

The PyCity Schools data analysis gives us a variety of information about student performance in math and reading at the district and school level. Note: all numbers in the analysis have been rounded, actual numbers can be seen in the tables.

At the district level we have a “big picture” idea of overall student performance that spans 15 high schools, over 39,000 students and over \$24 million was spent. We can also see that in regards to math, the students in the district have an average score of 79 and 75% are passing. Whereas reading has a higher average score 82 and 86% of students are passing. However, overall in the district only 65% of students passed BOTH math and reading. This information can be seen below in Table 1.

Table 1: District Summary

	Total Schools	Total Students	Total Budget	Average Math Score	Average Reading Score	% Passing Math	% Passing Reading	% Overall Passing
0	15	39,170	\$24,649,428.00	78.985371	81.87784	74.980853	85.805463	65.172326

We are also given insight into information about the 15 individual high schools. Table 2 shows there are seven schools classified as “District” and eight schools classified as “Charter.” The total student population at each school varies from 427 at Holden High to 4,976 at Bailey High. The school budgets also vary from \$258k at Holden High to \$3.1 million at Bailey High. While Holden High does have the smallest per student budget at #581, the school that spends the greatest amount per student is NOT Bailey High- it is in fact Huang High which spends \$655 per student. The average math score varies from 77% at Johnson High to 84% at Pena High, while the reading variance is comparatively minimal with 80% at Rodriguez High and 84% at Pena High. The percentage of students passing math, reading, as well as math and reading, gives even further insight into student performance. Math has the widest variance of students with 66% passing math at Huang High and 95% passing math at Pena High. Reading has a smaller variance with 79% passing at Ford High School and 97% passing at Griffin High. Analyzing the percentage of students passing both math and reading shows the widest variance with 53% passing at Rodriguez High and 91% passing at Cabrera High.

Table 2: School Summary

School Name	School Type	Total Students	Total School Budget	Per Student Budget	Average Math Score	Average Reading Score	% Passing Math	% Passing Reading	% Overall Passing
Bailey High School	District	4976	\$3,124,928.00	\$628.00	77.048432	81.033963	66.680064	81.933280	54.642283
Cabrera High School	Charter	1858	\$1,081,356.00	\$582.00	83.061895	83.975780	94.133477	97.039828	91.334769
Figueroa High School	District	2949	\$1,884,411.00	\$639.00	76.711767	81.158020	65.988471	80.739234	53.204476
Ford High School	District	2739	\$1,763,916.00	\$644.00	77.102592	80.746258	68.309602	79.299014	54.289887
Griffin High School	Charter	1468	\$917,500.00	\$625.00	83.351499	83.816757	93.392371	97.138965	90.599455
Hernandez High School	District	4635	\$3,022,020.00	\$652.00	77.289752	80.934412	66.752967	80.862999	53.527508
Holden High School	Charter	427	\$248,087.00	\$581.00	83.803279	83.814988	92.505855	96.252927	89.227166
Huang High School	District	2917	\$1,910,635.00	\$655.00	76.629414	81.182722	65.683922	81.316421	53.513884
Johnson High School	District	4761	\$3,094,650.00	\$650.00	77.072464	80.966394	66.057551	81.222432	53.539172
Pena High School	Charter	962	\$585,858.00	\$609.00	83.839917	84.044699	94.594595	95.945946	90.540541
Rodriguez High School	District	3999	\$2,547,363.00	\$637.00	76.842711	80.744686	66.366592	80.220055	52.988247
Shelton High School	Charter	1761	\$1,056,600.00	\$600.00	83.359455	83.725724	93.867121	95.854628	89.892107
Thomas High School	Charter	1635	\$1,043,130.00	\$638.00	83.418349	83.848930	93.272171	97.308869	90.948012
Wilson High School	Charter	2283	\$1,319,574.00	\$578.00	83.274201	83.989488	93.867718	96.539641	90.582567
Wright High School	Charter	1800	\$1,049,400.00	\$583.00	83.682222	83.955000	93.333333	96.611111	90.333333

Table 3 shows us the details of the five highest performing schools based on the percentage of students passing both math and reading. These schools include Cabrera, Thomas, Griffin, Wilson and Pena High. While their overall averages are all consistently in the 83%-84%, they see a greater number of students passing math, reading, and both with scores in the 90 percentiles. It should be noted that all schools in this group are Charter schools.

Table 3: Top 5 Performing Schools

School Name	School Type	Total Students	Total School Budget	Per Student Budget	Average Math Score	Average Reading Score	% Passing Math	% Passing Reading	% Overall Passing
Cabrera High School	Charter	1858	\$1,081,356.00	\$582.00	83.061895	83.975780	94.133477	97.039828	91.334769
Thomas High School	Charter	1635	\$1,043,130.00	\$638.00	83.418349	83.848930	93.272171	97.308869	90.948012
Griffin High School	Charter	1468	\$917,500.00	\$625.00	83.351499	83.816757	93.392371	97.138965	90.599455
Wilson High School	Charter	2283	\$1,319,574.00	\$578.00	83.274201	83.989488	93.867718	96.539641	90.582567
Pena High School	Charter	962	\$585,858.00	\$609.00	83.839917	84.044699	94.594595	95.945946	90.540541

Table 4 shows the five lowest performing schools based on the percentage of students passing both math and reading. We can see here that all five are District schools and while the percentage of students passing reading are steady in the 80-81 percentile, the percentage of students passing math is in the 66 percentile. The lower percentage of students passing math explains the lower overall passing rate which is in the 53-54 percentile.

Table 4: 5 Lowest Performing Schools

School Name	School Type	Total Students	Total School Budget	Per Student Budget	Average Math Score	Average Reading Score	% Passing Math	% Passing Reading	% Overall Passing
Rodriguez High School	District	3999	\$2,547,363.00	\$637.00	76.842711	80.744686	66.366592	80.220055	52.988247
Figueroa High School	District	2949	\$1,884,411.00	\$639.00	76.711767	81.158020	65.988471	80.739234	53.204476
Huang High School	District	2917	\$1,910,635.00	\$655.00	76.629414	81.182722	65.683922	81.316421	53.513884
Hernandez High School	District	4635	\$3,022,020.00	\$652.00	77.289752	80.934412	66.752967	80.862999	53.527508
Johnson High School	District	4761	\$3,094,650.00	\$650.00	77.072464	80.966394	66.057551	81.222432	53.539172

Table 5 shows the average math scores by grade within each school. The most notable piece of information here is that within each school, the math scores are relatively steady between grade levels.

Table 5: Average Math Scores by Grade

	9th	10th	11th	12th
Bailey High School	77.083676	76.996772	77.515588	76.492218
Cabrera High School	83.094697	83.154506	82.765560	83.277487
Figueroa High School	76.403037	76.539974	76.884344	77.151369
Ford High School	77.361345	77.672316	76.918058	76.179963
Griffin High School	82.044010	84.229064	83.842105	83.356164
Hernandez High School	77.438495	77.337408	77.136029	77.186567
Holden High School	83.787402	83.429825	85.000000	82.855422
Huang High School	77.027251	75.908735	76.446602	77.225641
Johnson High School	77.187857	76.691117	77.491653	76.863248
Pena High School	83.625455	83.372000	84.328125	84.121547
Rodriguez High School	76.859966	76.612500	76.395626	77.690748
Shelton High School	83.420755	82.917411	83.383495	83.778976
Thomas High School	83.590022	83.087886	83.498795	83.497041
Wilson High School	83.085578	83.724422	83.195326	83.035794
Wright High School	83.264706	84.010288	83.836782	83.644986

When we look at the average reading scores by grade within each school (table 6), we see a similar story of little variance between grade levels within each school.

Table 6: Average Reading Scores by Grade

	9th	10th	11th	12th
Bailey High School	81.303155	80.907183	80.945643	80.912451
Cabrera High School	83.676136	84.253219	83.788382	84.287958
Figueroa High School	81.198598	81.408912	80.640339	81.384863
Ford High School	80.632653	81.262712	80.403642	80.662338
Griffin High School	83.369193	83.706897	84.288089	84.013699
Hernandez High School	80.866860	80.660147	81.396140	80.857143
Holden High School	83.677165	83.324561	83.815534	84.698795
Huang High School	81.290284	81.512386	81.417476	80.305983
Johnson High School	81.260714	80.773431	80.616027	81.227564
Pena High School	83.807273	83.612000	84.335938	84.591160
Rodriguez High School	80.993127	80.629808	80.864811	80.376426
Shelton High School	84.122642	83.441964	84.373786	82.781671
Thomas High School	83.728850	84.254157	83.585542	83.831361
Wilson High School	83.939778	84.021452	83.764608	84.317673
Wright High School	83.833333	83.812757	84.156322	84.073171

Looking at the math and reading scores by the amount spent per student, we see there is an inverse relationship in two areas- between the per student spending and the average scores, as well as between the per student spending and the percentage of students passing math, reading, and both reading and reading.

Table 7: Scores by School Spending

	Average Math Score	Average Reading Score	% Passing Math	% Passing Reading	% Overall Passing
Spending Ranges (Per Student)					
<\$585	83.455399	83.933814	93.460096	96.610877	90.369459
\$585-630	81.899826	83.155286	87.133538	92.718205	81.418596
\$630-645	78.518855	81.624473	73.484209	84.391793	62.857656
\$645-680	76.997210	81.027843	66.164813	81.133951	53.526855

If we look at the impact of school size on scores (table 8), we see there is an inverse relationship between the average score and the size of the school. However, looking at the passing rates and school size tell another story- here we see that medium sized schools have slightly better passing rates than small schools and significantly better passing rates than large schools.

Table 8: Scores by School Size

	Average Math Score	Average Reading Score	% Passing Math	% Passing Reading	% Overall Passing
School Size					
Small (<1000)	83.821598	83.929843	93.550225	96.099437	89.883853
Medium (1000-2000)	83.374684	83.864438	93.599695	96.790680	90.621535
Large (2000-5000)	77.746417	81.344493	69.963361	82.766634	58.286003

Lastly, table 9 shows us the average scores and passing rates based on school type. This shows Charter schools having significantly higher passing rates over District schools. Given that both types of schools have passing average scores for reading and math, we can conclude then that there is a wider range of individual math and reading scores at district schools over Charter schools that have more students passing math and reading.

Table 9: Scores by School Type

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

In conclusion the data shows several key pieces of information. First, just increasing the spending per student does not directly lead to increased scores or increased passing rates. Second, students at Charter schools more likely to pass both math and reading. Third, District schools have a wider variety of overall scores, so the students who are earning high scores earn very high scores and those who are failing are earning very low scores. Lastly, student's at large schools are less likely to pass math and reading. While the data here does not directly show the reasoning, class size and other factors should be researched.