

Class: VII	Subject: Mathematics	Day:1	Time duration:40 min
Name of the lesson/ unit	CH-9 RATIONAL NUMBER		
Topic/lesson	Rational Numbers		
Learning Objective	- Define rational numbers. - Rational numbers between two rational numbers.		
Expected learning outcomes:	Student will be able to - Recall the fraction , integers , whole number & natural numbers. - Define Rational Number. - List the Rational numbers between two Rational Numbers. - Find equivalent Rational Numbers.		
Common misconception (if any):	- They don't remember $q \neq 0$ - Not multiply the same number in the numerator and denominator. - Writing whole number instead of rational number between two rational numbers.		
Prerequisite knowledge:	Fractions and Integers (How to find equivalent fractions)		
Assessment of qualifying knowledge:	Board Test and Extra Sums		
Transaction methodology			
Starter/ warm up:Visualisation & sharing need of Rational Numbers(Verbal) (5Min)	Teacher will divide the students in groups of four and ask them to write natural numbers, whole numbers, fraction, integers on chits provided and then collect them all in a clear polythene. She will call two to three students and ask them to take out one chit and tell the type of number it is. Sharing the need of Rational Numbers: The distance of 3 Km right of a place is denoted by +3 so distance of 3 km left will be denoted by which integer? How can we represent 750 m in Km? How will you represent 750 m below the seal level? How will you represent 3/4km below the sea level?		
Video: 5 Min	Teacher will show the flipped video of rational numbers.		
Introduction by teacher and N.B work:5 min	After sharing the need of rational numbers she/he will explain what is Rational numbers A Rational number is a number of the form p/q , where p & q are integers and $q \neq 0$.		

Demonstration by the teacher on the board, followed by students work in NB : 5 min Guided practice(Notebook) and discussion : Boardwork : 15 min	2. If a rational number has a positive denominator and the numerator and denominator have no common factor other than 1 , then the number is said to be in standard form. 3. Two rational numbers are equivalent if their standard forms are equal. Teacher will explain the Questions from the book. Students will do questions from book in their notebooks <u>on their own</u> . Teacher will mentor the class. Teacher will discuss the solutions of the questions, students will be called on the board to solve the questions.
Closure/ Plenary Peer discussion followed by independent N.B work (5 Min)	<i>Write d/f between fraction and rational numbers by making a Comparison chart in your N.B.</i> A number of the form a/b, where “a” and “b” are whole numbers, and b is not equal to zero is known as fraction. ... On the other hand, A rational number is a number that can be written in the form p/q, where p and q are integers and $q \neq 0$.
Home Learning	From book Assignment will be given
Resources	NCERT Book of Mathematics for Class VII Filpped video



Khaitan Public School,Sahibabad

Class: VII	Subject: Mathematics	Day:2	Time duration:40 min
Name of the lesson/ unit	CH-9 RATIONAL NUMBER		
Topic/lesson	Rational Numbers		
Learning Objective	- To locate rational numbers on number line. - Compare rational numbers.		

Expected learning outcomes:	Student will be able to • Locate the Rational Number on the number line. • Write rational numbers in standard form. • Compare the rational numbers. • Arrange rational numbers in ascending & descending order.
Common misconception (if any):	• In standard form they forgot to write the negative sign with numerator. • Without finding L.C.M , arrange the rational numbers in ascending or descending order. • Not making equal gaps number line. • While comparing ,first rational numbers should be written in standard forms
Prerequisite knowledge:	Fractions on number line and how to compare fractions.
Assessment of qualifying knowledge:	Board Test and Extra Sums
Transaction methodology	
Starter/ warm up: Questioning (5 Min)	Teacher will ask if we want to find into how many parts we can cut 1 m rope into what's the answer? Then teacher can draw a number line on board showing 1 and 2 .And now ask if its length of wire .How many parts are there in between 1 and 2?And thus relate that between two numbers infinite number of rational numbers can exist.
Questioning Verbal:10 Mins	Teacher will ask following questions to the students and discuss the misconception. Choose the correct statement(s). I. Negative of $\frac{3}{2}$ is $\frac{-3}{-2}$ II. $\frac{1}{2} = -\frac{1}{2}$ (A) Only I (B) Only II (C) I and II (D) Both are wrong How many rational numbers are in between 1 and 5? (A) Three (2, 3, 4) (B) One (Only average of 1 and 5) (C) Infinitely many Two points A and B are marked on a number line as shown in the figure. If the value of B is $\frac{7}{3}$ then which of the following values of A is/are possible. (A) $\frac{9}{4}$ (B) $-\frac{6}{3}$ (C) $\frac{7}{2}$ (D) Both (A) and (B) (E) None of these <i>Demonstration by the teacher on the board, followed by students</i> Teacher will explain the Questions from the book.

work in NB : 10 min Guided practice (Notebook) and Boardwork: 20 min	Students will do Questions from book in their notebooks on their own . Teacher will mentor the class. Teacher will discuss the solutions of the questions, students will be called on the board to solve the questions.
Closure/ Plenary: Collaborative work (3 Min)	Teacher will ask the class to recap the concept with their peer in the class and summarize it.
Home Learning	From book Assignment will be given
Resources	NCERT Book of Mathematics for Class VII Filpped video



Khaitan Public School, Sahibabad

Class: VII	Subject: Mathematics	Day:3	Time duration:40 min
Name of the lesson/ unit	CH-9 RATIONAL NUMBER		
Topic/lesson	Addition & Subtraction of Rational numbers		
Learning Objective	Addition and Subtraction of rational numbers.		
Expected learning outcomes:	Student will be able to • Write additive inverse. • Add & Subtract the rational numbers.		
Common misconception (if any):	• Addition & Subtraction without making like rational number. • Subtracting without changing sign of bracket. • Wrong Comprehension • Calculation Error		
Prerequisite knowledge:	Addition and subtraction of fractions		

Closure/ Plenary (Notebook work after peer discussion): (5 Min)	<i>Teacher will ask students to discuss the problem with their peer and solve in the notebook.</i> <i>What should be added to $-11/24$ to make $-5/36$?</i>
Home Learning	From book Assignment will be given
Resources	NCERT Book of Mathematics for Class VII Filpped video



Khaitan Public School,Sahibabad

Class: VII	Subject: Mathematics	Day:4	Time duration:40 min
Name of the lesson/ unit	CH-9 RATIONAL NUMBER		
Topic/lesson	Multiplication and Division of Rational numbers		
Learning Objective	Multiply and Divide rational numbers.		
Expected learning outcomes:	Student will be able to • Write multiplicative inverse. • Multiply & Divide the rational numbers.		
Common misconception (if any):	• Wrong cancellation of numerator and denominator.		
Prerequisite knowledge:	Multiply and divide fractions.		
Assessment of qualifying knowledge:	Board Test and Extra Sums		
Transaction methodology			
Starter/ warm up: Questioning(Verbal) (5 Min)	Teacher will ask the following question and will record the answers on the board given by the students.		

	In order to get a number that is greater than 1, the rational number $\frac{2}{5}$ should be multiplied with: (A) $\frac{2}{5}$ (B) $\frac{6}{15}$ (C) $\frac{3}{2}$ (D) None of these What is the value of $\frac{6}{7} \times \frac{2}{3}$? (A) $\frac{9}{7}$ (B) $\frac{8}{21}$ (C) $\frac{5}{7}$ (D) $\frac{4}{7}$
Questioning & discussion(Verbal):5 min Demonstration by the teacher on the board, followed by students work in NB : 15min Guided practice:20 min	Teacher will ask some questions :- What is multiplicative inverse of 2? What is multiplicative inverse of rational number ? Teacher will explain and students will write in the notebook. # Multiplicative inverse(or Reciprocal) of a rational number p/q is q/p Eg : $4/5 = 5/4$ # For rational numbers $\frac{p}{q}$ and $\frac{r}{s}$, we define multiplication as $\frac{p}{q} \times \frac{r}{s} = \frac{p \times r}{q \times s}$ # For rational numbers $\frac{p}{q}$ and $\frac{r}{s}$, we define division as $\frac{p}{q} \div \frac{r}{s} = \frac{p}{q} \times \frac{s}{r}$ Multiplicative inverse of $\frac{r}{s} = \frac{s}{r} \times \frac{r}{s}$ Teacher will explain the Questions from the book. <u>Students will do Question from the book in their notebooks on their own .</u> Teacher will mentor the class. Teacher will discuss the solutions of the questions, students will be called on the board to solve the questions
Closure/ Plenary (Notebook work): (5 Min)	Teacher will ask students to draw a content map of the chapter in their notebook.
Home Learning	From book Assignment will be given

Resources	NCERT Book of Mathematics for Class VII Filpped video
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