observe bookpg.164, 165 discuss the real life situations with them and tell them we observe the size of container then we can get clear idea about the volume of container and tell them we can subtract the capacity in the same unit with the same method we are using for simple subtraction. Tell them we can subtract capacity in same unit vertically and horizontally.

Discuss the real life example, one of the main ways volume is used daily is when calculating drinking amounts. **Cold drinks** is bought in 1 l and 1.5 l .medicine syrup volume in ounce and millilitres

**Task (20 min)**

Exercise6:Q1 .Children should subtract the given capacity in the same units horizontally and vertically pg. 165
Exercise6:Q2 .Children should add the given capacity in the same units vertically pg. 166

**H.W: Explanation (2min)**

Children should do Q3 pg.166 in homework

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

# Unit 8: Time

## Lesson 1: Telling the time in a.m. and p.m.

**Objectives:** Use a.m. and p.m. to record the time from 12 hours clock, read and write time from analog and digital clocks.

**Teaching Resources:** - Text book pg.167, 168,169,170,171, teacher's board, Analogue clock

### Introduction (5min)

Tell the time?

Children will observe the time on book opener page 167 then teacher will show them analogue clock and change the time and explain them how to tell the time. Observe children prior knowledge and make them ready for time topic

### Teaching Procedure (15 min)

Ask children to observe the picture of clock on book pg.168 and discuss about the hour hand and minute hand and the time showing on Analogue and Digital clock.in Recap work. Discuss with them

How many hours in a day? =24 hours

How many minutes in one hour? =60 min in an hour

Explain them pg.170 .tell them we show our daily routine by writing a.m. and p.m.



Discuss the real life example, how clocks help us to find the time and time intervals help us to count the durations and a.m. or p.m. tells us the exact time duration that it is day ,evening ,morning or night

### Task (20 min)

Exercise pg.171 children should observe the analogue clock and write a.m. or p.m.

### H.W: Explanation (2min)

Children should DO recap pg. 169 in homework

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

## **Lesson 2: Using the Solar Calendar**

**Objectives:** Read and write days and dates from the calendar.

**Teaching Resources:** - Text book pg.172, teacher's board, yearly solar Calendar

### **Introduction (5min)**

Show the Solar Calendar and tell the children that there are 12 months in a year

Ask the names of months from children. Observe children prior knowledge and make them ready to find a particular date and day.

### **Teaching Procedure (15 min)**

Ask children to observe the Solar Calendar and tell them that we use calendar to tell the date and day there are 12 months and 30 or 31 days in a month except February that has 28 days and in leap year 29 days .there are 4 weeks in a month each week has 7 days and ask the names of days from children

Discuss the question given on pg.172 and ask children to write the answers on book.

Discuss the real life example, why we know about months because we want to know how much time passed and we plan different activities on different days. Like we celebrate birthdays when our birthday month comes.

### **Task (20 min)**

Exercise: pg. 172 Children should observe the solar Calendar and write the answers of given questions

### **H.W: Explanation (2min)**

Children should learn the names of Months in Solar calendar in home work.

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

## **Lesson 3: Adding time in hours**

**Objectives:** Add measures of time in hours, solve real life situations involving measures of time for addition of hours.

**Teaching Resources:** - Text book pg.173, 174, 175, teacher's board, time intervals chart

**Introduction (5min)**

Show the time interval chart to children and ask questions

Do you know how many days in a week?

How many months in a year?

How many hours in a day?

How many seconds in an hour?

Observe their prior knowledge and make them ready for new topic

**Teaching Procedure (15 min)**

Discuss the real life situation given on pg.173 and give them the concept of adding time in hours

Discuss the question given on pg.174 and 175 and tell them we can add given hours to find the total hours we spend for any activity.

Discuss the real life example, why we know about months because we want to know how much time passed and we plan different activities on different days. Like we celebrate birthdays when our birthday month comes.

**Task (20 min)**

Exercise1 Q1 pg. 174 Children should add the given time in hours.
---

Exercise1 Q2 pg. 174 Children should read the word problem and add the given time in hours.
---

**H.W: Explanation (2min)**

Children should do Q3, Q4 pg.175 in home work.

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

## **Lesson 4: Subtracting time in hours**

**Objectives:** Subtract measures of time in hours, solve real life situations involving measures of time for subtraction of hours.

**Teaching Resources:** - Text book pg.176, 177, 178 teacher's board, time intervals chart

### **Introduction (5min)**

Ask children that Ali do homework in 1 hours and Sara do the same home work in 2 hours. How much time they both spend on completing homework altogether? Observe their prior knowledge and make them ready for new topic

### **Teaching Procedure (15 min)**

Discuss the real life situation given on pg.176 and give them the concept of subtracting time in hours

Discuss the question given on pg.176, 177 and 178 tell them we can subtract given hours to find the left over hours.

Discuss the real life example, why we know about months because we want to know how much time passed and we plan different activities on different days. Like we celebrate birthdays when our birthday month comes.

### **Task (20 min)**

Exercise2 Q1 pg. 177 Children should subtract the given time in hours.
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Exercise1 Q2 pg. 177 Children should read the word problem and subtract the given time in hours.
--

### **H.W: Explanation (2min)**

Children should do Q3, Q4 pg.178 in home work.

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

# Unit 9: Geometry

## Lesson 1: Point, Line, Ray and line segment

**Objectives:** Recognize Point, line, ray and line segment

**Teaching Resources:** - Text book pg. 180,181, 182, teacher's board, definition chart of line, ray and line segment


### Introduction (5min)

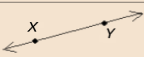
Ask children to observe the 3D shape on pg. 180 and find the number of sides identify the shape from given clue and write the edges vertices and faces of cuboid shape in recap activity. Observe children prior knowledge and make them ready for topic

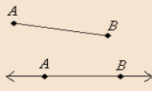
### Teaching Procedure (20 min)

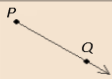
Draw two dots on teacher's board and label X and Y then draw line and show arrow both side means line can be extended both side ,up and down .explain the definition of point ,line ,ray and line segment on pg.182

**Lines, Line Segments, and Rays**

A point has no size or shape, just position.  Point  $M$

A line is a straight path of points that has no beginning or end.  Line  $\overleftrightarrow{XY}$

A line segment is a portion of a line that has two endpoints.  Line segment  $\overline{AB}$

A ray is a portion of a line which has one endpoint and extends forever in one direction.  Ray  $\overrightarrow{PQ}$

Discuss the real life examples that we can find lines all around us, show them the items in the class have lines. Architect use lines to draw and designs structures

### Task 15min

Exercise: Recap pg.181: Children should match the 3D shape with given real object pictures. (The first one is done for them)

Exercise 1:Q1 Children should identify and mark 'P' for point 'R' for ray 'L' for line and ;Ls for line segment in the given question pg.185 in copies

### H.W: Explanation (2min)

Children draw the point, ray line and line segment in Home work

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

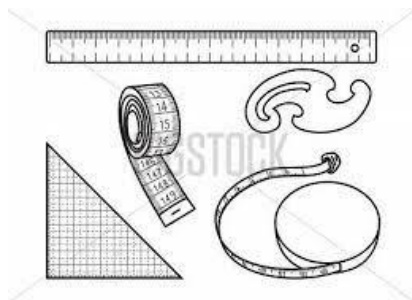
## Lesson 2: Measuring and drawing lines

**Objectives:** Recognize Point, line, ray and line segment

**Teaching Resources:** - Text book pg. 183,184, 185, teacher's board, measuring scale large size, picture of measuring tool

### **Introduction (5min)**

Show the children large size measuring scale and discuss the lines between 0 to 1cm and 1cm to 2cm, explain them there are 10 lines of millimeter we find between each centimeter mean  $1\text{cm}=10\text{mm}$  and  $100\text{cm} = 1\text{m}$  .show them the measuring tape and other available tools or show them the picture of measuring tools

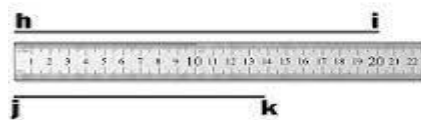


### **Teaching Procedure (20 min)**

Draw line segment on teacher's board and use large scale for demonstration how to measure the line segments .and then ask children to measure the lines which given on book pg.185 and write answer in copies.

Ask them to draw the given measurement lines with the help of their measuring scale in copies, give them concept of straight and curve lines

#### **Measuring Line Segments in Centimeters**



Discuss the real life examples that we can find the concept of lines and angles are used in our daily life. Straight lines are in classrooms on the floor, door, window, zebra crossing on road side.



**Task 15min**

Exercise 1: Q2 Children should measure the line segments given on pg.185. (The first one is done for them)

Exercise 1:Q3 Children should measure with scale and draw line segment in the given question pg.186 in copies

**H.W: Explanation (2min)**

Children identify straight line and curved lines on book pg.186 Q4 in Home work

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

### **Lesson 3: Quadrilaterals**

**Objectives:** Classify figures according to number of sides as Quadrilaterals,(rectangle, squares and triangles)

**Teaching Resources:** - Text book pg. 187 teacher’s board, shapes and number of sides chart





#### **Introduction (5min)**

Show and tell?

Show or draw the shape on board and ask children how many sides? Observe their prior knowledge and make them ready for topic.

#### **Teaching Procedure (20 min)**

Tell children about 2 D shapes and its sides and vertices .discuss the examples given on pg.187

2D Shapes			
Name		Sides	Vertices
triangle		3	3
circle		1	0
square		4	4
rectangle		4	4

Discuss the real life example of shapes and its sides ,vertices ,give them examples of real life objects like blackboard ,kite cricket pitch ,a regular square ,a rectangle etc. are examples of quadrilaterals

#### **Task 15min**

Exercise Children should draw shapes and write its number of sides and vertices in copies

#### **H.W: Explanation (2min)**

Children write the names of real life objects have 4 sides, 3 sides no side for practice of concept in Home work

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

### Lesson 4: Perimeter

**Objectives:** Calculate perimeter of square, rectangle and triangle

**Teaching Resources:** - Text book pg.189, 190,191 teacher's board, perimeter formula chart along with shapes



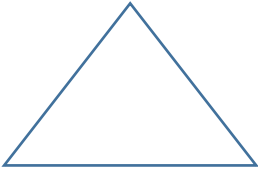
#### **Introduction (5min)**

Draw square shape on board and ask children how many sides?

Then tell them the outer distance round the shape is called perimeter, and it's the total length of the boundary of any shape discuss the real life example given on pg.189 ,observe their prior knowledge and make them ready for new topic

#### **Teaching Procedure (20 min)**

Draw rectangle,triangle and square shapes on board and discuss the real life example given on pg.190,191 and 192 . explain children about the total outer boundary length of a figure is called Perimeter and its unit is mm,cm metre and kilometre

Perimeter of a square 	Perimeter of a square = 4x length Perimeter of square=4L
Perimeter of a Rectangle 	Perimeter of a Rectangle =2x length+2x breadth Perimeter of rectangle =2(l + b)
Perimeter of a Triangle 	Perimeter of a Triangle = sum of all three sides Perimeter of a Triangle =3x length P=3l

They will discuss the all the real life situations and find the formulas and method to calculate the perimeter of given shapes. Discuss the some common uses of perimeter in the real world? In everyday life area and perimeter are used constantly – for example, for **describing the size of a house by talking about its floor area**, or for working out how much wire is needed to fence off a field.

### Task 18min

Exercise 3(Q1) Children should calculate the perimeter of given enclosed shapes on book pg.192, 193

### H.W: Explanation (2min)

Children should find the perimeter of square has 5cm length, rectangle has 2cm length and 4cm breadth, and triangle has 9cm length in Home work

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

## Lesson 5: Circles

**Objectives:** Identify Centre, radius and diameter of a circle

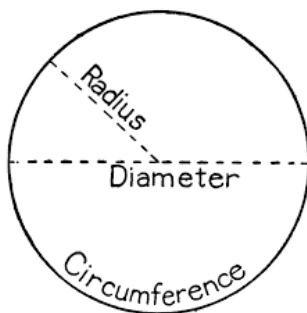
**Teaching Resources:** - Text book pg.194, 195,188 teacher's board, big circle shape cutout

### Introduction (5min)

Show them a big circle cutout then fold circle in half and tell them it is half of circle called semi-circle then fold again the half in more half and tell them it's quarter of circle .Draw big circle on board and draw line to make it half then show the quarter part of circle, Observe their prior knowledge and make them ready for new topic.

### Teaching Procedure (20 min)

Draw Circle on board and discuss the parts of circle given on pg.194 one by one explain



The perimeter of a circle is called circumference, middle point is the center of circle, the line passing through the center and touching either side of the circle is the diameter, the line drawn from the Centre of the circle to any point on its circumference is called radius.

They will discuss the all the real life situations where we find circles it can occur naturally — in **planets, stars, celestial bodies, tree rings, rain drops** — or they can be man-made — such as traffic roundabouts, buttons, volleyballs, pizza.

### **Task 18min**

Exercise 2 (Q1 till 3) Children should count the number of semi-circle, quarter circle and name the shapes on pg. 188
---

Exercise 4 (Q2) Children identify the parts of circle and label in the book pg.195
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### **H.W: Explanation (2min)**

Children should draw the center, radius and diameter line in the given circles on pg.195 Q1 in Home work

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

## **Lesson 6: Symmetry**

**Objectives:** Identify Reflective symmetry in two dimensional 2D shapes, identify and draw lines of symmetry.

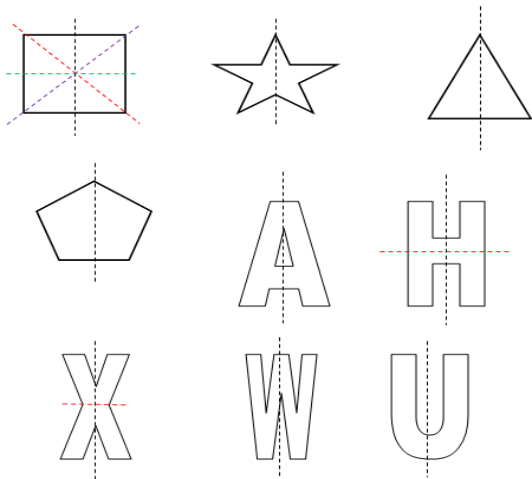
**Teaching Resources:** - Text book pg.196, 197,198, teacher's board, computer sheet, 2D figures chart, leaf cutout, H alphabet cutout

### **Introduction (5min)**

Show the picture of apple then fold it in half and show the lines which makes the apple in two halves is symmetrical line .same demonstration show them with leaf cutout. .observe their prior knowledge and make them ready for new topic

### **Teaching Procedure (20 min)**

Show the letter H symmetrical line to children and explain them when things appear in equal parts after finding symmetry is known as Reflective symmetry and find the number of symmetry lines on different shapes ,objects and letters



Explain them pg.196.197 and Discuss the **Real-life examples of symmetry**

- Reflection of trees in clear water and reflection of mountains in a lake.
- Wings of most butterflies are identical on the left and right sides.
- Some human faces are the same on the left and right side.
- People can also have a symmetrical mustache.

### Task 18min

Exercise 5(Q1) Children should draw lines of symmetry on given figures on book pg.198

### H.W: Explanation (2min)

Children should draw square, triangle, semi-circle, rectangle and draw symmetry lines in Home work

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

## Lesson 7: 3 Dimensional Shapes

**Objectives:** Describe 3-D objects (cube, cuboid, and pyramids) with respect to the number of edges and faces, differentiate 3 dimensional objects with respect to the number of edges and faces.









**Teaching Resources:** - Text book pg.199 200, teacher's board, 3D shape objects like biscuit box, gift box, water bottle, birthday cap in cone shape and ball

### Introduction (5min)

Show them a box and ask the face shape of box, then tell them this box face shape is square and all 6 faces are same, but this box is 3 D Shape. Observe their prior knowledge and make them ready for new topic

**Teaching Procedure (15 min)**

Show them biscuit box and tell them it's cuboid shape .lets count the number of faces ,it has 6 faces ,now the corners(vertices )it has 8 vertices ,now let's count the lines of edges it has 12 edges. One by hold the object in hand and explain them. Give some objects to children to touch and observe the faces edges and vertices.

3D shapes	Faces	Edges	Vertices
cube 	6	12	8
cubiod 	6	12	8
cone 	1	0	0
square pyramid 	5	8	5
cylinder 	2	2	2
sphere 	0	0	0
triangular pyramid 	4	6	4
triangular prism 	5	9	6

Discuss the Real-life examples of 3 dimensional shapes like we find cylinder shape in water bottle, cone shape in ice cream cone, cuboid shape in biscuit boxes.

**Task (20 min)**

Exercise 5 Q1 pg.200 children should circle the shapes has only flat face

**H.W: Explanation (2min)**

Children should make table same like pg.199 and write the names of 3D shapes its faces, edges and vertices to revise the concepts in home work

**Teachers' Assistance:** Teachers Resource book, learning well LMS, E-tutorial lessons.

# Unit 10: Graphs

## Lesson 1: Carroll Diagram

**Objectives:** Represent the data by Carroll diagram, Read and interpret Carroll diagram

**Teaching Resources:** - Text book pg.201, 202, 203, teacher's board, Carroll diagram chart

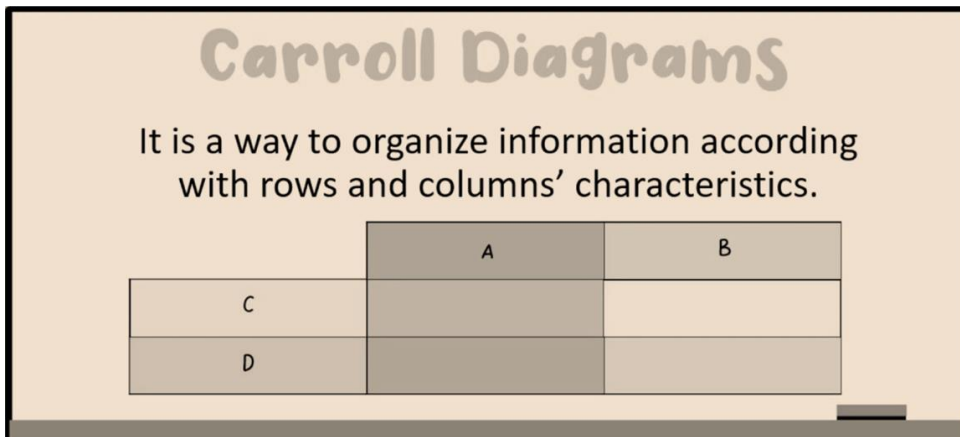
### **Introduction (5min)**

Ask children to observe the book pg.201 and count the number of animals

Tell them about the data is collection of information, data can be numeric and words and pictures  
Observe their prior knowledge then make them ready for collection and representation of data.

### **Teaching Procedure (20 min)**

Tell children about representation of data in the form of carroll diagram



explain them example1 pg.202 examples 2 and 3 pg.203 that how can we represent the data in carroll diagram .children will paste the carroll diagram in copies and solve exemapalry question.

discuss the real life examples about data collection for survey ,class information,for some special purpose

### **Task 18min**

Exercise 1 (Q1) Children should write the data names of shapes which cab roll with vertex, which can roll but not have vertex, cannot roll with vertex and cannot roll without vertex pg.205

### **H.W: Explanation (2min)**



Children should discuss the method and do Q2 pg.205 in Home work

## **Lesson 2: Tally chart**

**Objectives:** Represent the data by drawing tallies by observing the raw data. Read and interpret Tally chart

**Teaching Resources:** - Text book pg.204, teacher's board, tally chart

### **Introduction (5min)**

Ask children to count the number of boys and girls in class and make table to write data inside the table

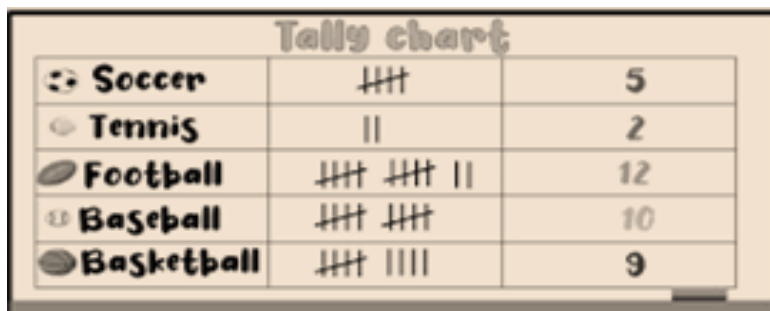
No of boys in class	Number of girls in class
13	15






Total =25

Tell them about the data is collection of information, data can be numeric and words and pictures Observe their prior knowledge then make them ready for collection and representation of data.

### **Teaching Procedure (20 min)**

Tell children about representation of data in the form table by drawing five lines in the form of tally then write in numbers as well in table and enter data.



Tally chart		
 Soccer		5
 Tennis		2
 Football		12
 Baseball		10
 Basketball		9

explain them example1 pg.204 that how can we represent the data through tally chart and read the given data.discuss the real life examples about data collection for survey ,class information,for some special purpose for collection of raw data and organise in tabulation

### **Task 18min**

Exercise 1 (Q3) Children should observe the picture and tally marks and write the answers of given questions on book pg.206

### **H.W: Explanation (2min)**

Children should collect the data of their toys any make table then draw tally marks to represent the data.

## Lesson 3: Picture Graphs

**Objectives:** Read and interpret Picture graph

**Teaching Resources:** - Text book pg.207, teacher's board, pictorial graph chart

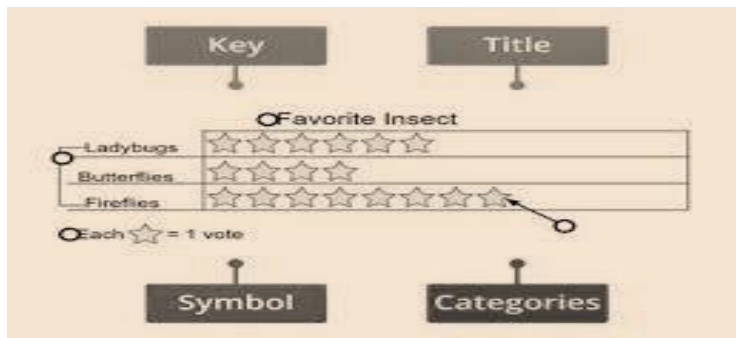
### **Introduction (5min)**

Show the pictorial chart and ask them to count the number of blue, red and yellow pencils and draw in table .Tell them about the data is collection of information, data can be numeric and words and pictures Observe their prior knowledge then make them ready for collection and representation of data

### **Teaching Procedure (20 min)**

Tell children we can read data in the form of pictures. We count the number of pictures then answer the given questions .

explain them example1 pg.207 that how can we read the picture graphs .discuss the real life examples about data collection by observing pictures and items



### **Task 18min**

Exercise 2 (Q1) Children should observe the pictures about favorite ice cream and write the answers of given questions on book pg.209

### **H.W: Explanation (2min)**

Children should do Q2 pg.210 on book

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