



# **Unit 1: Whole Numbers**

# **Roman Number**

# Period required: 3

**SLOs:** Students will be able to:

- Read Roman number up to 20
- Write Roman number up to 20
- **Resources:** Clock faces, Numerals and Roman Numbers-Flip chart of Poem.

### Methodology:

#### Recap:

• Teacher will show two clock faces to the students. One with Roman Numerals and the other with Numbers (if clocks are not available than she can draw the clocks) She will ask the students to list up the differences.

**Oracy:** Teacher will share objective of the day.

#### **Routine:**

- Teacher will tell about the background of Roman Numbers from Pg. No.02 of the book.
- Teacher will tell them that Roman Numbers are represented by Latin alphabets.
- To memorize the Roman Numbers, teacher will show flip chart to them.
- Teacher will shows flash cards of Roman Numbers to students and help them to read.
- She will teach rules for writing Roman Numbers when a smaller symbol appears before a greater symbol, it is subtracted.

IV = V - I = 5 - I = 4 4 = IV

When a smaller symbol is written after a greater symbol, it's added

$$IV$$

$$= V + I$$

$$= 5 + I$$

$$= 6$$

$$VI = 6$$

- Pg. No.3 of the book will be explained to students.
- In the second period, students will write Roman Numbers in their notebooks.
- In the next period, teacher will guide the students to put price tags on their belongings by using Roman Numerals.



Homework: Do page no. 5 of the book.

**Even and odd Numbers** 

#### **Period required: 2**

**SLOs:** Students will be able to:

- Recognize even and odd numbers up to 99 within a given sequence.
- Differentiate between even and odd numbers within a given sequence.

**Resources:** Flash cards of numbers. Pencils, Beads, Crayon's, Marker, Board, Duster.

### Methodology:

**<u>Recap:</u>** Teacher will recall the previous lesson of Roman numbers.

**Oracy:** Teacher will share objective of the day with the students.

# **Routine:**

- Teacher will show pencils, beads or caryons to student and invite them to make their pairs (sets).
- Teacher will tell them that all the number which can be put into pairs is called even number and if any number which cannot be put into pairs is called odd number. (Practice will be done)
- Teacher will write down few numbers on the board and will invite the students randomly to circle the even numbers.
- Teacher will make it clear to the students that all the numbers that have 0, 2, 4, 6, 8 as their unit are always even for example, 2<u>6</u>, 34<u>8</u>, 1<u>2</u>, 79<u>0</u>, 679<u>4</u>
- For further reinforcement teacher will arrange a quiz. She will ask the following questions.
  - a) Which is the first even number?
  - **b**) Which is the first odd number?
  - c) How the even numbers are different from odd number?
- Teacher will show different flash cards of numbers to the students to guess about the even or odd numbers.
- Teacher can play a game of even numbers with the students. She will say the students to say or sing counting in twos.
- The student who will say more numbers will be the winner.
- Page # 4 and 6 will be explained to the students by the teacher. Students will complete these pages individually.

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# **Place Value**

#### **Period required: 2**

**SLOs:** Students will be able to:

• Identify the place value of numbers up to 5-digit.

**Resources:** (Manipulative)

- Place value mats, cubes, base 10 apparatus.
- Place value charts, loose sheet.

#### **Methodology:**

**Recap:** Teacher will ask the students about the place value of 2-digit numbers.

**Oracy:** Teacher will share objective of the day with the students.

#### **Routine:**

- Teacher will reinforce the students to write the number in base ten.
- She will write few numbers on the board and will invite the students to write them in base ten. 67 = 6 tens and 7 ones
- Teacher will prefer using place value mat to make reading and writing numbers easily
- Manipulative are great for understanding.
- Teacher is requested to make place value chart that can be re-useable by including a place for ten thousands, thousands, hundred, tens, ones (units)

Ten Thousand	Thousand	Hundred	Tens	(9) Ones			

#### Place – Value Mat

- On the very first day, use your mat for 3-digit numbers only.
- Call the students to your action table give them a number and say them to lay down cubes on the mat accordingly.
- Teacher will gather the students in a circle. She will spill almost 100 caryons or blocks in the middle of the circle. She will asks the students "How we can count these caryons in a way that's easier than counting by ones?"



- Teacher will test out any of the counting suggestions that students give. Give them the idea of counting by'10s', or making sets of 10s'. (Teacher can use beads pencils, paper clips or any available material)
- After reinforcement of 3-digit numbers, teacher will use the place value mat to display 4-5 digit numbers.
- Teacher will provide loose sheets to students.
- Teacher will divide the class into pairs and will ask them to display place value of 5digit number (Different numbers will be allotted to different students).
- If base 10 apparatus is not available teacher can use manipulative.



(Teacher can use manipulative on Place – Value Mate as well)

- Page # 7 and 8 will be explained to the students after practicing place value practically
- Students will be encouraged to do exercise individually.

Numbers up to 10,000

## **Period required: 2**

**SLOs:** Students will be able to:

• Read and write given numbers up to 10,000 (ten thousand) in numerals and words.

**Resources:** Flash cards, tap (to be pasted on the board), Marker, Duster.

### **Methodology:**

**<u>Recap:</u>** Teacher will recall the numbers counting in 100s.

**Oracy:** Teacher will share objective of the day with the students.

- Teacher will reinforce the numbers up to 10,000.
- She will write random numbers on the board and will call the students to write the next number.
- She will guide the students to read the numbers by using their representators.



- Teacher's Guide Mathematics 3
- Teacher will paste the cards on the board.
- She will write a 5-digit number on the corner of the board.
- She will invite the students to write the numbers under their representators according to their value.
- At the end teacher will arrange a short quiz.
  - ✓ Which is the greatest 1-digit number?
  - ✓ Which is the smallest 1-digit number?
  - ✓ Which is the smallest 2-digit number?
  - ✓ Which is the greatest 2-digit number?
  - ✓ Which is the smallest 3-digit number?
  - ✓ Which is the greatest 3-digit number?
  - ✓ Which is the greatest 4-digit number?
  - ✓ Which is the smallest 4-digit number?
  - ✓ Which is the greatest 5-digit number?
  - ✓ Which is the smallest 5-digit number?
- She will invite students to go through their book and do exercise 1C individually.

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# **Numbers Line**

#### **Period required: 2**

**SLOs:** Students will be able to:

- 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.

**Resources:** Number line, board, marker, duster.

### **Methodology:**

**Recap:** Teacher will ask the students about the positive and negative numbers.

**Oracy:** Teacher will share objective of the day with the students.

- Teacher will show a number line of negative and positive numbers to the students. Negative number will be representing with a negative sign or a little minus.
- Teacher will make it clear to the students that the numbers that are written on the left of (origin) zero are less than zero.
- Teacher will guide the students how to read a number line.
- She will encourage students to read the number line to their friends.
- Page # 11 will be explained to the students by the teacher.
- In H-W, teacher can assign to draw a number line of 2-digit numbers. 0 100 with the intervals of 10.



# **Comparing and Ordering Numbers**

### **Period required: 2**

**SLOs:** Students will be able to:

- Compare two number up to 3-digits using symbols <, >, =
- Write the given set of numbers in ascending & descending order number up to 3-digit.
- **Resources:** Board, marker, duster, book, flash cards of signs.

### Methodology:

#### Recap:

• Teacher will recall the concept of the greatest and smallest numbers. She will write three 3-digit numbers on the board and will ask the students to recognize the smallest and greatest numbers 816, 914, 526

**Oracy:** Teacher will share objective of the day with the students.

# **Routine:**

- Teacher will show flash cards of signs to the students. She will make them identify and recognize as
  - > is used for greater than
  - < is used for less than
  - = is equal to
- Teacher will guide the students to first look at the number of digits in each number. Then compare the place values of numbers with the same amount of digits.
- Teacher can tell a story of alligator to the students > is the alligator that is very hungry. It wants to eat more. So its mouth is opened towards the greater number < but if the monster doesn't like to eat much it will move towards smaller number.
- Teacher will write numbers on the board like



956



118

on the board. She will invite students randomly to the board to add the signs. (Practice will be done)

- Page # 12 will be explained to the students.
- Students will be guided to solve Exercise ID individually.
- Teacher will guide and recall ascending & descending arrangement of numbers.
- Flash cards of numbers will be distributed among students. Other students will be asked to arrange the numbers in ascending order. (from smallest to largest)
- Same practice will be done for descending order (greatest to smallest).
- Q # 1, 2 of page # 13 will be done in C.W.



# Estimation

### **Period required: 2**

**SLOs:** Students will be able to:

• To round off a whole number to the nearest 10 and 100

Poem of rounding written on a flip chart.

#### Resources: Methodology:

#### Recap:

 Teacher will show a flip chart of poem written on it. Underline the digit Look next door
 If it's 5 or higher add one more
 If it's 4 or lower just ignore

**Oracy:** Teacher will share objective of the day with the students.

### **Routine:**

- Teacher will write few numbers on the board and recall the poem with the students. If the number is 2-digit number than guide the students to see unit first. If the unit is up to five or more than five than the tens will be changed. If the number is less than five than just ignore it.
- Same will be done for 3-digit numbers.
- Page # 13 will be explained to the students.

**NOTE:** Next 4 periods will be used for the exercise and test.

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# **Unit 2: Numbers Operations**

# Addition

# **Period required: 7**

**SLOs:** Students will be able to:

- Add numbers up to 4-digit with and without carrying vertically and horizontally.
- Add numbers up to 100 using mental calculation strategies.
- Solve real life number stories up to 4-digit with and without carrying involving addition.

**Resources:** Flip chart of vocabulary of Addition. Board, marker, duster, book, loose sheets.

#### **Methodology:**

#### Recap:

- Teacher will recall the addition of 2-digit number.
- Teacher will write sums of 2-digit numbers on the board and will invite the students randomly to solve then. (Start from the without carrying)

Т	0		Т	0		Т	0
2	6		6	4		7	9
2	3	+	2	3	+	6	0

Then 3-digit addition will be practiced.

**Oracy:** Teacher will share objective of the day with the students.

- Teacher will recall the vocabulary of addition with the students by showing flash cards to the students.
- Teacher will introduce 4-digit addition to the students. (without carrying)
- She will write 4-digit addition on the board.
- She will guide the students to start adding the numbers from unit. Then tens Then hundred and at the last Thousands

Inch	tens		Inch	inunui cu une	a ut th	o lust	inou
Th	Η	Т	Ο	Th	Η	Т	0
4	6	3	1	7	8	6	5
+3	1	2	7	+ 2	1	3	4

- Teacher will explain page # 19 to the students.
- She will a maximum practice with them.



- Students will be divided into groups and will be guided to create 4-digit addition word problems.
- Teacher will exchange the word problems among the groups.
- After the students would solve those word problems teacher will again shuffle the papers for checking.
- At the end teacher will recheck them.
- Next she will introduce page no. 20 and invite students to have a maximum practice.
- Teacher will tell the students another way of solving addition. Horizontal Method of addition

```
5164 +
           4723
First of all expand the number.
           5000 + 100 + 60 + 4
5164 =
           4000 + 700 + 20 + 3
4723 =
Add them (5000 + 4000)
(100 + 700) (60 + 20)
(4 + 3)
9000 + 800 + 80 + 7
      9000
       800
        80
         7
      9887
Second way is to
5
     (1
           6
                 4
                             4
                                   7
                       +
```

add unit into unit, tens into tens, hundreds into hundreds and thousands into thousand. More practice will be done.

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- Teacher will explain page # 21.
- Then students will be guided to solve page # 21 by themselves.
- Next day teacher will reinforce the concept of addition with carrying.
- Teacher will reinforce the vocabulary.
- Teacher will invite the students to the board to solve 2-digit addition with carrying.





Similarly 3-digit, addition and 4-digit, addition will be done.



1032 Ans

- Teacher will guide the students through grouping. Pages # 20 will be explained.
- Practice will be done on the board. Page #22, 23 and 24 will be done by the students individually.
- Next three periods will be used to do the exercise and activities.

# **Subtraction**

#### **Period required: 7**

**SLOs:** Students will be able to:

- Subtract numbers up to 4-digit with and without borrowing.
- Subtract numbers up to 100 using mental calculation strategies.
- Solve real life number stories up to 4-digit with and without borrowing involving subtraction.

**Resources:** Flip chart of vocabulary of subtraction. Board, marker, duster, loose sheets.

#### Methodology:

#### **Recap:**

• Teacher will recall the vocabulary for subtraction. She will show flash cards to the students and will make them read those flash cards.

**Oracy:** Teacher will share objective of the day with the students.

- Teacher will recall subtraction of 2-digit numbers by inviting the students to the board.
- Teacher will reinforce the simple method of subtraction.



**Unit 2: Numbers Operations** 



**Teacher's Guide Mathematics 3** 

$$80 + 8 - 50 + 6$$

$$80 - 50 = 30$$

$$8 - 6 = 2$$

$$= 32$$
So 88 - 56 = 32

After practicing 2-digit the teacher will teach the students to subtract 3 or 4-digits. She will teach simple subtraction without borrowing.

Th	Η	T	0	
6	7	4	3	
- 5	6	3	2	
			1	

- Teacher will guide the students to start from the ones, then tens, then hundreds and at the last thousand.
- Teacher will explain page # 28 & 29 to the students.
- Teacher will do practice of subtraction on the board with the students.
- In the next lesson teacher will teach subtraction with borrowing. Remind the students that representators should be written first. Always start subtracting from ones (units). Greater number should be written on the top 10 ones make one ten. So if ones will be in need of help they can borrow from their neighbor.
- Teacher will sing a song for the students to make it easy to understand. More on the top
  - i. No need to stop
  - ii. More on the floor
  - iii. Go next door
  - iv. Get some more
- Practically she will show the students by solving sums on the board.
- She will call the students to the board for practice.
- Page # 29, 30 and 31 will be explained to the students.
- Teacher will hide some word problems (written on paper) in the class before the lesson starts. She will ask the students to find them and answer them. Within 10 ten minutes the student who will collect more strips and will answer correctly will be the winner.
- Page # 32 will be explained by the teacher and students will be guided to solve it individually.
- More < more practice in both the ways (written & mental) will be suggested.
- Next four periods will be used for the revision exercise and test.



# Multiplication

#### Period required: 8

**SLO:** Students will be able to:

- Develop multiplication tables for 6, 7, 8 and 9.
- Multiply 2- digit number by 1- digit number.
- Multiply a number by 0 and 1.
- Apply mental mathematical strategies to multiply 1-digit numbers to 1-digit numbers.
- Solve real life situations involving multiplication of 2-digit numbers by 1-digit numbers.

**Resources:** Countable Manipulative (buttons, macronies, beans).

#### Methodology:

#### Recap:

- Teacher will ask the students about the time tables.
- She will ask them doing tables

#### For example,

 $2 \times 6 =$ 5 x 10 = 10 x 7 =

**Oracy:** Teacher will share objective of the day with the students.

## **Routine:**

- Teacher will make few things clear to the students.
- Multiplying any number with zero, will change the number into zero.
- If the position of factors is changed, the product will remain the same.

$$4 \times 5 = 20$$
  
factors product

 $5 \times 4 = 20$ 

• Teacher will introduce the method of repeated addition to the students.

For example,

5 x 4 = 20

5 + 5 + 5 + 5 = 20 Or 4 + 4 + 4 + 4 = 20

- She will explain page # 37 or she can reinforce the method of sets (grouping) as well.
- Suppose that the teacher is going to provide manipulatives to students and will ask the students to make groups for  $5 \times 4 =$
- Teacher will guide the students to layout beads, beans or paper clipper as physical manipulatives in 4 groups of fives.
- She will focus on time tables' drill on regular basis.



- She will help the students understand that a number multiplied by one remains the same 9 x 1 = 9
- Any number multiplied by zero will become zero
  6 x 0 = 0
  8 x 0 = 0
- Any number multiplied by two is just that number plus itself.
  - $6 \times 2 = 12$
  - 6 + 6 = 12
  - $8 \times 2 = 16$
  - 8 + 8 = 16
- Any number up to nine multiplied by 11 is the same digit repeated twice.
  - $5 \times 11 = 55$
  - $4 \times 11 = 44$
  - 9 x 11 = 99
- She will help students to go through page no. 38 to 41.
- Page # 42 will be given as H.W.
- For further reinforcement teacher will conduct quizzes.
- One example is that teacher will distribute cards among students with a single number and a multiplication sentence underneath.
- They read out "I have {my number}, who has X times Y ? Who I am?
- After practicing multiplication facts teacher will bring the students to word problems. She will make them a little bit complex. Teacher will help the students to discover the underlying times table.
- Page #44 + 45 will be done as C.W.
- Regular drill of times table should be done.
- Next three periods will be used for the revision exercise and test.

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# Division

# Period required: 8

**<u>SLO:</u>** Students will be able to:

- Divide 2-digit number by a 1-digit number (with zero remainder)
- Apply mental mathematical strategies to divide 1-digit number by a 1-digit number.
- Solve real life situations involving division of 2-digit number by a 1-digit number.

**Resources:** Manipulatives (beans, beads, paper clippers).

# Methodology:

## Recap:

• Teacher will distribute manipulatives among students (groups) and will ask them to share among themselves equally.



**Oracy:** Teacher will share objective of the day with the students.

#### **Routine:**

- Teacher will start division with the concept of sharing.
- She will practice of sharing manipulatives between students equally.
- Secondly she will present division as opposite of multiplication. For example:  $7 \ge 4 = 28$   $28 \div 4 = 7$
- She will make it clear to the students that the numbers are same but arranged in a different way.
- Teacher will revise times tables loudly for division practice.
- Teacher will guide the students to write each hands-on problem as a traditional division problem, so he has to make the connection between the process and a written problem.
- Through the traditional method of division teacher will guide the students to solve division through multiplication fact.

Page # 52 + 53 will be done.

- She will tell them that an easiest way to teach division is repeated subtraction. With repeated subtraction students have to subtract the smaller number from the bigger one
- until get zero. Then count how many times they have subtracted the smaller number **For example:**

 $\begin{array}{r}
24 \div 6 \\
1). \quad 24 \div 6 = 18
\end{array}$ 

**2).** 18 - 6 = 12

**3).** 
$$12 - 6 = 6$$

**4).** 
$$6 - 6 = 0$$

- The teacher will now invite students to go through book and solve questions in pairs.
- Last but not least teacher will share some story problems with the students. She will encourage the students to create their own ward problems. The most tricky story problem will be awarded with an incentive. Students will be encouraged to solve page # 54 & 55 individually.
- The next three periods will be used to complete the revision exercise and test.

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# **Unit 3: Fractions**

# **Common Fractions**

# Period required: 2

**SLOs:** Students will be able to:

- Express the fractions 10 figures and vice versa.
- Match the fractions with related figures.
- **Resources:** Fraction wall, marker, scissors, scale, coloured charts, pencil.

# Methodology:

**<u>Recap:</u>** Teacher will review the term fraction. She will assess the prior knowledge of the students by asking about fraction.

**Oracy:** Teacher will share objective of the day with the students.

### **Routine:**

• Teacher will make it clear to the students that fraction is a number that describes the relationship between a part and a whole. She will show fraction wall to the student. She will guide the students to cut the equal strips of different colours. Label the first strip whole





Teacher will recall denominator and numerator by asking questions from the students. Which is the denominator and numerator is  $\frac{1}{4}$ 

Why they are called so?

- Teacher will explain page # 62.
- Page # 63 will be done in C.W.
- Page # 64 will be given as H.W.

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# **Proper & Improper Fraction**

### **Period required: 2**

**<u>SLOs</u>**: Students will be able to:

- Recognize proper and improper fractions.
- Differentiate between proper and improper fraction.
- **Resources:** Apple /cake, knife, flash cards.

## **Methodology:**

**Recap:** Teacher will reinforce the concept of "Fractions" and its uses.

**Oracy:** Teacher will share objective of the day.

## **Routine:**

- Teacher will show an apple or a cake to the students and will ask them about its fraction.
- Definitely students will be able to recognize it as whole.
- Teacher will write the fractions on the board. Then she will cut it into half.
- She will ask the students and will write the fraction on the board 1/2 Similarly she will cut it into further halves 1/4 , 1/8, 1/16
- Now she will start eating the apple and will revise the fraction as well.
- Teacher will reinforce that there are two types of fractions.
  - ✓ Proper Fraction
  - ✓ Improper Fraction

#### 1. Proper fraction

• A fraction is said to be proper fraction if its numerator is smaller than the denominator.





#### 2. Improper fraction

• The fraction is said to be improper fraction if its numerator is greater than or equal to the denominator.



- Teacher will explain page # 65 to the students.
- After board practice and concept clarity students will be asked to do page # 66 individually.

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# **Equivalent Fractions**

### Period required: 2

**SLOs:** Students will be able to:

- Identify equivalent fractions from the given figure.
- Write three equivalent fractions from the given fraction.

**Resource:** Fraction bars, fraction circles, Manipulatives .

#### Methodology:

**<u>Recap:</u>** Teacher will recall the types of fraction.

**Oracy:** Teacher will share objective of the day with the students.

### **Routine:**

- Teacher will use fraction models to make the students master equivalent fractions. She will use fraction bars and fraction circles.
- Teacher will introduce equivalent fractions as the fractions of same value but numerators and denominators.



1/2, 2/4, 4/8 these fractions have different numerator and denominator but have the same value



So 1/2, 2/4, 4/8 are equivalent to each other.

• To find the equivalent fraction for any fraction, multiply the numerator and denominator by the same numbers.

**For example:**  $1/3 \ge 2/2 = 2/6$ 

• To find the equivalent fraction for any fraction divide the numerator and denominator by the same number as well.

 $\begin{array}{rcl} \underline{\mathfrak{G}}^{2} & = & \underline{2} \\ \overline{\mathfrak{R}}_{1} & & 1 \\ \underline{3} & = & \underline{\mathfrak{R}}_{1}^{1} & = & \underline{1} \\ 6 & & \overline{\mathfrak{R}}_{2} & & 2 \end{array}$ 

• Page # 68 will be explained by the teacher. Further exercises will be done for reinforcement.

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# **Comparing Fractions**

### Period required: 2

**<u>SLOs</u>**: Students will be able to:

• Compare fractions with same denominators using symbols <, > or =

**Resource:** Fraction bars, flash cards of signs.

### Methodology:

**<u>Recap:</u>** Teacher will recall the signs by showing the flash cards to the students.

**Oracy:** Object of the day will be shared with the students.

## **Routine:**

• Teacher will explain the students that when fractions have the same denominator, the larger fraction is the one with the larger numerator. If the numerators are the same, the fractions are equivalent fractions.

- Make it clear to the students that check the numerators if the denominators are the same then the fraction with the greater numerator are the greater fraction.
- Teacher will write different fractions on the board and will invite the students to put the signs of addition or subtraction or equal to.
- Page # 70 & 71 will be explained by the teacher.



Page # 72 will be assigned as H.W.

# **Addition of Fractions**

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### **Period required: 3**

**SLOs:** Students will be able to:

- Add two fractions with same denominators.
- Represent addition of fractions through figures.
- **Resource:** Manipulatives

### Methodology:

**<u>Recap:</u>** Teacher will recall addition by solving addition sums on the board.

**Oracy:** She will share objective of the day with the students.

### **Routine:**

- Teacher will I interlink the addition with the fractions.
- She will guide the students about the formula of addition of fraction.
- Sum of fractions with like denominators = <u>Sum of the numerators</u> Common denominator.
- Teacher will explain page # 72 & 73
- Page # 72 will be guided to students to solve individually.

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# Subtraction of Fraction

## Period required: 3

**SLOs:** Students will be able to:

- Subtract fractions with same denominators.
- Represent subtraction of fractions through figures resources.

#### Methodology:

- **Recap:** Teacher will recall the subtraction method through sums of subtraction on the board.
- **Oracy:** Teacher will share objective of the day with the students,



#### **Routine:**

- Teacher will show fraction bars or pictures of different fractions. Most preferably use manipulatives like cake, chocolate bar or pizza to reinforce fraction.
- Teacher will use a chocolate bar to subtract fractions. Suppose that a student has a chocolate bar with 12 pieces. He has eaten 4 out of  $12 \frac{4}{12}$  how many are left with him

 $\frac{12}{12} - \frac{4}{12}, \frac{08}{12}$ 

- Teacher will practice different fractions with the students through the formula.
- Difference of two fractions with like denominator =

Difference of the numerators Common denominator

- Teacher will explain page # 74 & 75 to the students.
- More board practice will be done. Then students will be able to solve page # 75 and 76 independently.
- Next three periods will be used for the revision exercise and test.