In the PyCitySchools pandas analysis, we utilized important functions such as .groupby(), .loc() and assigned appropriate bins in order to objectively analyze student performance at the district and individual school level. In this analysis, we were able to conclude certain trends such as:

1. Although it may be expected that with an increased budget per student that test performance would be higher as a result of accessibility to technology and other educational resources, my analysis indicated that the performance was generally higher at schools with lower per student budgets. Notably, the Percent Overall Passing scores was substantially higher in schools with the lowest student budget (<$585, 90.36%) compared to student performance in the highest student budget bracket ($645-$680, 53.52%). This may indicate that student performance may not be directly influenced by the school’s budget per student, but rather other factors outside of this analysis. These factors could include the effectiveness of the lesson plans, the amount of time spent studying per student, and positive or negative relationships between the students and their instructors.
2. When comparing student performance based on school size, the analysis shows that generally speaking schools that are smaller (<1,000 students) to medium sized (1,000-2,000 students) have higher testing score averages and percentages than larger schools in the district (2,000-5,000 students). One may deduce that the student-instructor ratio is smaller at a smaller high school, and therefore students may have a better learning experience resulting from one-on-one connections and more intensive instruction. The student-instructor ratio may be larger at a larger high school, and therefore students are having to share resources and ultimately have less time for the same level of instruction. The district may want to look into other funding for afterschool support programs or additional resources at larger institutions to increase the passing rate. It would be interesting to conduct further analysis to tell whether the smaller schools are mostly charter schools, which often students pay to attend and have better access to resources/materials, whereas district schools often cover larger areas in the community and can include students from different income brackets, and therefore have less accessibility to resources/materials due to the number of students that often attend district schools.

These and other analyses conducted in the PyCitySchools assessment could be beneficial to the city school district in regard to creating an equitable distribution of funds and developing additional tutoring/educational programs in high schools where student performance can be improved.