Summary of Analysis:

This analysis focuses on educational data related to multiple schools in a district. In this analysis, I used Pandas and Jupyter Notebook to examine school and standardized test data. The goal was to provide insights for the school board and the mayor to make informed decisions about school budgets and priorities.

I began by calculating district-wide metrics, including the number of schools, total students, budget, average scores, and passing rates. Further I analyzed each school's performance based on the two broad categories: District & Charter, identifying the top and bottom performers.

Then I looked at grade-level performance, spending per student, school size, and school type to uncover trends and disparities in educational outcomes. This analysis serves as a valuable tool for optimizing resources.

Conclusions and Comparisons:

Impact of School Type on Overall Performance:

The analysis reveals that there are two types of schools in the dataset: "Charter" and "District." One important conclusion drawn from the analysis is that charter schools tend to outperform district schools in terms of academic achievement. While the top 5 schools based on overall% passing are all Charter schools, the Bottom 5 schools with lowest % overall passing are all District Schools.

School Type	Average Math Score	Average Reading Score	% Passing Math	% Passing Reading	% Overall Passing
Charter	83.473852	83.896421	93.620830	96.586489	90.432244
District	76.956733	80.966636	66.548453	80.799062	53.672208

Budget vs. Academic Achievement:

Another noteworthy observation is the relationship between the per student spending range and academic achievement. While it might be tempting to assume that schools with larger budgets perform better academically, the analysis shows that this is not always the case. I split the per student spending range into 4 categories as below. It was quite surprising to see that the schools with the lowest spending range per student had the highest average math & reading scores along with highest overall % passing.

Spending Ranges (Per Student)
<$585
$585-630
$630-645
$645-680

This indicates that the allocation and management of budget resources are critical factors in determining academic success. The educational board should consider conducting a budget analysis to identify areas where resources can be optimized for better outcomes.

In conclusion, this script provides valuable insights into school performance and the influence of school type and budget on academic achievement. By understanding these relationships, educational authorities can make informed decisions to enhance the overall quality of education in the district and allocate funds accordingly.