

CLASS – VI
LESSON PLAN
CHAPTER-12: RATIO AND PROPORTION

Unit	Ratio and Proportion
Class Transaction	Total: 6 periods (approx. 40 min each)
Pre-requisite for the course	This lesson requires 1. Basic knowledge of fractions, lowest form, equivalent fractions 2. Knowledge of finding the solutions using unit quantity.
Assessment of qualifying knowledge	1. Written test 2. Lab activity 3. HW notebook
Objective	Students would be able to compare two quantities using ratio and proportion thereby inculcating competencies like collaboration, critical thinking and creativity
Learning Outcomes	<u>KNOWLEDGE-</u> <i>Students will develop the ability to understand</i> 1. The comparison of two quantities using ratio. 2. The method of finding unknown value in a proportion. 3. The unitary method. SKILLS and COMPETENCIES- <i>Students would be able to</i> 1. Develop the ability to compare quantities by ratio and proportion. 2. Perform numerical skills like unitary method and develop critical thinking and collaboration in the process.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- <i>Brain Storming-</i>The class would start with a discussion on what the students have already learnt in the previous classes and hence what is it that they would learn now. They would also be told the significance of the topic that they would be studying. <i>Introduction of the topic-</i> ppt and Digital Content would be shared <i>Guided practice followed by Independent Practice-</i> NCERT questions to be discussed in the classroom. Techniques to be used: Quiz

	Daily Practice Problem MCQ Peer Assessment Case Studies Lab Activities Any Other						
Resources	Text Book: NCERT text book for Mathematics Reference Book CBSE Exemplar						
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks. H.W. notebooks to be marked as per the given plan: <i>Assessment Parameters:</i> The total marks for the activity is 10 marks On time submission.....2 mark Presentation/ Neatness.....2 mark Content.....6 marks It is also advised that the students come to the class with proper background knowledge of the topic under discussion. They can refer to the resources stated above.						
Assessments	Through Pen Paper Test Students will be assessed creatively and critically <table> <tr> <td>4 UNIT TESTS</td> <td>25 Marks each</td> </tr> <tr> <td>HALF YEARLY EXAMINATION</td> <td>80 Marks</td> </tr> <tr> <td>ANNUAL BOARD EXAMINATION</td> <td>80 Marks</td> </tr> </table> INTERNAL ASSESSMENT 20 Marks - Note Book Submission 10 Marks - Lab Practical (Subject Enrichment) 10 Marks Through lab Practical Students are assessed for Collaboration, Character building, Character Building	4 UNIT TESTS	25 Marks each	HALF YEARLY EXAMINATION	80 Marks	ANNUAL BOARD EXAMINATION	80 Marks
4 UNIT TESTS	25 Marks each						
HALF YEARLY EXAMINATION	80 Marks						
ANNUAL BOARD EXAMINATION	80 Marks						
Addressing Classroom Diversity	Due to various social backgrounds and multiple intelligences, the classroom might be a diverse arena. The following techniques can be used for various groups: <i>For gifted students:</i> Encouragement for referring other resources <i>For weak students:</i>						

	• Buddy help to be provided • Provide grade-up classes <i>For differently abled students:</i> • Ignore spelling mistakes and formulae, if not written • Call parents at regular intervals • Provide grade-up classes • Encourage and motivate them at every level.
Marks	The weightage would be given by CBSE.
ASSESSMENT QUESTIONS	Q1. Are 4, 6,8,10 in proportion? Justify your answer. Q2. If $7:13 = 20:x$, then find x. Q3. Answer the following: (i) A man gave Rs 17 to his son and Rs 34 to his daughter. Find the ratio of their shares. (ii) Rajesh has two ropes. The shorter one measures 63 cm and the longer one measures 4 m 41 cm. Find the ratio of the longer to the shorter in the simplest form (iii) Express 250 g : 1 kg in its simplest form. Q4. Give four equivalent ratios of 5:7. Q5. There are 160 students in class VI, out of them 75 are girls and the remaining are boys. Find the ratio of: (i) boys to girls. (ii) boys to total students. (iii) girls to total students. Q6. A goldsmith mixes gold and copper in the ratio 5 : 8. Another goldsmith mixes these in the ratio 7 : 2. Which quality is better?

DAY	ONE
Objective	Enhance ability to compare quantities and use appropriate terminology related to ratio thereby developing the art of communication and critical thinking.
Assessment of qualifying knowledge	Quiz and knowledge testing on ratio.
Learning Outcomes	<u>KNOWLEDGE</u>- Students will know and identify proportion by finding equivalent fractions. <u>SKILLS and COMPETENCIES</u> Students would be able to Reason effectively and critically find the value of unknown term in a proportion.
Transaction Methodology (The teacher can use the mentioned	Transaction would proceed in the following manner- Anticipatory Set: 10 min KWC CHART Facilitator will ask few questions to introduce the topic 1) What is a fraction?

techniques, wherever applicable, and can use any other too.)	2) What are equivalent fractions? 3) What is numerator, denominator? 4) What if denominator is less than numerator, etc. Discussion of topic through Collaborative Learning: <u>15 min</u> <u>Inquiry based learning</u> (Critical Thinking THINK PAIR AND SHARE) <u>Learner will introduce the topic with the help of KWC CHART</u> Students would be asked to write equivalent fractions and rewrite them in the form of ratio. The facilitator would take rounds and ensure that each learner is engaged. Guided practice: <u>10 min</u> The students will solve the questions from NCERT book, solved examples before Ex 12.1 in their notebook in the class with the help of their facilitator. The facilitator would take rounds and help the students in solving the questions. Independent Practice: Students will go through the solved examples before Ex 12.1 of NCERT text book. Closure: <u>5 min</u> A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Mathematics Reference Book CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Oral Test (5 minutes)
DAY	TWO
Objective	Affective: Students will attain mastery on the problems based on ratio.
Assessment of qualifying knowledge	Independent practice
Learning Outcomes	<u>AFFECTIVE-</u> <i>Students will attain the mastery on the problems based on ratio.</i> <u>SKILLS and COMPETENCIES</u> <i>Students would be able to Reason effectively and critically and will acquire mastery on ratios and will further relate to it their daily life.</i>
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- <u>A quick recap on the previous day learning (5 mins)</u> Discussion of topic through Collaborative Learning: <u>15 min</u> <u>Inquiry based learning</u> (Critical Thinking Head the Number) <u>Learner will solve the exercise in different groups.</u> Guided practice: <u>10 min</u> The students will solve the questions from NCERT book, solved examples before Ex 12.1 in their notebook in the class. The facilitator would take

	rounds and help the students in solving the questions. Independent Practice: Students will go through the solved examples before Ex 12.1 of NCERT text book. Closure: <u>5 min</u> A short video on ratios for recapitulation.
Resources	Text Book: NCERT text book for Mathematics Reference Book CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Independent practice/ Head the Number.
DAY	THREE
Objective	Students will know and Demonstrate the ability to calculate the unknown quantity in a proportion in collaborative manner .
Assessment of qualifying knowledge	Independent practice
Learning Outcomes	KNOWLEDGE- <i>Students will know and Demonstrate</i> the ability to calculate the unknown quantity in a proportion. SKILLS and COMPETENCIES- <i>Students will be able to apply the knowledge appropriately, in collaboration</i> with each other.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Recapitulation: <u>5 min</u> Brainstorming on the previously taught concept would be done. Discussion of topic through Collaborative Learning: <u>15 min</u> (Critical Thinking, Collaboration, THINK PAIR AND SHARE) An oral quiz will be taken and students will be asked to identify various quantities with the same unit that can be compared. Guided practice: <u>15 min</u> The students, with the help of the facilitator, will solve the questions from NCERT book of Exercise – 12.2 in their notebook in the class with the help of their facilitator. The facilitator would ensure that each student tries to be independent at the work as well as be under the teacher's guidance. Independent Practice: Students will complete the remaining HW parts of Exercise 12.2 in their Math HW notebook. Students who would difficulty in solving the problem would solve with the help of their buddies. Closure: <u>5 min</u> A short video to revise the learnt concept.
Resources	Text Book: NCERT text book for Mathematics Reference Book CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.

Assessments	Independent Practice. (5 minutes)
DAY	FOUR
Objective	Students will be able to attain mastery on the problems based on proportion in collaborative manner and will use the concept in real life .
Assessment of qualifying knowledge	Written questions on comparing of quantities using proportion. HEAD THE NUMBER
Learning Outcomes	<u>AFFECTIVE</u>- Students will attain the mastery on the problems related to Proportion. <u>SKILLS and COMPETENCIES</u>- Students will be able to apply the knowledge appropriately, will attain the mastery on proportion in collaboration with each other.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Recapitulation: 5 min A quick review on the previous Discussion of topic through Collaborative Learning: 15 min (Critical Thinking, Collaboration, THINK PAIR AND SHARE) Transaction/ Guided practice: 15 min The students, will work in pairs and able to attain mastery on the problems of proportion, if faces any difficulty with the help of the facilitator, will solve the questions from NCERT book of Exercise – 12.2 in their notebook . The facilitator would ensure that each student tries to be independent at the work as well as be under the teacher’s guidance. Independent Practice: Students will complete the remaining HW parts of Exercise 12.2 in their Math HW notebook. Students who would difficulty in solving the problem would solve with the help of their buddies. Closure: 5 min A short video to revise the learnt concept.
Resources	Text Book: NCERT text book for Mathematics Reference Book CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Independent Practice. (5 minutes)
DAY	FIVE
Objective	To solve the questions of Ex- 12.3 based on unitary method
Assessment of qualifying knowledge	Independent Practice.
Learning Outcomes	<u>KNOWLEDGE</u>- Students will develop the ability to understand the concept of unitary method to find the solution of day today problems. <u>SKILLS and COMPETENCIES</u> - Students would be able to critically apply the concept of unitary method in given situations and collaboratively apply it.

Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Recapitulation: 5 min Oral test on the previous concept would be taken up. Discussion of topic through Collaborative Learning: 15 min (Critical thinking Think pair and share) Exercise 12.3 would be discussed and students would solve different questions per group and then the questions would be crosschecked. Digital content would be used. The facilitator would take rounds and help students with their doubts. Guided Practice: 15 min The students will solve the questions from NCERT book of Exercise – 12.3 in their notebook in the class with the help of their teacher. The teacher would ensure that each student tries to be independent at the work as well as be under the teacher’s guidance. Independent Practice: Students will complete the remaining HW parts of Exercise 12.3 in their Math HW notebook. Closure: 5 min A short video to recapitulate.
Resources	Text Book: NCERT text book for Mathematics Reference Book CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Independent Practice (5 minutes)
DAY	SIX
Objective	To solve the questions of Ex- 12.3 based on unitary method
Assessment of qualifying knowledge	Independent Practice BY Jeopardy
Learning Outcomes	<u>AFFECTIVE</u> - Students will attain the mastery to understand the concept of unitary method to find the solution of day today problems. <u>SKILLS and COMPETENCIES</u> - Students would be able to critically apply the concept of unitary method in given situations and collaboratively apply it.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Recapitulation: 5 min A Quick review on the previous day concept . Practice of topic through Collaborative Learning: 15 min (Critical thinking Head the number) Learners will attain mastery on the problems based on unitary method Exercise 12.3 would be discussed and students would solve different questions per group using head the number and then the questions would be crosschecked. The facilitator would take rounds and help students with their doubts. The learners will be ask to look for the real life situations where they use unitary method.

	Guided Practice: <u>15 min</u> The students will solve the questions from NCERT book of Exercise – 12.3 in their notebook in the class with the help of their teacher. The teacher would ensure that each student tries to be independent at the work as well as be under the teacher’s guidance. Independent Practice: Students will complete the remaining HW parts of Exercise 12.3 in their Math HW notebook. Closure: <u>5 min</u> Jeopardy.
Resources	Text Book: NCERT text book for Mathematics Reference Book CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Independent Practice/ jeopardy/ head the number (5 minutes)