TOPIC	Data Handling
SUB-TOPIC	The Measures of Central Tendency
DURATION	35 Minutes

CURRICULAR GOALS	CG-5 Collects, organises,represents (graphically and in tables), and interprets data/information from daily-life experiences.
COMPETENCIES AS PER NCF/NIPUN BHARAT	Remember	
	Understand	
	Apply	
	Analyse	C-5.1 Collects, organises, and interprets the data using measures of central tendencies such as average/mean, mode, and median.
	Evaluate	
	Create	
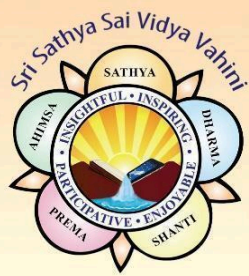
Strategies As Per NEP	Story
Learner Centric Techniques used	NA
Teacher's Tool Kit	NA
SDG(Sustainable Development Goals)	SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
Inter/Multidisciplinary elements	NA

Technology aids	EM_TA_Story_Central Tendencies.pptx
Teaching Learning Materials (TLM)	A chart with scores of the 10 batsmen
Learning Aids	NA
Assessment (As, For, Of)	EM_LA_Worsheet_Central Tendencies.pdf (AOL)
References	NA

Previous Knowledge required	Recording and organising data, pictograph

Brief Description: This module presents a **story strategy for the concept 'The measures of Central Tendency' in "the chapter Data Handling"**. An interactive story in the form of PPT has been provided. Watching the PPT and simultaneously working on the problem in an interactive manner will help students get an in depth understanding of the topic. This is followed by an **IA** (Interesting Aside) **and QA**(Questions to Assess) involving the use of **data handling in real life situations**.
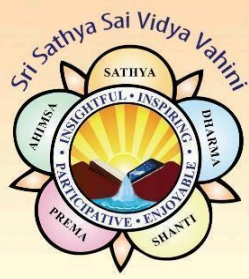
1)MS_The search for the top five batsmen
Specific Learning Outcome: Students will be able to **analyse** the use of mean and median to solve a situation presented through a story.
Duration : 30 minutes

**Resources Required:** Chalk/whiteboard, TLM[Pre-prepared list of cricket scores(Score Chart)].

[Story outline for teacher's reference- In a small village in India, where cricket echoes in every lane, the annual cricket tournament is the highlight of the year. Amidst this excitement, two friends, Raju and Meena, dream of forming their unbeatable cricket team. With the guidance of Dadi, who believes in the power of wisdom and strategy, they embark on a mission to choose their teammates wisely. Their tool? The mathematical wonders of mean, median, and mode.

As they collect data on runs scored by potential team members in the last five matches, Raju and Meena realise that numbers hold stories and strategies within them. It's not just about the highest scores but about consistency, reliability, and sometimes, the extraordinary.

NOTE : Please do not give away the outline of the story as it will take away the joy of the strategy. It is just meant for teachers' understanding.]

Narrate the story with the PPT that depicts the story "The search for the top five Batsmen"- A Tale of Cricket and Numbers.
[Please look into the Notes Section of every slide while preparing for instructions on how you can transact in the class]
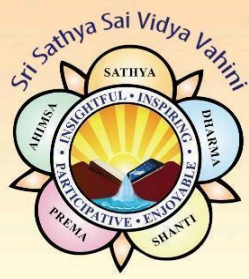
While you are asking the children to help Meena and Raju calculate the Mean of all the players, you can

Player Name	Match 1 Runs	Match 2 Runs	Match 3 Runs	Match 4 Runs	Match 5 Runs
Arjun	45	44	46	35	40
Vijay	1	140	37	17	10
Rohan	48	45	50	47	55
Priya	12	15	13	15	25
Neha	10	5	15	20	25
Suresh	5	10	20	25	25
Anita	35	30	40	45	50
Ravi	40	35	45	50	55
Gautam	70	75	72	55	73
Kiran	21	18	32	27	37

display the TLM(Chart with the following score table for their reference when required.

Diving Into Central Tendencies

Mean: The arithmetic mean, or simply the mean, is calculated by adding all the numbers in a set and then dividing by the count of numbers. It represents the average score and gives Raju and Meena insight into the overall performance.

Formula: Mean

$$\text{Mean} = \frac{Sum\ of\ all\ scores}{Number\ of\ scores}$$

Example: The arithmetic mean of Arjun's runs would be

$$= \frac{45+44+46+35+40}{5}$$

$$= \frac{210}{5}$$

$$= 42$$

Guide the students to calculate the Mean of all the players and as and when children calculate the mean, elicit from them and put it on the chart.

Median: The median is the middle value when a data set is ordered from the least to the greatest. It helps them find a player's typical performance level, unaffected by unusually high or low scores.
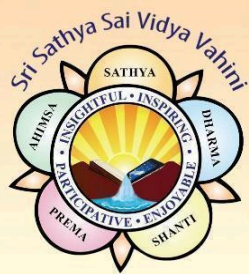
Mode: The mode is the most frequently occurring score in the set, revealing the most common performance level among the players. It helps in understanding consistency.

Example: Let's find the mode of Priya's score. The scores are 12, 15, 13, 15, 25. The score that repeats is 15. Hence the mode here is 15.

Conclusion: Through this activity, students not only learn to calculate central tendencies but also understand their practical application in making strategic decisions, much like forming a cricket team. This exercise illuminates the beauty of mathematics in real life, showing that numbers can indeed shape strategies and outcomes.

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2)IA_Central Tendencies_Mean
Specific Learning Outcome: Students will be able to apply the concept of the arithmetic mean to new situations, like estimating and predicting outcomes in various fields.
**Duration :** 5 minutes
Content :
Note to the teacher: The teacher will narrate the story of the Arithmetic Mean and Sir Francis Galton.

The Story of the Arithmetic Mean and Sir Francis Galton:

The arithmetic mean, or simply the mean, has been used for centuries, but one of its more interesting applications was in the work of Sir Francis Galton, a cousin of Charles Darwin and a polymath in his own right. Galton used the mean in the late 19th century to analyse biological and social phenomena, but one of his lesser-known experiments involved a weight-judging competition at a livestock fair. Participants guessed the weight of an ox, and, remarkably, Galton found that the mean of all guesses was closer to the ox's true weight than most individual guesses, including those of experts. This demonstrated the 'wisdom of the crowd' and showcased the mean's power in aggregating information to arrive at accurate conclusions, a principle still used in various fields today, from stock market predictions to estimating software project timelines.
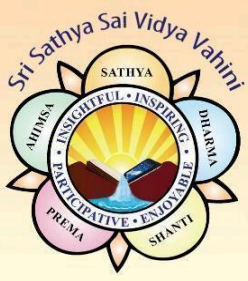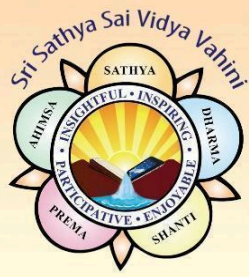
3)QA_Central Tendencies

Specific Learning Outcome: Students will be able to determine the central tendencies of a given set of data by applying the formulae of Mean, Median and Mode.

[Note to the teacher: The teacher will provide the worksheet **"EM_LA_Worksheet_Central Tendencies.pdf"** to the students as a take-home assignment to reinforce their understanding of the lesson. It can also be taken up in the next class period to assess the understanding**.]**

Main Script
Make concepts simple and easy to understand

Inquisitive Questions
Use questions as means to promote curiosity and critical thinking

Value Content
Integrate Human Values seamlessly into curriculum

Day to Day Relevance
Help children understand practical relevance of every topic

Suggested Activity
Promote learning by doing

Interesting Asides
Satisfy children's hunger to know more

Questions to Assess
Make assessment interactive and effective

MS · IQ · DD · IA · QA · SA · VC

Classroom