

CLASS – IX
LESSON PLAN
CHAPTER-14: STATISTICS

Unit	Ch-14 Statistics
Class Transaction	Total: 5 periods (approx. 40 min each)
Pre-requisite for the course	This lesson requires 1. Basic knowledge of constructing angles. 2. Knowledge of constructing bisector of line. 3. Knowledge of bisecting angle.
Assessment of qualifying knowledge	1. Written test 2. Lab activity 3. HW notebook
Objective	Students would be able to understand the term statistics and the need of collection of data, to develop the skill of representing data graphically as bar graph, histogram, frequency polygon, to learn about measure of central tendency i.e. Mean, Median, Mode for raw /discrete data and to apply the knowledge in solving the problems, thereby inculcating competencies like communication, character, collaboration, critical thinking, citizenship and creativity
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will develop the ability to</i> 1. Collect data. 2. Present data. 3. Prepare frequency table 4. Graphical representation of data-bar graph, Histogram, frequency polygon, 5. Measures of central tendency_Mean <u>SKILLS and COMPETENCIES</u>-<i>Students would be able to</i> 1. Represent data on graph. 2. Find central tendency 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- Graphic Organizers, Inductive deductive reasoning, think pair share, muddiest point discussion Dimensions of learning- D1, D2, D3 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 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 4 UNIT TESTS 20 Marks each HALF YEARLY EXAMINATION 80 Marks ANNUAL BOARD EXAMINATION 80 Marks 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
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> - Spiral Level 3 questions to be done - Encouragement for referring other resources <i>For weak students:</i> - Spiral Level 1 to be completed - 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. The following observations have been arranged in ascending order: 11, 12, 14, 18, $x + 2$, $x + 4$, 30, 32, 35, 41. If the median of the data is 24, find x. 2. Mean of 25 observations was found to be 28.4. But, later on it was found that 96 was misread as 69. Find the corrected mean. 3. The following data gives the number of children in 20 families : 5, 2, 3, 3, 1, 2, 2, 4, 2, 5, 4, 1, 1, 2, 3, 4, 1, 1, 2, 3. Make a frequency table. 4. The mean of 16 numbers is 8. If 2 are added to every number, what will be the new mean? 5. Find the mode and median of the following data: 27, 23, 31, 25, 29, 35, 39, 23, 36, 23, 29, 23.

DAY	ONE
Objective	Enhance ability to accurately recognize and use appropriate terminology related to collection and representation of data and developing the art of communication and critical thinking .
Assessment of qualifying knowledge	Quiz and knowledge testing on data and frequency table and central tendency.
Learning Outcomes	KNOW-KNOWLEDGE: Specific use of Mathematical instruments for constructing bisector of line segment. SKILLS and COMPETENCIES: Critical Thinking and Problem Solving : - Effectively analyzes and evaluates major alternative points of view, Effectively identifies and ask significant questions that clarify various points of view and leads to better solutions (Makes judgments and decisions, solve problems)
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- Graphic Organizers, Inductive deductive reasoning 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 • What is data? • What are the different ways of collecting data? • How to represent data? • How to compare large data Discussion of topic through Collaborative Learning: 15 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Students would be asked to collect, represent and compare data. 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 14.1 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 14.1 of NCERT text book. Closure: 5 min A short oral test would be taken to check proper assimilation of the topic discussed. (Graphic Organizers)
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.

Assessments	Oral Test (5 minutes)
DAY	TWO
Objective	Enhance ability to accurately recognize and use appropriate terminology related to collection and representation of data and developing the art of communication and critical thinking .
Assessment of qualifying knowledge	Quiz and knowledge testing on data and frequency table and central tendency.
Learning Outcomes	KNOW-KNOWLEDGE: Specific use of Mathematical instruments for constructing bisector of line segment. SKILLS and COMPETENCIES: Critical Thinking and Problem Solving : - Effectively analyzes and evaluates major alternative points of view, Effectively identifies and ask significant questions that clarify various points of view and leads to better solutions (Makes judgments and decisions, solve problems)
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- Inductive deductive reasoning, think pair share Dimensions of learning- D1, D2, D3, Transaction would proceed in the following manner- Anticipatory Set: 10 min Facilitator will ask few questions to introduce the topic • What is data? • What are the different ways of collecting data? • How to represent data? • How to compare large data Discussion of topic through Collaborative Learning: 15 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Students would be asked to collect, represent and compare data. 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 14.2 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 14.2 of NCERT text book. Closure: 5 min A short oral test would be taken to check proper assimilation of the topic discussed. (Jigsaw)
Resources	Text Book: NCERT text book for Mathematics Reference Book 1. CBSE Exemplar
Self Study, Home	Independent Practice: Students would do the given questions in their H.W.

Work, Assignments	notebooks.
Assessments	Oral Test (5 minutes)

DAY	THREE
Objective	Enhance ability to accurately recognize and use appropriate terminology related to collection and representation of data and developing the art of communication and critical thinking .
Assessment of qualifying knowledge	Quiz and knowledge testing on data and frequency table and central tendency.
Learning Outcomes	KNOW-KNOWLEDGE: Specific use of Mathematical instruments for constructing bisector of line segment. SKILLS and COMPETENCIES: Critical Thinking and Problem Solving : - Effectively analyzes and evaluates major alternative points of view, Effectively identifies and ask significant questions that clarify various points of view and leads to better solutions (Makes judgments and decisions, solve problems)
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- Graphic Organizers, Inductive deductive reasoning Dimensions of learning- D2, D3 Transaction would proceed in the following manner- Anticipatory Set: 10 min Facilitator will ask few questions to introduce the topic • What is data? • What are the different ways of collecting data? • How to represent data? • How to compare large data Discussion of topic through Collaborative Learning: 15 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Students would be asked to collect, represent and compare data. 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 14.3 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 14.3 of NCERT text book. 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 1. 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	FOUR
Objective	Enhance ability to accurately recognize and use appropriate terminology related to collection and representation of data and developing the art of communication and critical thinking .
Assessment of qualifying knowledge	Quiz and knowledge testing on data and frequency table and central tendency.
Learning Outcomes	KNOW-KNOWLEDGE: Specific use of Mathematical instruments for constructing bisector of line segment. SKILLS and COMPETENCIES: Critical Thinking and Problem Solving : - Effectively analyzes and evaluates major alternative points of view, Effectively identifies and ask significant questions that clarify various points of view and leads to better solutions (Makes judgments and decisions, solve problems)
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- Muddiest point discussion Dimensions of learning- D3 Transaction would proceed in the following manner- Anticipatory Set: 10 min Facilitator will ask few questions to introduce the topic • What is data? • What are the different ways of collecting data? • How to represent data? • How to compare large data Discussion of topic through Collaborative Learning: 15 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Students would be asked to collect, represent and compare data. 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 14.4 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 14.4 of NCERT text book. Closure: 5 min A short oral test would be taken to check proper assimilation of the topic discussed.

	(Think pair share)
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.
Assessments	Oral Test (5 minutes)