



District of Columbia  
Office of the State Superintendent of Education

# 2018 STAR Framework Brief

December 7, 2018

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## Table of Contents

<b>EXECUTIVE SUMMARY</b>	<b>3</b>
<b>INTRODUCTION</b>	<b>5</b>
<b>DISTRIBUTION OF 2018 STAR RATINGS</b>	<b>6</b>
STAR RATINGS CITYWIDE	6
STAR RATINGS BY SECTOR	7
STAR RATINGS BY WARD	8
<b>STUDENT GROUPS AND STAR RATINGS</b>	<b>9</b>
RELATIONSHIP BETWEEN A SCHOOL'S STUDENT COMPOSITION AND STAR SCORE	9
ENROLLMENT IN HIGH-PERFORMING SCHOOLS	12
<b>GROWTH METRICS AND THE STAR RATING</b>	<b>12</b>
STAR SCORES VS. SCORES WITHOUT GROWTH	13
ACADEMIC GROWTH DOMAIN AND STAR RATING	14
ADDRESSING CHRONIC ABSENTEEISM	14

## Executive Summary

A state accountability system aims to provide transparency into the performance of schools. Providing this transparency requires that the accountability system include meaningful metrics of school quality and student success. During the creation of the DC School Transparency and Reporting (STAR) Framework, OSSE made numerous decisions aimed to capture school quality and student success within DC's educational landscape. Feedback from DC stakeholders and outside experts informed these decisions. The release of the STAR Framework and this review provides a starting point for future discussions and refinements.

In the development of the STAR Framework, OSSE's goal was to design a system that would accurately measure the performance of schools across the city and provide a distribution that reflected meaningful differentiation. It was important that the system be designed in a way that performance on a single metric or from a single student group would not be the sole determinant of a school's accountability rating. Utilizing the flexibilities provided to DC under the federal Every Student Succeeds Act (ESSA), OSSE designed a system using metrics which provide schools multiple pathways to demonstrate their performance and success. This brief explores outcomes related to these goals and provides transparency into the STAR scores and ratings earned by schools in the initial run of the STAR Framework. Specifically, this brief will share citywide trends for STAR ratings, student group performance (e.g., students who are at-risk, students with disabilities, race/ethnicity groups), and the impact of growth metrics.

Analyses of citywide school STAR ratings issued in 2018-19, based on data from the 2017-18 school year, show that over 80 percent of schools earn a STAR rating between two- and four-stars, with about 9 percent earning a one-star rating and 8 percent earning a five-star rating. This suggests that, as expected in the first year of implementation, STAR ratings are distributed normally. Scores are distributed similarly across both DCPS and charter schools, though DCPS has a slightly larger percentage of schools falling into both the one- and five-star range than charter schools. The distribution of ratings differs across the eight DC wards and each ward has four-star schools.

OSSE recognizes the performance disparities across student groups in our city and developed a system to hold ourselves accountable for the education of all students. In the District of Columbia, 46 percent of students are part of the at-risk student group. Additional analyses were done to explore further the relationship between a school's STAR score and the percentage of students who are at-risk. Out of 120 schools with 50 percent or more of their students being at-risk, 52 schools earned a STAR rating of three or higher, with 9 of those schools earning a rating of four stars or higher. These findings demonstrate that schools with a high percentage of students who are at-risk can perform well within the STAR Framework. The STAR Framework both provides transparency into the performance of all student groups and encourages excellence for all student groups.

OSSE agreed with feedback received during the development of the STAR Framework that academic growth should play an important role in an accountability system and included two measures of academic growth, median growth percentile and growth to proficiency. In addition, OSSE also utilized flexibilities within ESSA to incorporate two other growth measures in the framework, attendance growth and ACCESS growth. DC's STAR Framework includes multiple measures of growth in the Elementary,

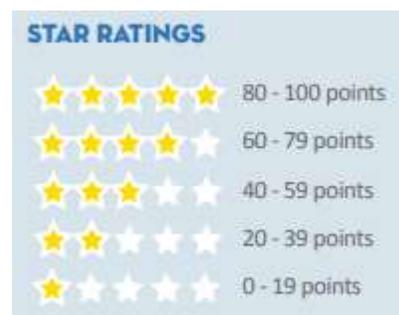
Middle, and Alternative frameworks which collectively have a higher weighting than academic achievement. Analyses suggest that a school's performance on student growth metrics are generally less related to their school's student populations (e.g., percentage of students who are at-risk or are students with disabilities) than are academic achievement metrics. Without the addition of growth metrics, thirteen schools currently earning two- or three-star ratings would have been in the one-star range. Additional analysis confirms the importance of incorporating multiple measures in the accountability as neither academic achievement nor growth was the sole determining factor for a school's STAR rating. These findings and other analyses provided support OSSE's goal of creating multiple pathways to success within the STAR Framework. The findings also support the belief that schools should be recognized for helping students grow even when their students are not yet demonstrating high levels of proficiency.

## Introduction

In December 2018, as required by the Every Student Succeeds Act (ESSA), the Office of the State Superintendent of Education (OSSE) released the first annual [DC School Report Card](#) for all public schools in the District. The DC School Report Card includes a School Transparency and Reporting (STAR) Framework rating of overall school performance from one to a five stars. The STAR Framework provides the first comparable performance rating for all public schools in the District, both DC Public Schools (DCPS) and public charter schools. This brief shares the citywide performance trends for frameworks, student groups, and metrics.

In order to understand the data in this brief, it is necessary to first understand how a STAR rating is calculated for each school (the comprehensive guide is the [DC School Report Card and STAR Framework Technical Guide](#)). In short, the STAR Framework calculates an overall school performance rating using measures of academic achievement, student growth, school environment, English language proficiency, and graduation rates for student groups in the school. The STAR Framework first measures a school's performance for all students for each of the applicable metrics and then measures performance for students with disabilities, students who are at-risk, English learners, and each racial/ethnic group in the school with more than ten students. All metrics for each student group have a target score, for which schools earn all possible points, and a floor, below which no points are earned.

Once the STAR Framework measures performance for each student group on each applicable metric, it adds all of the student group scores to produce the overall STAR score for the school from 0 to 100 points. The overall STAR score for the school results produces the overall STAR rating from one to five stars (see right).



In order to account for the different grades and students served by each school, the STAR Framework has four different frameworks: Elementary, Middle, High, and Alternative School. Each framework includes measures for all of the metrics that are applicable for the grades served by the school. For example, only schools that serve high school-age students are measured for graduation rate. Schools that serve multiple grade bands receive STAR ratings for multiple frameworks that are weighted to create the school's overall STAR rating. For example, a school that serves grades K-8 receives an Elementary School STAR score and rating, a Middle School STAR score and rating, and an overall STAR score and rating. In the displays of performance trends of grade level frameworks in this report, every framework score for each school is included.

Not all schools will receive a STAR rating using the STAR Framework. Schools that serve exclusively adults, exclusively students in grades PK3 thru grade 2, schools that are new, and schools that serve small numbers of students (below the threshold for student data privacy protections) do not receive STAR ratings. In 2018, 203 out of 235 schools in DC earned a STAR rating.

This document intends to highlight analyses that were most commonly discussed during the development of the STAR Framework. OSSE encourages interested parties to explore the data available on the [DC School Report Card](#) at the DC, LEA, and school level. Data files are available for download from the [DC School Report Card](#) website. OSSE will continue to analyze these results and plans to provide a deeper review of information in the coming months. Additionally, we will work with other external research partners to further the analyses in an effort to continually improve the system. For questions about the STAR Framework Report, please email [dcschoolreportcard@dc.gov](mailto:dcschoolreportcard@dc.gov) with “STAR Framework Report” in the subject line.

### Distribution of 2018 STAR Ratings

The STAR Framework is designed using a system by which schools earn points for performance of all student groups across multiple metrics. Baseline performance targets for each metric were developed using the relative performance of student groups across the city using historical data. The percentage of points that a school earns on each metric depends on how well they are performing relative to the established baseline targets. These targets are set for the first three years of the accountability system, enabling schools to establish goals related to each metric and aim instructional practices and programs toward success.

#### STAR Ratings Citywide

Analysis of the distributions in STAR ratings across the city reveals that most schools are in the two- to four-star range, with over 80 percent of schools earning one of these ratings. The three-star rating was the most common, with 36 percent of schools earning three-stars. Additionally, we see that 9 percent of schools earned a one-star rating and 8 percent of schools earned a five-star rating. (See Appendix A for analysis of STAR scores by framework showing a normal distribution of STAR scores across the District). Figure 1 shows the distribution of citywide STAR ratings across all public and public charter schools. The number inside each bar represents the total number of schools that earned the corresponding STAR rating. Figure 2 shows the same information in a different way, displaying the percentage of schools that earned each STAR rating.

As expected, the first year of results yields a normal distribution of STAR ratings. Although we see most STAR ratings this year clustered in the middle with a handful of schools earning one- or five- star ratings, the system does not guarantee that to be the reality every year. It is mathematically possible for no schools to earn a one-star rating. Our goal is to see continued improvement and for the distribution of STAR ratings to shift to the right over time.

Figure 1: Citywide STAR Rating Distribution

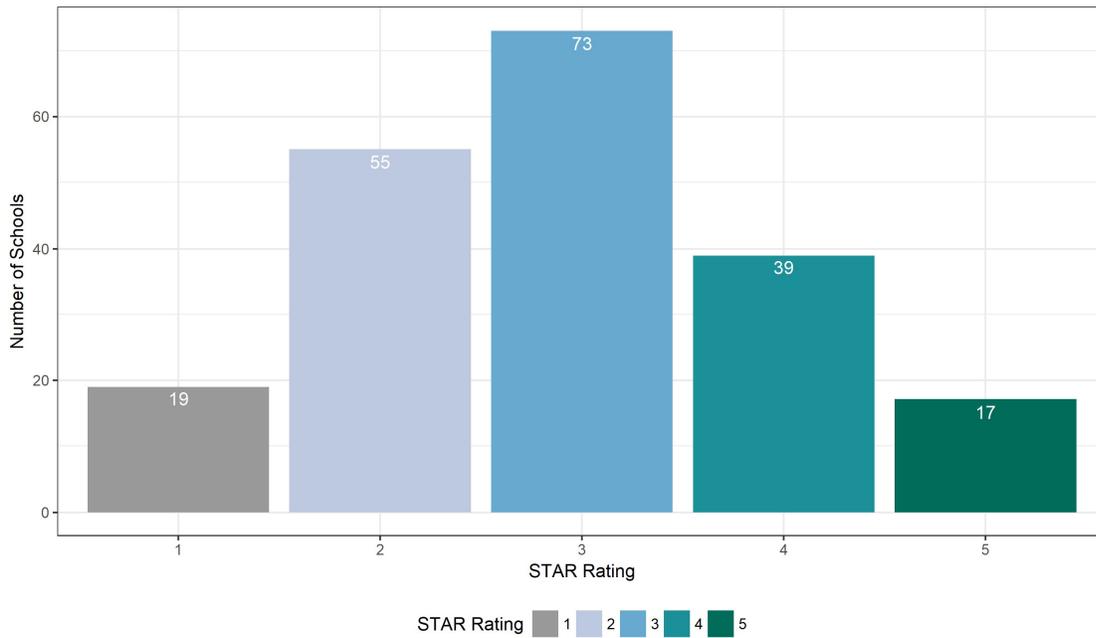
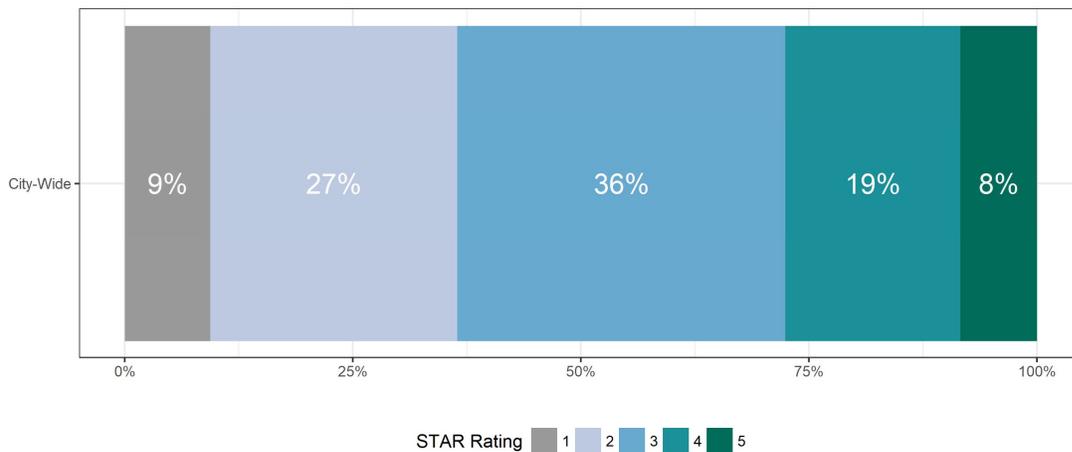


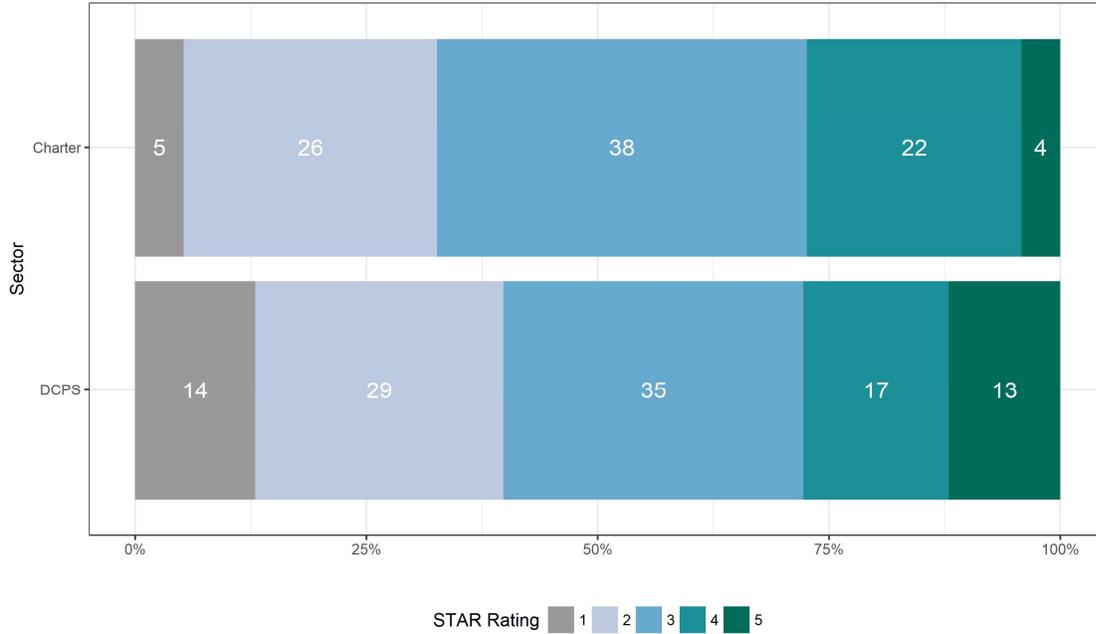
Figure 2: Citywide STAR Rating Proportions



### STAR Ratings by Sector

In addition to examining the distribution of STAR ratings across the city, we also examined the distribution by sector, meaning DC public schools and public charter schools. Figure 3 shows the number of schools that earned each STAR rating across each sector. Overall, the distributions are similar between sectors and with citywide distribution. DCPS has a larger percentage of schools at the one- and five-star ratings than charter schools, but both sectors have fewer schools at the one- and five-star ratings than the two-, three-, or four-star ratings. (See Appendix A for additional sector analyses.)

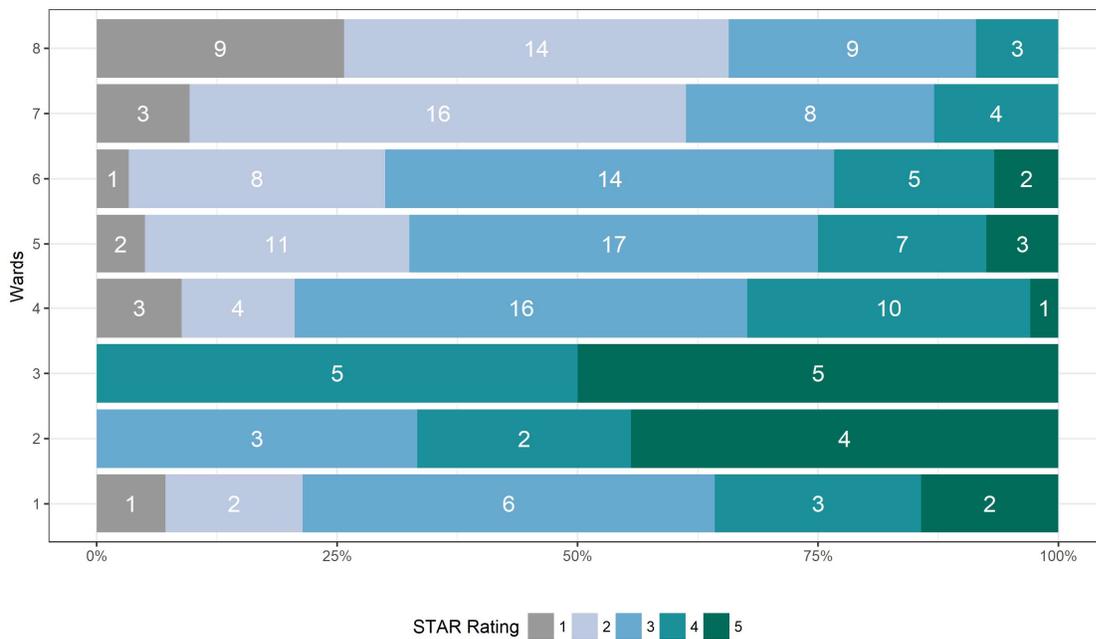
Figure 3: Sector STAR Rating Proportions



STAR Ratings by Ward

We also examined the distribution of scores across wards. Figure 4 displays the proportion of schools earning each STAR rating, by ward. This analysis shows that each ward has four-star schools, signifying that there are high performing schools throughout the city.

Figure 4: Ward STAR Rating Proportions



## Student Groups and STAR Ratings

OSSE believes deeply in the potential of all DC students to learn and achieve at high levels. While we know that all students can achieve excellence, it is the current reality that not all student groups are being supported and served to perform at the same level, both nationwide and in DC. There is a robust body of literature that finds academic achievement is, on average, lower for students who are at-risk. OSSE and educational leaders across the city know that students who are at-risk *can* excel academically and the results of the STAR Framework highlight examples of these successes throughout the city. The STAR Framework provides an opportunity to both provide transparency into the performance of all student groups across the city and to encourage excellence for all student groups.

The STAR Framework was designed to measure the performance of students who are at-risk, students with disabilities, English learners and all racial/ethnic student groups, in addition to the all students group (which in many states is the only group used in accountability calculations). The STAR Framework includes and weights student group performance as part of the calculation of an overall school rating. For example, 5 points of a school's score is based on the relative performance of students who are at-risk, 10 points of a school's score is based on the relative performance of students with disabilities. A school's STAR score increases when a given student group's performance is high based on the metric targets set from relative performance of other schools. The inclusion of student group scores in the STAR Framework provides transparency about student group performance and informs efforts to ensure equitable outcomes for students.

The analyses that follow explore the relationship between the populations of students served by schools in DC and schools' STAR ratings, focusing on schools with high percentages of students who are at-risk. Because the majority of points are earned from this "all students" group, we explore whether the demographic make-up of DC schools is related to STAR ratings (See Appendix B for detail on analysis performed). We first directly examine the relationship between demographic percentages and STAR score. Next, we look at the relationship between demographic percentages and individual metrics. Finally, we present the percentage of enrolled students within each student group that attend a one-star school, a two-star school, and so on.

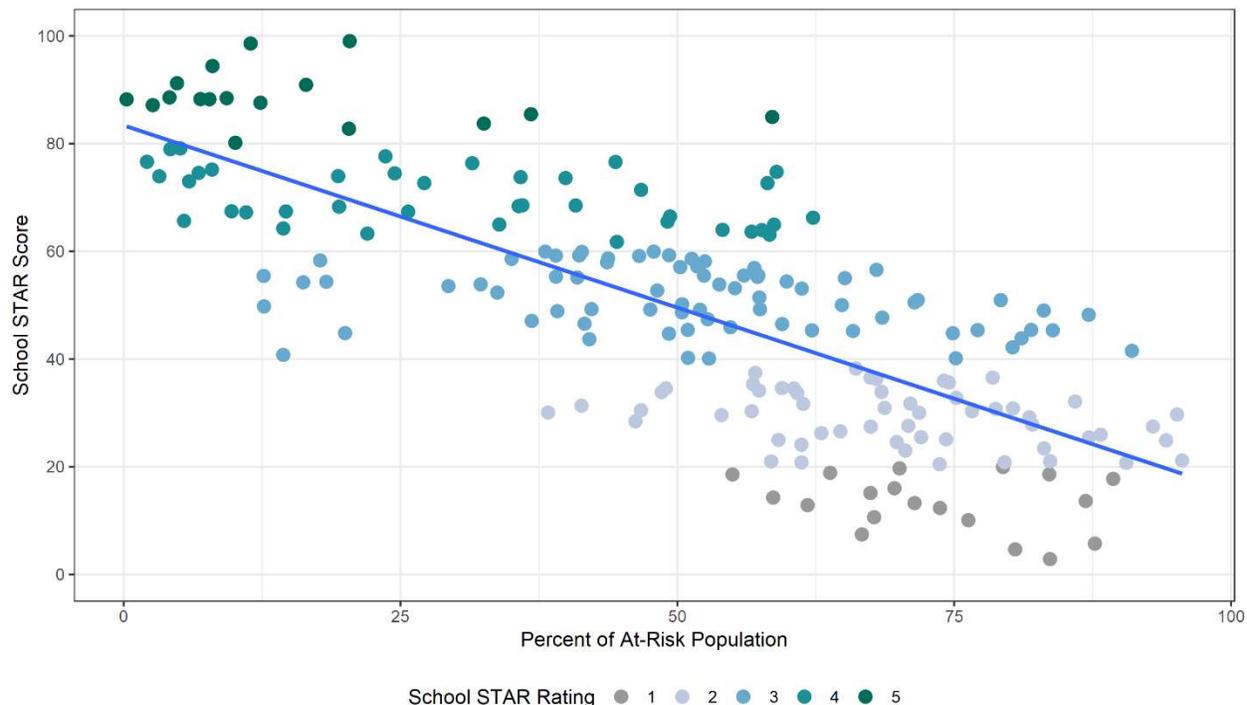
### Relationship between a School's Student Composition and STAR Score

We conducted a series of regression analyses to determine the relationship between a school's student group composition and the school's STAR score. These analyses attempt to predict STAR scores using only the percentages of students at the school who belong to each student group. The student groups included in the analyses were: English learners, students with disabilities, students who are at-risk, and members of each racial/ethnic group at the school. Please see Appendix B for detail on regression analyses.

These results suggest a strong relationship between school student group composition and a school's overall STAR rating. To answer the specific question of whether schools with a sizable population of students who are at-risk perform well on the STAR Framework, we directly compared the percentages of students at each school who were at-risk against the school's final STAR score. Figure 5 shows the relationship between the percentage of students who are at-risk and school STAR score. Out of 120

schools with 50 percent or more of their students being at-risk, 52 schools had a score of three or higher, with 9 of those schools having a score of four or higher showing that schools with a high percentage of students who are at-risk can perform well.

Figure 5: Relationship between Percentage of At-Risk Students and School STAR Score



### *Students who are At-Risk and STAR Metrics*

We conducted an additional set of regression analyses to further explore the relationship between the percentage of students who are at-risk and schools’ metric scores for the elementary, middle, and high school frameworks. Table 1 shows the adjusted R-squared value for relationship between a metric and the percentage of students at a school who are at-risk. The R-squared value provides an indication of the strength of the relationship between student groups and metrics, with higher numbers corresponding to a stronger relationships and bolded R-square values corresponding to a statistically significant relationship between each metric and the percentage of students who are at-risk.

The relationship is consistently strong between at-risk percentage and achievement metrics. This aligns with the literature on how at-risk status relates to student achievement. The academic growth metrics, on the other hand, are relatively less related to at-risk percentage, as is attendance growth and ACCESS growth. This underscores the importance of the decision made by OSSE to include multiple growth metrics in the STAR Framework and to place higher weight on academic growth compared to academic achievement in the elementary and middle school frameworks.

Table 1: Linear Regression Analysis of Percentage of At-Risk Students on Metric Score, by framework

<b>Metric</b>	<b>Elementary School</b>	<b>Middle School</b>	<b>High School</b>
CLASS - Classroom Organization	0.020		
CLASS - Emotional Support	0.058		
CLASS - Instructional Support	0.006		
pre-K In-Seat Attendance	0.517		
Growth to Proficiency - ELA	<b>0.106</b>	<b>0.241</b>	
Growth to Proficiency - Math	-0.001	<b>0.106</b>	
Median Growth Percentile ELA	<b>0.322</b>	<b>0.146</b>	
Median Growth Percentile Math	<b>0.050</b>	<b>0.067</b>	
90% Attendance	<b>0.599</b>	<b>0.306</b>	<b>0.229</b>
ACCESS Growth	-0.014	0.050	-0.105
Attendance Growth	-0.003	0.033	<b>0.075</b>
In-Seat Attendance	<b>0.551</b>	<b>0.235</b>	<b>0.240</b>
PARCC 3+/MSAA 3+ ELA	<b>0.690</b>	<b>0.560</b>	<b>0.760</b>
PARCC 3+/MSAA 3+ Math	<b>0.495</b>	<b>0.589</b>	<b>0.686</b>
PARCC 4+/MSAA 3+ ELA	<b>0.675</b>	<b>0.667</b>	<b>0.802</b>
PARCC 4+/MSAA 3+ Math	<b>0.549</b>	<b>0.615</b>	<b>0.682</b>
Re-enrollment	<b>0.247</b>	<b>0.207</b>	<b>0.650</b>
AP/IB Participation			<b>0.409</b>
AP/IB Performance			<b>0.754</b>
Extended Years Graduation Rate			<b>0.450</b>
Four-Year Graduation Rate			<b>0.477</b>
SAT College and Career Ready Benchmark			<b>0.793</b>
SAT DC Percentile			<b>0.637</b>

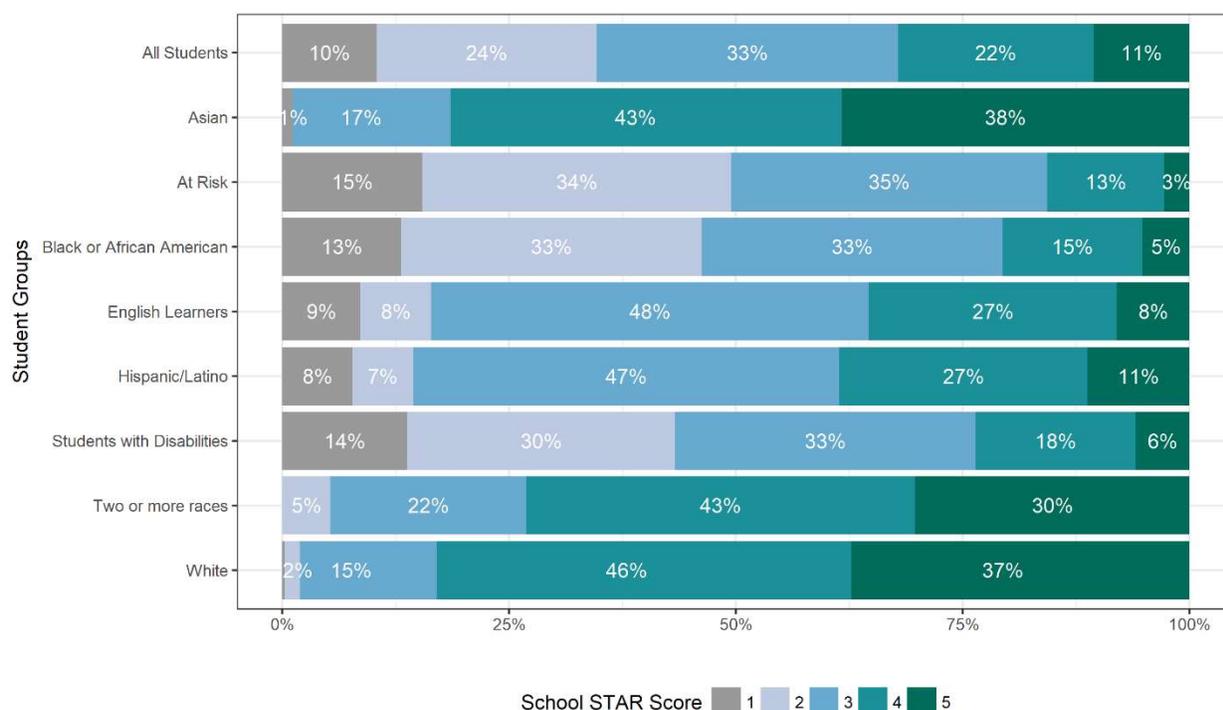
A third set of regression analysis reveals that the association between schools' student composition and STAR scores is not due to the composition of the school but instead is fully explained by the relationship of student groups and metric performance. (Please see Appendix B for more detail.) These findings reveal that the relationship between a school's at-risk percentage and students with disabilities percentage and a school's STAR score is related not to the percentage of student composition at the school but is related to the tendency for these student groups to demonstrate lower performance on some metrics.

In the STAR Framework, student group scores are calculated by combining metric points calculated by comparing the school's student group performance against the target established based on the same student group's performance relative to other schools. An individual school may receive a high student group STAR score in instances when a specific student group at that school is demonstrating higher performance compared to the same student group in other schools in the city. Additionally, by setting metric targets every three years, schools that demonstrate higher student group performance year to year will have the opportunity see improvements in student group scores and earn higher STAR scores and ratings in subsequent years.

## Enrollment in High-Performing Schools

Figure 6 shows the proportion of students in each student group who were enrolled in one-, two-, three-, four-, and five-star schools. Across the city, only 1 percent of all Asian students and less than 1 percent of all White students were enrolled in one star schools, whereas 98 percent of both Asian and White students and 95 percent of students of two or more races were enrolled in three, four or five star schools. In contrast, students who are at-risk, students with disabilities, as well as Black or African American students were disproportionately enrolled in one and two star schools compared to the overall population (all students), and were less likely to be enrolled in four or five star schools. The findings in Figure 66 illustrate that students who are at-risk, students with disabilities, and Black or African American students appear to less likely to be enrolled in schools with higher star ratings compared to other student groups.

Figure 6: Distribution of Student Group Enrollment, by STAR Rating



As we continue to explore the data in future years, we will use results from the STAR Framework to examine performance trends across the city with the goal of seeing more high performing schools proportionately serving students who are at-risk and students with disabilities.

## Growth Metrics and the STAR Rating

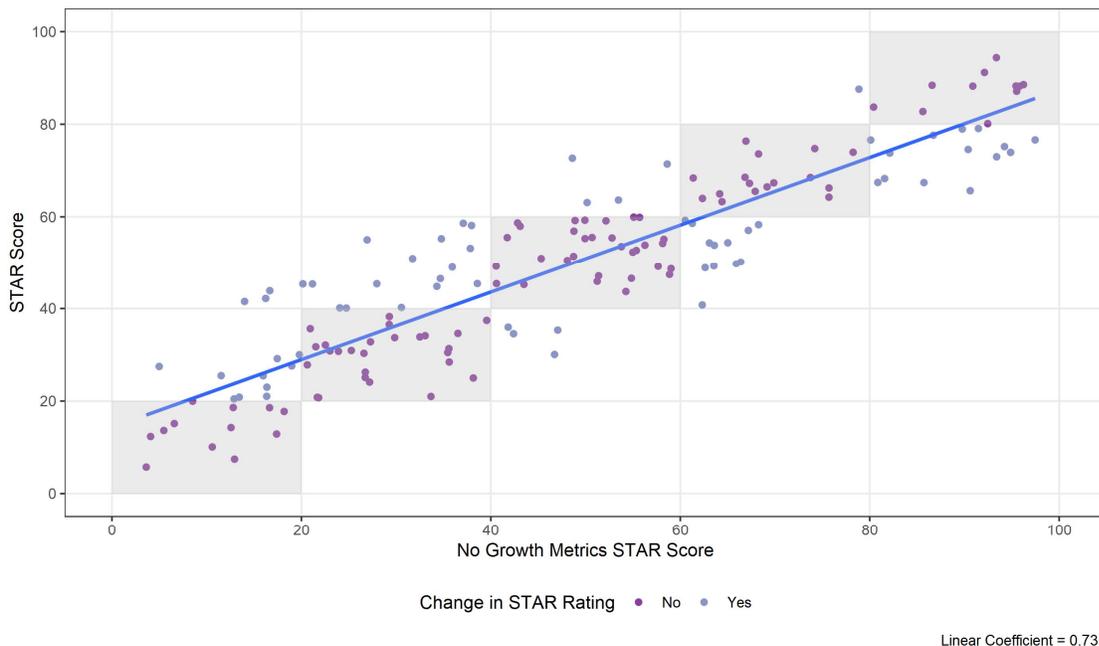
The inclusion of measures of growth in the STAR Framework allows schools to demonstrate the progress they are making for students, even if the academic achievement of their students is not yet high. While some schools demonstrate similar levels of academic performance and growth, there are many schools who excel more with one than the other. In light of this, it is important to understand the relationship between schools' performance on measures of growth and their STAR ratings.

### STAR Scores vs. Scores without Growth

OSSE conducted analysis to investigate the relative influence of achievement and growth metrics on the STAR Framework by examining actual STAR scores versus hypothetical scores under different framework scenarios that include or exclude achievement and growth metrics from the STAR Framework. One scenario investigated schools' actual STAR scores versus hypothetical scores if all growth metrics were not a part of the system. To be clear, we do not suggest removing growth; instead, this analysis serves as a way to illustrate its impact on the system. (Please see Appendix C for detail on all scenarios examined.)

Figure 7 shows the relationship between a school's actual STAR score (on the vertical axis) and its hypothetical score were the system to exclude all growth metrics (on the horizontal axis). Each point on the scatter plot represents a school framework STAR score; a school that spans elementary and middle school will have two dots on the figure. When a school's dot is located in the shaded cells, it represents cases where the school's STAR rating would not have changed. If the dot is located above the shaded cell, that school's actual STAR rating is higher than a hypothetical rating which excludes growth. If the dot is located below the shaded cell, that school's actual STAR rating is lower than a hypothetical rating which excludes growth.

Figure 7: STAR Framework without Growth Metrics



This analysis shows that were all growth metrics removed from the STAR Framework, the STAR ratings would change for approximately half of schools. Specifically, thirteen schools would have earned a one-star rating without the inclusion of growth metrics, but earned two- or three-star ratings with the inclusion of growth metrics; sixteen schools would have earned a two-star rating without growth metrics, but earned a three-star rating with the inclusion of growth metrics.

### Academic Growth Domain and STAR Rating

We also conducted a set of regression analyses to determine the impact of STAR metrics within each domain on the overall STAR score. Academic growth metrics explained 76 percent of the differences observed in STAR scores, and similar levels of growth correspond to a wide range in STAR scores. For example, elementary schools earning a metric score of approximately 50 in Growth to Proficiency – ELA have STAR scores that range from 13 to 77. (See Appendix C for additional detail on this analysis.) This means that schools with high levels of growth tend to have high STAR ratings, but that performance on the other metrics in the accountability system also impact the STAR rating. This analysis supports our decision to place substantial weight on growth metrics within the STAR Framework and indicates that the STAR Framework provides multiple pathways by which schools can demonstrate their success.

### Addressing Chronic Absenteeism

Ahead of the 2017-2018 school year, Mayor Bowser launched a citywide effort to emphasize the importance of student attendance, highlight its impact on student achievement, and promote District investments to help students and families overcome obstacles to attendance. The “Every Day Counts!” initiative includes a public campaign and a task force of education, health, and public safety leaders, as well as investments in data-driven strategies to reduce absenteeism. To directly support this initiative, OSSE incorporated two measures of chronic absenteeism into the STAR Framework, 90% Attendance and Attendance Growth. The 90% Attendance metric rewards schools with low rates of chronic absenteeism. Because we know that absenteeism is an area of focus for many of our schools, the inclusion of Attendance Growth allows schools with lower rates of attendance to receive credit for improvements in their attendance rates from one year to the next.

When comparing rates of chronic absenteeism data in the 2017-18 school year to rates of chronic absenteeism in the 2016-17 school year, over two-thirds of elementary and middle schools saw increases in their rates of chronic absenteeism while more than half of high schools showed improvement. Although, we have not yet actualized improvements in chronic absenteeism for elementary and middle schools, our high schools have shown improvement.

Similar to findings comparing schools’ performance on the academic achievement and academic growth metrics, we see a great deal of variation in schools’ performance on both 90% Attendance and Attendance Growth, with schools as equally likely to perform similarly on both metrics as they are to perform better on one metric compared to the other. As with other measures of growth within the STAR Framework, schools’ student group composition is not related to performance on Attendance Growth; schools with high percentages of at-risk students are equally likely to show growth in attendance compared to schools with low percentages of at-risk students. Please see Appendix D for a more detailed analysis and discussion of the 90% Attendance and Attendance Growth metrics.