Exclusivity in Public School

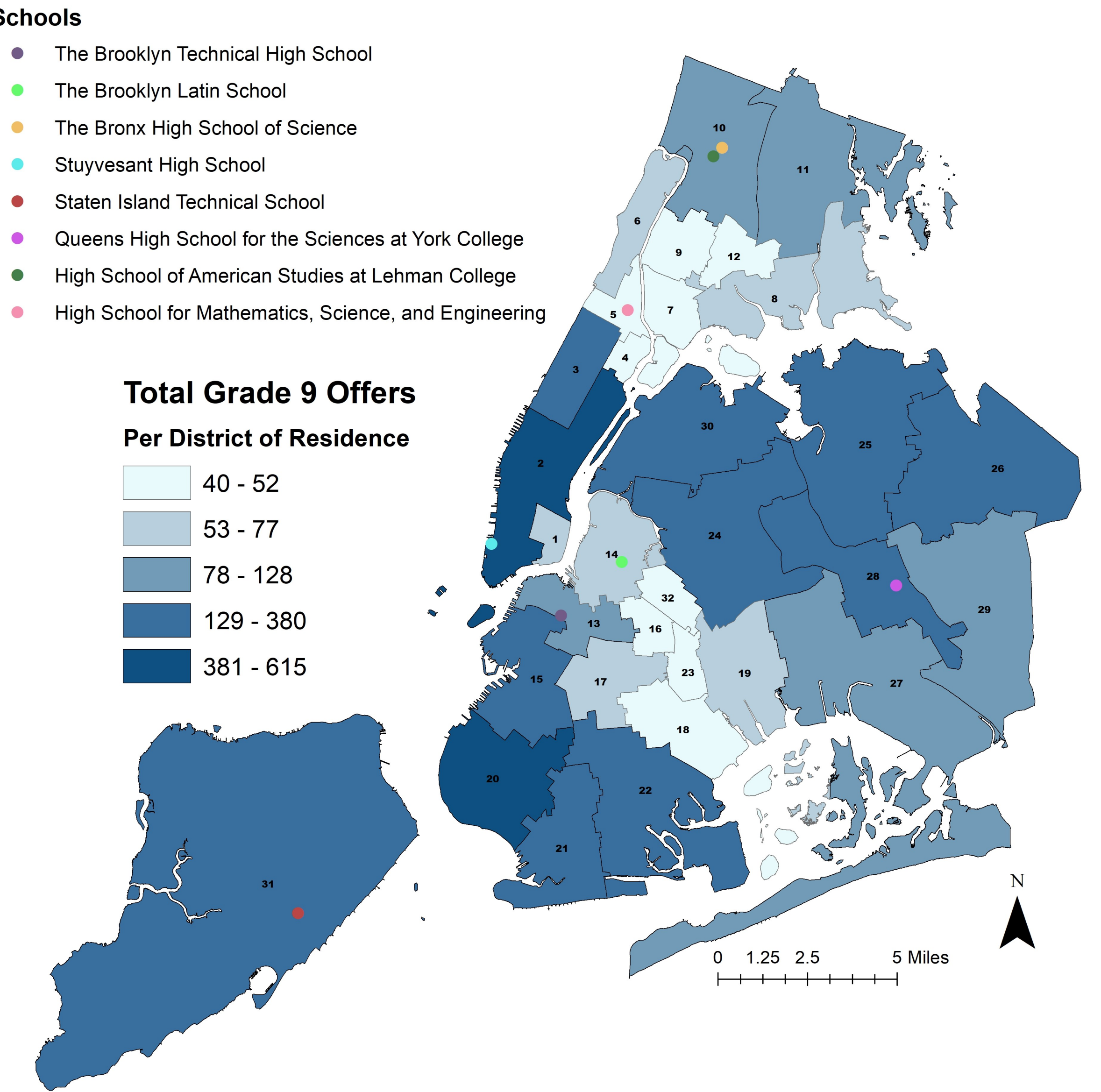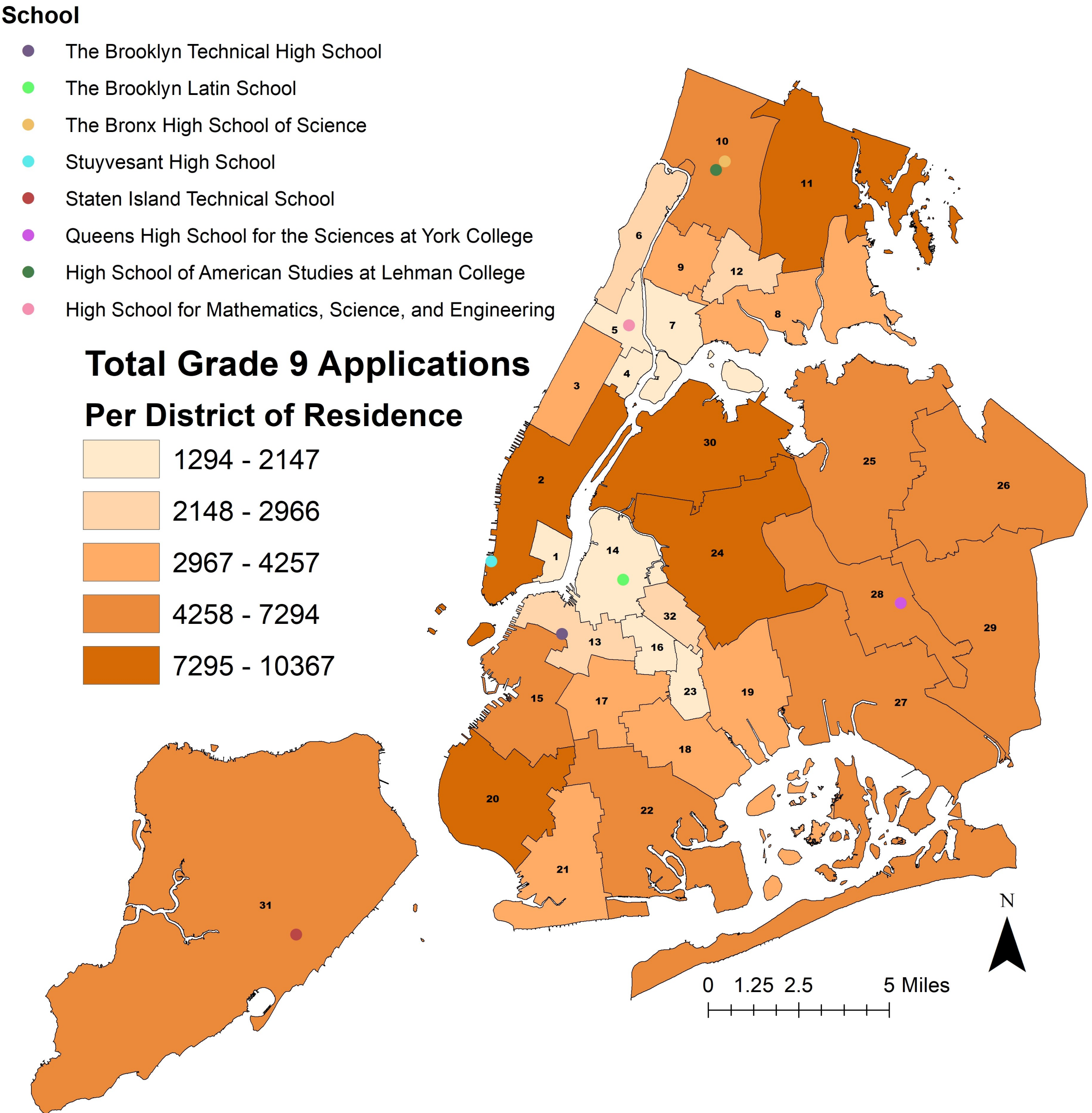## The Geographic Breakdown in New York City's Specialized High Schools

Introduction

New York City has the largest public school system in the country. There are over 1.1 million students enrolled in the system, spread among 1,700 different schools. The city has 542 public high schools, and 8 are categorized as specialized. Although the specialized high schools are public, a rigorous standardized test, known as the SHSAT, determines admissions. To apply, students rank schools by preference, and attach their SHSAT score. Students gain admission if their test score meets the school's cutoff. Due to these strict admissions policies, the specialized high schools are known to struggle with diversity, and typically accept very high percentages of Asian-American and White students. Since the racial demographics of these schools are known to be highly concentrated, this project will examine whether the applications and acceptances are concentrated in certain areas of the city, and will examine this breakdown based on school district of residence.

Methodology

To complete this analysis, application and acceptance data was gathered from the New York City Department of Education (DOE). For each school, the number of applications and acceptances from each residential district (the school district of an applicant's residence), was shown. A map displaying the 32 schools districts, received from NYC Open Data, was joined to this data. To form my argument, 2 maps were created for each specialized school, representing the amount of applications and acceptances from each residential district. Then, an additional 2 maps were created, representing the total number of applications and acceptances in each residential district, for all the specialized schools combined. For each map, the relevant school's location was displayed using XY coordinates, to assist in making a spatial argument. All of these maps were visually analyzed, and the results of the combined maps are shown, along with the individual breakdown of four specialized schools showing the most interesting results.

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GIS 101: Intro to GIS

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Sources: NYC Department of Education InfoHub and NYC Open Data

Coordinate System: NAD 1983 StatePlane New York Long Island FIPS 3104 Feet

Projection: Lambert Conformal Conic

All Specialized Schools

School
- The Brooklyn Technical High School
- The Brooklyn Latin School
- The Bronx High School of Science
- Stuyvesant High School
- Staten Island Technical School
- Queens High School for the Sciences at York College
- High School of American Studies at Lehman College
- High School for Mathematics, Science, and Engineering

Total Grade 9 Applications

Per District of Residence
- 1294 - 2147
- 2148 - 2966
- 2967 - 4257
- 4258 - 7294
- 7295 - 10367

0   1.25 2.5   5 Miles

Schools
- The Brooklyn Technical High School
- The Brooklyn Latin School
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- Queens High School for the Sciences at York College
- High School of American Studies at Lehman College
- High School for Mathematics, Science, and Engineering

Total Grade 9 Offers

Per District of Residence
- 40 - 52
- 53 - 77
- 78 - 128
- 129 - 380
- 381 - 615

0   1.25 2.5   5 Miles

Results

As seen in the maps, there are large disparities in the amount of applications and acceptances per residential district. Some districts, such as 2 and 20, have the highest number of both acceptances and applications, while other districts, have a significantly lower number of applications and acceptances. The results become more interesting after examining the breakdown for individual schools. While some districts consistently have higher application and acceptance numbers, geography is certainly a factor for some individual schools. There is a pattern of clustering, as there tend to be more applications, and therefore, acceptances in districts in closer proximity to school location. This is not the case, however, for all districts. For Brooklyn Latin, districts such as 14, 1, and 16, still lack many applications and acceptances, despite close proximity, and this is also a pattern for other schools.

Limitations

This study does have limitations, as the results would have been more useful if the number of 8th grade students residing in each district was used, allowing the applications and acceptances to be shown as a percentage of the eligible population. When looking at the data, the schools' variation of enrollment size must also be considered. Additionally, some schools are more well known, which could also contribute to differences in the amount of applications, and the distribution per residential district. Finally, if a residential district had 5 or less acceptances, it was marked with an "s," for suppressed. For this project, an "s" was assumed to be 5 acceptances, but in reality, districts in the lowest category of acceptances could actually have much lower numbers.

Conclusions

While the 8 specialized high schools are known for the rigorous SHSAT, and lack of racial diversity, applications and acceptances are also concentrated in certain residential districts. While these results may vary depending on certain schools, some districts consistently have either very high, or very low numbers. There is still, however, much further analysis required to gain a better understanding of this breakdown. Additional useful analysis would include further information about the demographics of each residential district, such as race and socio-economic status. This data could provide an explanation for why and how this breakdown materialized.

Individual Schools

Stuyvesant

Grade 9 Applications
Per District of Residence
- 201 - 303
- 304 - 433
- 434 - 609
- 610 - 1107
- 1108 - 1550

Stuyvesant High School

Grade 9 Offers
Per District of Residence
- 5 - 11
- 12 - 24
- 25 - 52
- 53 - 84
- 85 - 137

Stuyvesant High School

0 1.25 2.5   5 Miles

Brooklyn Latin

Grade 9 Applications
Per District of Residence
- 152 - 309
- 310 - 480
- 481 - 630
- 631 - 851
- 852 - 1190

Brooklyn Latin School

Grade 9 Offers
Per District of Residence
- 5 - 9
- 10 - 14
- 15 - 21
- 22 - 29
- 30 - 70

Brooklyn Latin School

0 1.25 2.5   5 Miles

Queens Sciences

Grade 9 Applications
Per District of Residence
- 127 - 231
- 232 - 340
- 341 - 543
- 544 - 895
- 896 - 1435

Queens High School for the Sciences

Grade 9 Offers
Per District of Residence
- 5
- 6 - 8
- 9 - 11
- 12 - 14
- 15 - 40

Queens High School for the Sciences

0 1.25 2.5   5 Miles

Bronx Science

Grade 9 Applications
Per District of Residence
- 165 - 214
- 215 - 318
- 319 - 506
- 507 - 760
- 761 - 1396

The Bronx High School of Science

Grade 9 Offers
Per District of Residence
- 5 - 8
- 9 - 29
- 30 - 62
- 63 - 84
- 85 - 141

The Bronx High School of Science

0 1.25 2.5   5 Miles