

# Exploratory Data Analysis Report — Student Performance

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Date: February 5, 2026

## Executive Summary

- Dataset contains 1000 records and 8 features.
- Test preparation significantly improves student performance.
- Reading and writing scores are strongly correlated.
- Parental education level influences academic success.

## Data Quality

- No missing values were detected.
- Data types were already correct.
- No significant outliers requiring removal were found.

## Key Insights

- Students who completed test preparation perform better.
- Reading and writing scores move together.
- Gender differences exist in math performance.

## Visualization Summary

- Chart 1 shows average math score differences by gender.
- Chart 2 shows how parental education relates to average score.
- Chart 3 shows score distribution across lunch types.

## Recommendations

- Encourage test preparation programs.
- Focus support on low-performing lunch groups.
- Further analyze parental education impact.