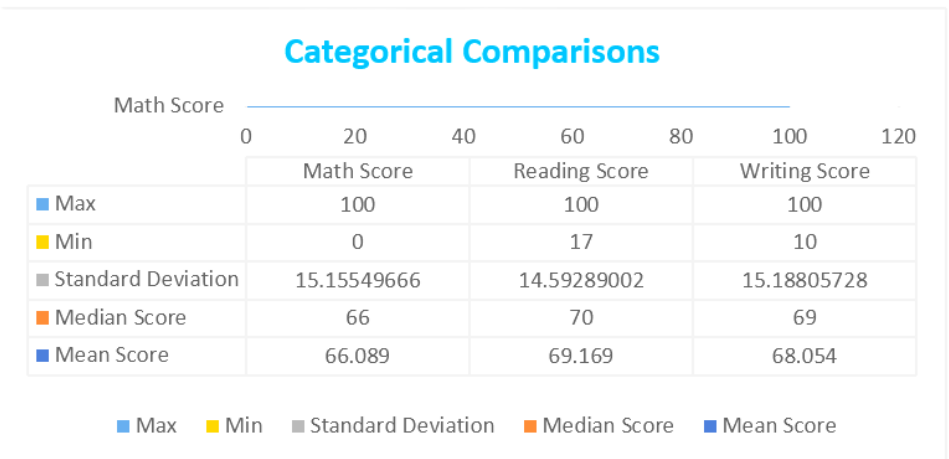
1. Summary Statistics of Student Scores

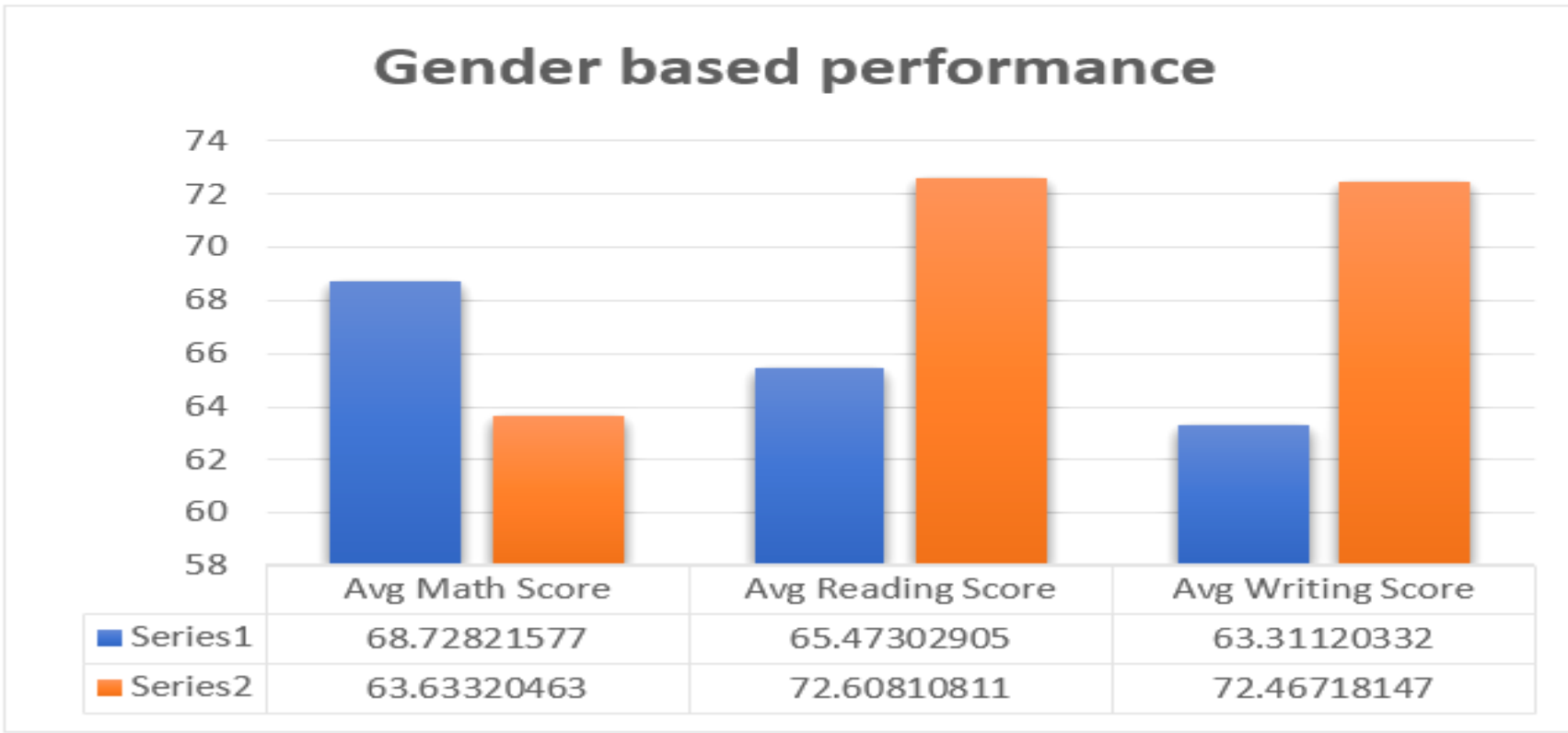
Subject	Mean Score	Median Score	Standard Deviati	Min	Max
Math Score	66.089	66	15.15549666	0	100
Reading Score	69.169	70	14.59289002	17	100
Writing Score	68.054	69	15.18805728	10	100



- ✓ This Table presents Key statistical measures (Mean, median, Standard Deviation, Min, Max) for Math, reading, writing scores.
- ✓ Math scores have the lowest mean (66.089), while Reading scores have the highest (69.169).
- ✓ The variability (Standard Deviation) is similar across subjects, with writing having the highest (15.188).
- ✓ A visual Comparison is provided below the table, categorizing scores based on different statistical measures.

2. Gender-Based Performance Comparison

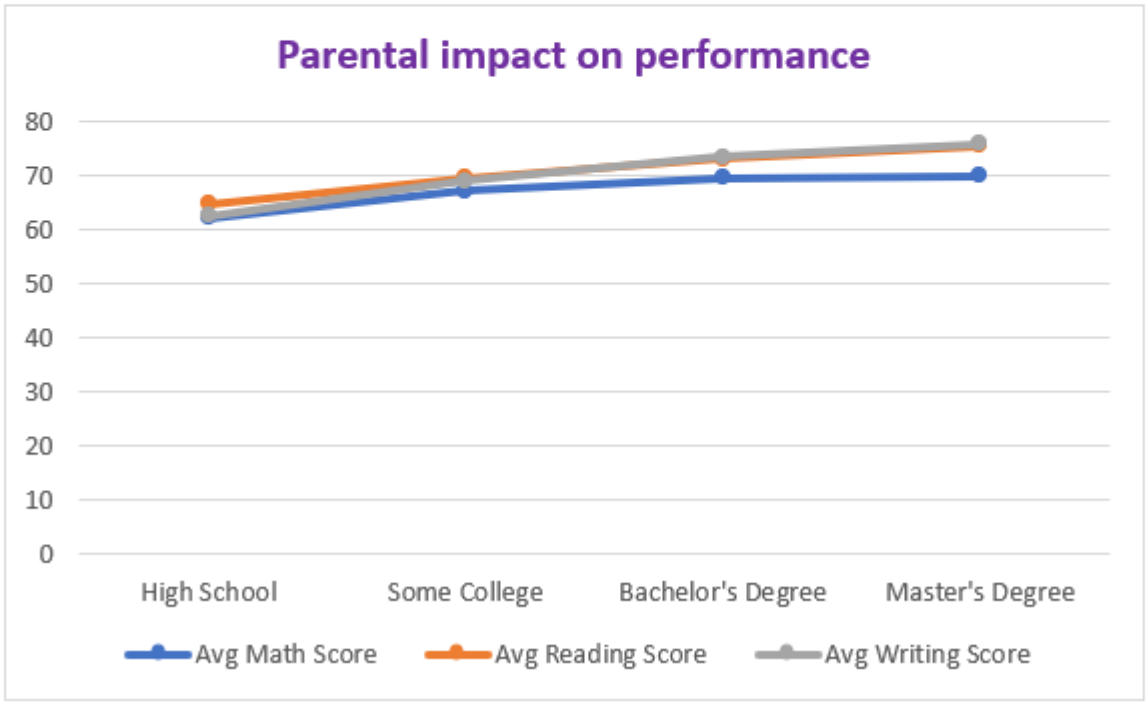
Gender	Avg Math Score	Avg Reading Score	Avg Writing Score
male	68.72821577	65.47302905	63.31120332
female	63.63320463	72.60810811	72.46718147



- A table and bar chart compare average scores by Gender.
- Males have higher average math scores (68.73 VS 63.63) While Females outperform in reading (72.61 VS 65.47) and Writing (72.47 VS 63.31).
- The bar chart visually emphasizes these performance differences across subjects.

3. Impact of Parental Education on Performance

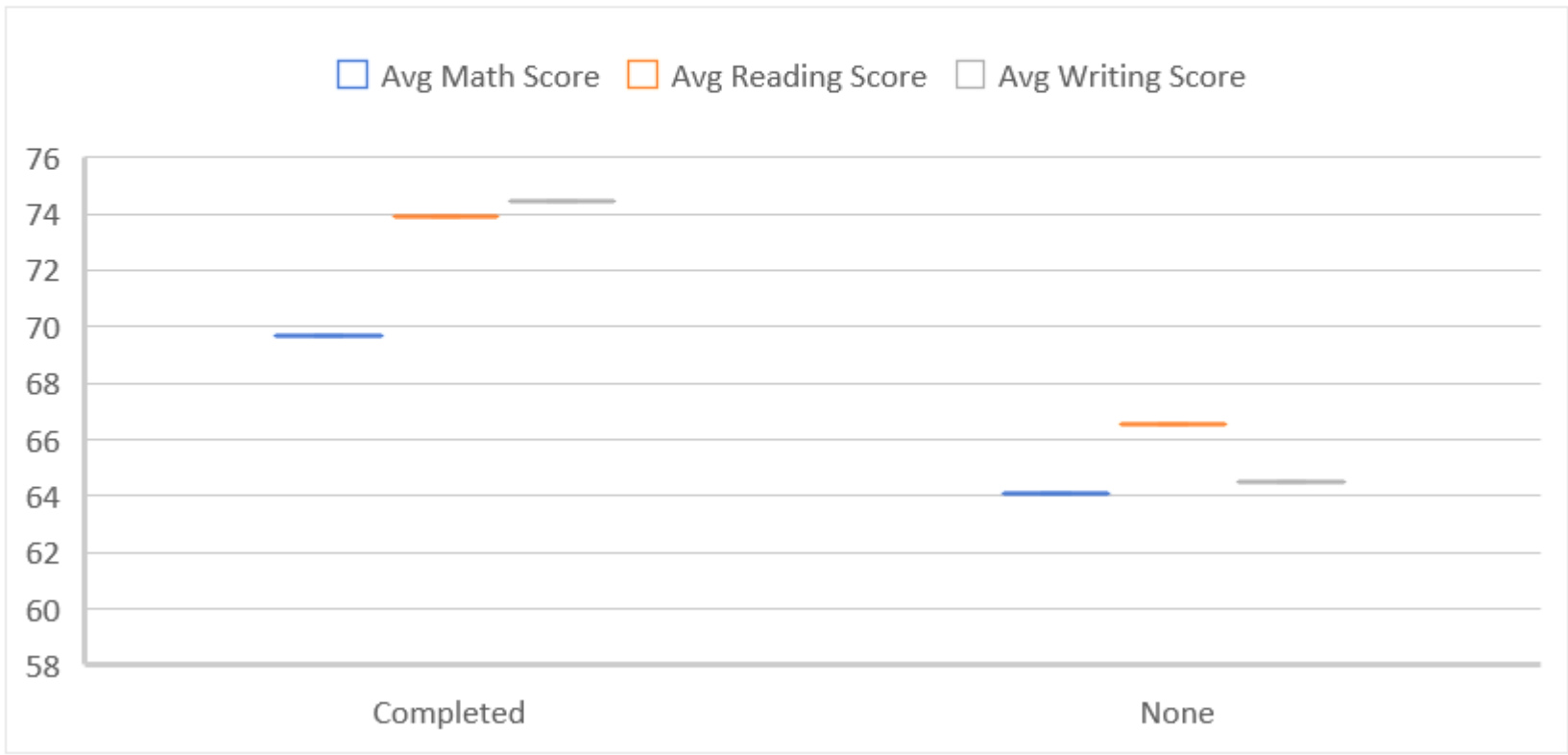
Parental Level of Education	Avg Math Score	Avg Reading Score	Avg Writing Score
High School	62.1377551	64.70408163	62.44897959
Some College	67.12831858	69.46017699	68.84070796
Bachelor's Degree	69.38983051	73	73.38135593
Master's Degree	69.74576271	75.37288136	75.6779661



- This section analyses how the educational background of parents influences student's academic performance.
- The data compares average Math, Reading, writing scores across different parental education levels, ranging from high school to master's degrees.
- Findings indicate that students with parents having higher education levels tend to score better in all subjects, reflecting a positive correlation between parental education and student performance.
- A line chart visually represents the trend, showing consistent improvement with higher education levels.

4. Test Preparation Course Impact on Scores

Test Preparation Course	Avg Math Score	Avg Reading Score	Avg Writing Score
Completed	69.69553073	73.89385475	74.41899441
None	64.07788162	66.53426791	64.5046729

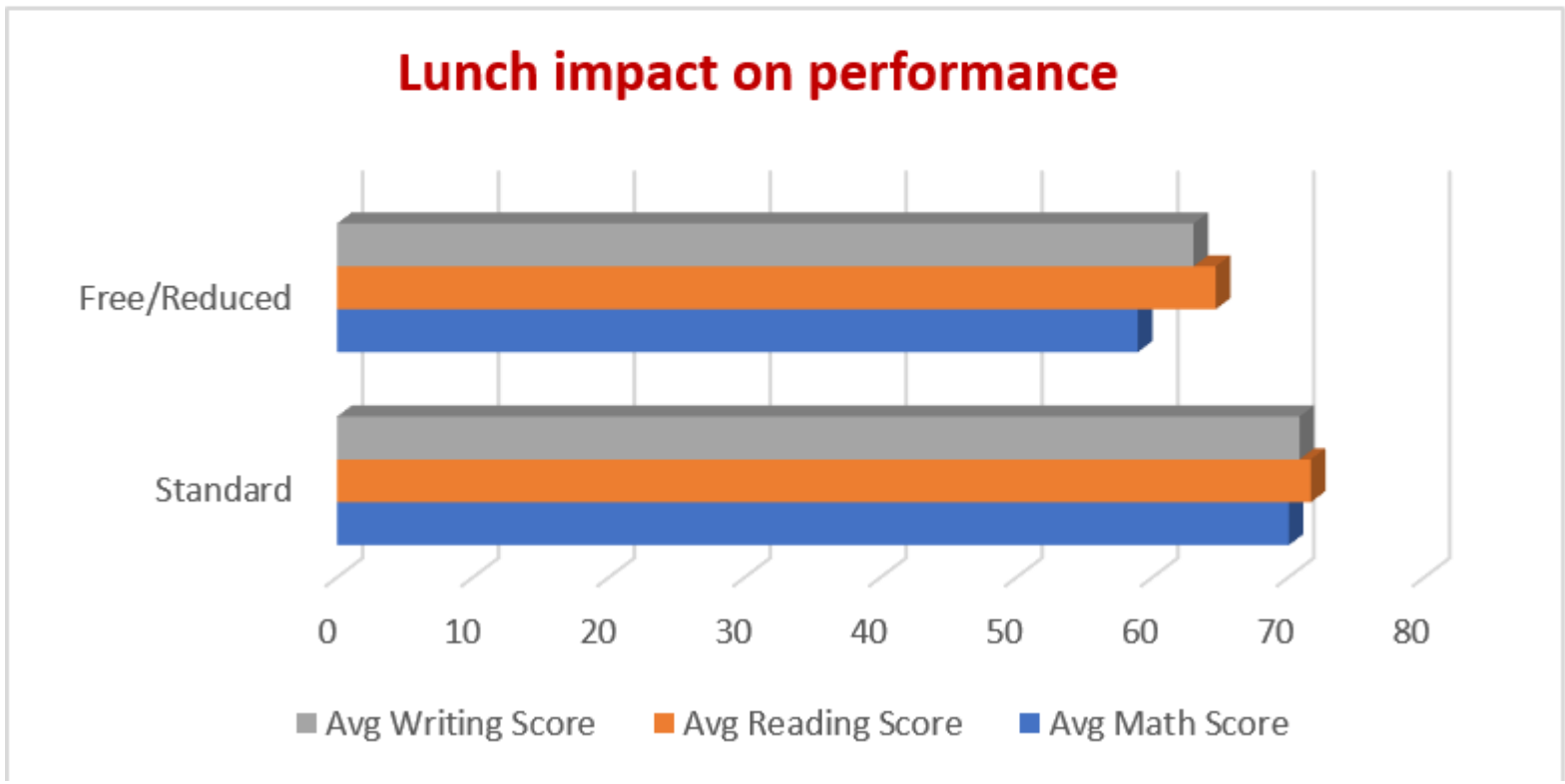


- This Analysis evaluates the effect of completing a test preparation course on student's scores.

- Students who completed the course achieved higher average scores in Math, Reading and Writing compared to those who did not.
- The visual representation emphasizes the difference, Highlighting the importance of structured test preparation in improving academic outcomes.
- These insights can help educational institutions encourage test preparation programs for better student performance.

5. Lunch Program Impact on Performance

Lunch Type	Avg Math Score	Avg Reading Score	Avg Writing Score
Standard	70.03410853	71.65426357	70.82325581
Free/Reduced	58.92112676	64.65352113	63.02253521



- This section examines how participations in different lunch programs (Standard VS Free/Reduced) affects student's academic performance.
- Students on a standard lunch program tend to score slightly higher in Math, Reading, and Writing compared to those on free or reduced lunch plans.
- The bar chart visually contrasts the scores, showing a potential link between nutrition and academic performance.
- This analysis can guide policymakers in addressing nutritional support for students from different economic backgrounds.

How many students attended in exam by their gender

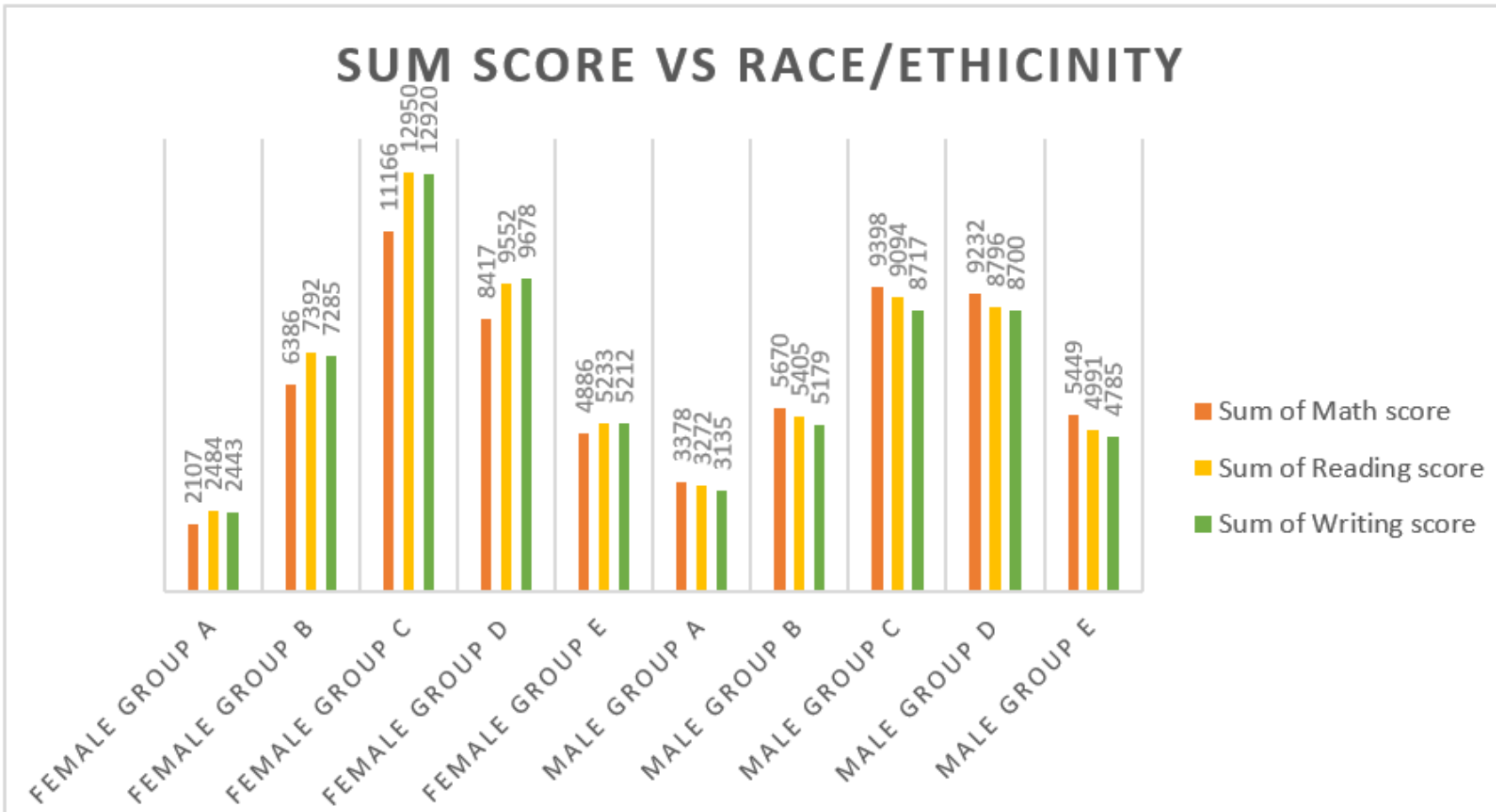
Gender	No of students
Male	482
Female	518
Totall No of Students	1000

- The data presents the number of Male and Female students who participated in the exam.
- The total count of students is 1,000, with 482 Males and 518 Females.
- The insights can help in understanding gender-based participation gaps in educational outreach.

How many students are Excellent or needs improvement

Performance	Number
Excellent	358
Needs improvement	642
Totall=-	1000

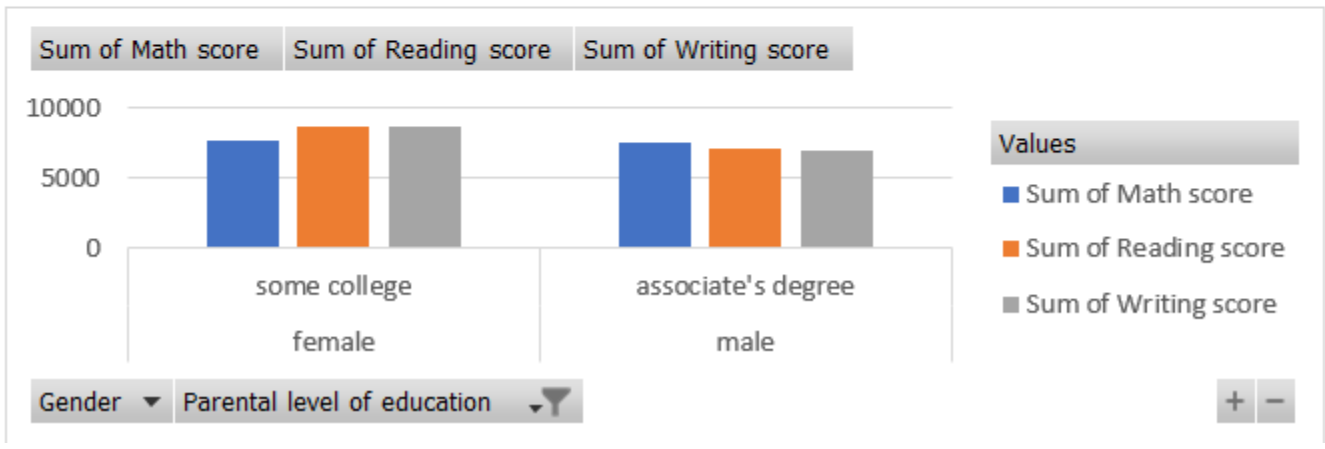
- Students categorized based on their performance levels: "Excellent" and "Needs Improvement".
- Out of 1,000 students 358 are classified as excellent, While 642 need improvement.
- This segmentation helps educators identify areas where additional support and resources may be required.



- This section analyses the total scores of students across different racial and ethnic groups.
- The bar chart presents the sum of Math, Reading, and Writing scores for each group, providing insights into performance trends.
- The analysis Helps identify disparities in academic performance based bon ethnicity, which can be useful for targeted educational interventions.

Top 1% by score

Row Labels	Sum of Math score	Sum of Reading score	Sum of Writing score
female	**7718**	**8679**	**8738**
some college	7718	8679	8738
male	**7501**	**7148**	**6933**
associate's degree	7501	7148	6933
Grand Total	**15219**	**15827**	**15671**



- ✓ This table highlights the highest-performing students based on their Math, Reading, and Writing scores.
- ✓ The data is segmented by gender and parental educational level, showing how these factors influence top-performing students.
- ✓ The analysis can help educators recognize high-achieving students and understand their backgrounds for further academic support.

Top 10% by Math score

Row Labels	Sum of Math score
female	**7718**
some college	7718
male	**7501**
associate's degree	7501
Grand Total	**15219**

Top 10% by Writing score

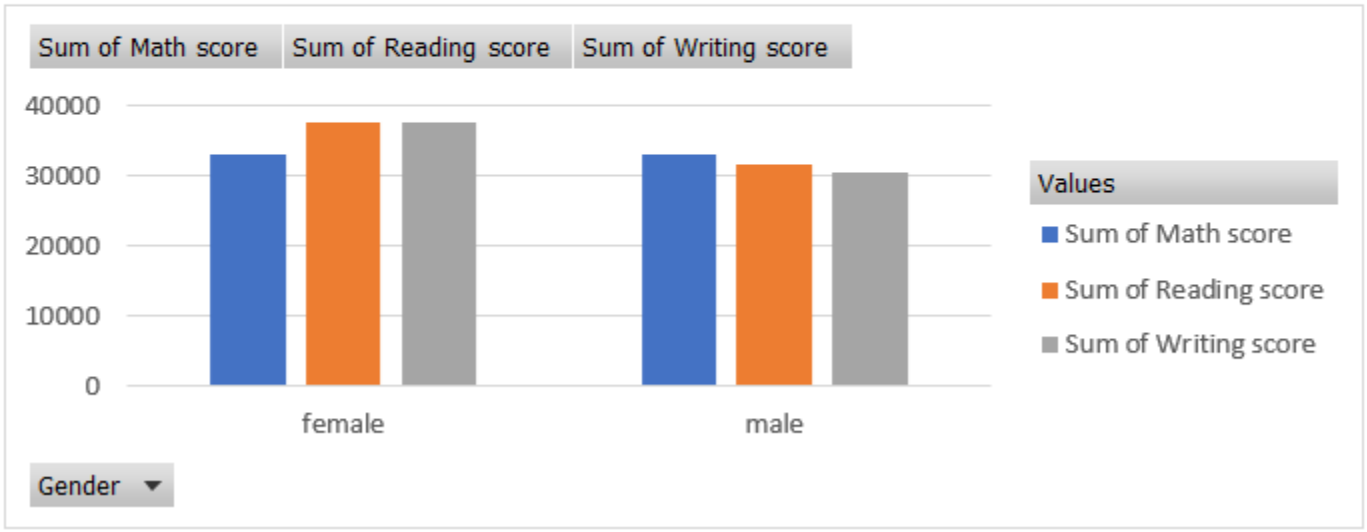
Row Labels	Sum of Writing score
female	**8738**
some college	8738
male	**6933**
associate's degree	6933
Grand Total	**15671**

Top 10% by Reading score

Row Labels	Sum of Reading score
female	**8679**
some coll	8679
male	**7148**
associate'	7148
Grand Total	**15827**

- Separate tables showcase the top 10% of students based on Math, Reading, and Writing Scores.
- Gender and educational level comparisons provide insights into trends among high-achievers in each subject.
- The visual representations help in understanding which groups excel in specific subjects and informs potential strategies for academic enhancement.

Row Labels	Sum of Math score	Sum of Reading score	Sum of Writing score
female	32962	37611	37538
male	33127	31558	30516
Grand Total	**66089**	**69169**	**68054**



- The data provides an aggregate sum of scores across different categories, offering a comprehensive view of student performance distribution.
- The bar charts visualize the total scores in Math, Reading and Writing, aiding in quick comparisons between various groups.
- This section offers valuable insights for stakeholders to identify strengths and areas needing improvement.