SUMMARY STATISTICS

	math_score	reading_score	writing_score	total_score	average_score
Mean	66.089	69.169	68.054	203.312	67.7707
Median	66	70	69	205	68.3333
Variance	229.919	213.166	230.908	1829.44	203.271
Sd	15.1631	14.6002	15.1957	42.772	14.2573

PERFORMANCE BY GENDER

	math_score	reading_score	writing_score	total_score	average_score
Male	63.6332	72.6081	72.4672	208.708	69.5695
Female	68.7282	65.473	63.3112	197.512	65.8375

IMPACT OF PARENTAL EDUCATION

	math_score	reading_score	writing_score	total_score	average_score
bachelor's_degree	69.3898	73	73.3814	215.771	71.9237
some_college	67.1283	69.4602	68.8407	205.429	68.4764
high_school	62.1378	64.7041	62.449	189.291	63.0969
associate's_degree	67.8829	70.9279	69.8964	208.707	69.5691
master's_degree	69.7458	75.3729	75.678	220.797	73.5989

IMPACT OF TEST PREPARATION

Test completed?	math_score	reading_score	writing_score	total_score	average_score
No	64.0779	66.5343	64.5047	195.117	65.0389
Yes	69.6955	73.8939	74.419	218.008	72.6695

SCORE DISTRIBUTION BY RACE

	math_score	reading_score	writing_score	total_score	average_score
group_A	61.6292	64.6742	62.6742	188.978	62.9925
group_B	63.4526	67.3526	65.6	196.405	65.4684
group_C	64.4639	69.1034	67.8276	201.395	67.1317
group_D	67.3626	70.0305	70.145	207.538	69.1794
group_E	73.8214	73.0286	71.4071	218.257	72.7524

Summary Statistics

General Performance: The overall average score across all subjects is 67.77, with a standard deviation of 14.26, indicating moderate variability in student performance. Math scores (mean = 66.09) are ù slightly lower than reading (69.17) and writing (68.05) scores, suggesting math is the most challenging subject on average.

Performance by Gender

Male Students: Males outperform females in reading (72.61) and writing (72.47) with a total average score of 69.57.

Female Students: Females perform better in math (68.73) but fall behind in reading (65.47) and writing (63.31), leading to a lower total average score (65.83).

Insight: This suggests a gender-based disparity in subject strengths, where males excel in literacy skills and females tend to outperform in numerical skills.

Impact of Parental Education

Higher Parental Education Yields Better Scores:

Master's Degree: Students whose parents have a master's degree have the highest scores in all subjects (math: 69.75, reading: 75.37, writing: 75.68), with an average score of 73.60.

High School: Students with parents who completed only high school show the lowest performance (average score: 63.10).

Insight: There is a clear upward trend in student performance as parental education level increases, highlighting the positive impact of parental education on academic outcomes.

Impact of Test Preparation

Test Preparation Boosts Scores:

Students who completed test preparation scored significantly higher across all subjects (math: 69.70, reading: 73.89, writing: 74.42) with an average score of 72.67, compared to those who did not prepare (65.04).

Insight: Test preparation appears to be an effective intervention, particularly for improving reading and writing scores.

Score Distribution by Race

Performance Differences Across Groups:

Group E: This group consistently outperforms others in all subjects (math: 73.82, reading: 73.03, writing: 71.41, average: 72.75).

Group A: Scores are the lowest in all subjects (math: 61.63, reading: 64.67, writing: 62.67, average: 62.99).

Groups C and D: relatively close in performance, with Group D showing slightly higher scores on average.

Insight: Group E appears to have the best academic outcomes, possibly due to socioeconomic or educational factors, while Group A might benefit from targeted academic support.