

LESSON PLAN
MATHEMATICS VIII
CH 16 PLAYING WITH NUMBERS

Unit	Playing with numbers (Chapter 16: Playing with numbers)
Class Transaction	Total: 2 periods (approx. 40 min each)
Pre-requisite for the course	This lesson requires 1. Basic knowledge of addition 2. Knowledge of basic multiplication 3. Knowledge of multiples. 4. Basic knowledge of division.
Assessment of qualifying knowledge	1. Written test 2. Lab activity 3. HW notebook
Objective	Learners will be able to:- 1. Recall knowledge of various types of numbers. 2. understand generalized form of numbers 3. solve reasoning based question like puzzles thereby inculcating competencies like collaboration, critical thinking and creativity
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will develop the ability to understand</i> • reasoning based question like puzzles • divisibility of different numbers <u>SKILLS and COMPETENCIES</u>- <i>Students would be able to</i> • Develop the ability to analyze and differentiate between different divisibility rules. • Perform numerical skills like addition and multiplication 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.)	Strategies used- think pair share, graphic organizer, brain storming Dimensions of learning- D1, D3 Transaction would proceed in the following manner- Brain Storming-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 1. 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 5 marks On time submission.....1 mark Presentation/ Neatness.....1 mark Content.....3 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>20 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 10 Marks - Note Book Submission 05 Marks - Lab Practical (Subject Enrichment) 05 Marks Through lab Practical Students are assessed for Collaboration, Character building, Character Building	4 UNIT TESTS	20 Marks each	HALF YEARLY EXAMINATION	80 Marks	ANNUAL BOARD EXAMINATION	80 Marks
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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> • HOTS questions to be done • 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
1. Check the divisibility of 21436587 by 9. 2. Check the divisibility of 152875 by 9. 3. If the three digit number $24x$ is divisible by 9, what is the value of x? 4. Check the divisibility of 2146587 by 3. 5. Check the divisibility of 15287 by 3.

DAY	ONE
Objective	To enhance knowledge of students for solving various puzzles by addition and multiplication.
Assessment of qualifying knowledge	knowledge testing on addition and multiplication.
Learning Outcomes	<u>KNOWLEDGE</u>- Students will know and identify various operation to be applied. <u>SKILLS and COMPETENCIES</u> Students would be able to Reason effectively and critically apply various operation.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies used- Inductive deductive reasoning, , brain storming Dimensions of learning- D1, D3 Transaction would proceed in the following manner- Anticipatory Set: 10 min Facilitator will ask few questions to introduce the topic 1. alphanumeric puzzles, 2. generalized form Discussion of topic through Collaborative Learning: 15 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Students would be asked to observe various questions in form of puzzles and identify operation to be applied. The facilitator would take rounds and ensure that each learner is engaged. Guided practice: 10 min The students will solve the questions from NCERT book, solved examples before Ex 16.1 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 do rest of the questions of Ex 16.1 of NCERT in their notebook. Closure: 5 min 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 3. 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	To enhance knowledge of students for various divisibility tests.

Assessment of qualifying knowledge	Written questions on multiples and division.
Learning Outcomes	<u>KNOWLEDGE</u>- Students will know and Demonstrate the divisibility tests on given numbers <u>SKILLS and COMPETENCIES</u>- Students will be able to differentiate and classify various divisibility test of different numbers.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies used- Inductive deductive reasoning Dimensions of learning- D1, D3 Transaction would proceed in the following manner- Recapitulation: 5 min Brainstorming on the previously taught concept would be done. Anticipatory Set: 5 min Facilitator will ask few questions to introduce the topic 1. divisible and multiples, 2. unit and ten's place Discussion of topic through Collaborative Learning: 10 min (Critical Thinking, Collaboration) An quick quiz will be taken to check their knowledge and students will be asked to write different divisibility tests and solve questions. Guided practice: 15 min The students, with the help of the facilitator, will solve the questions from NCERT book of Exercise – 16.2 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 16.2 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 oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Mathematics Reference Book 4. CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks
Assessments	Oral quiz (5 minutes)