

STRATEGIC **DATA** PROJECT

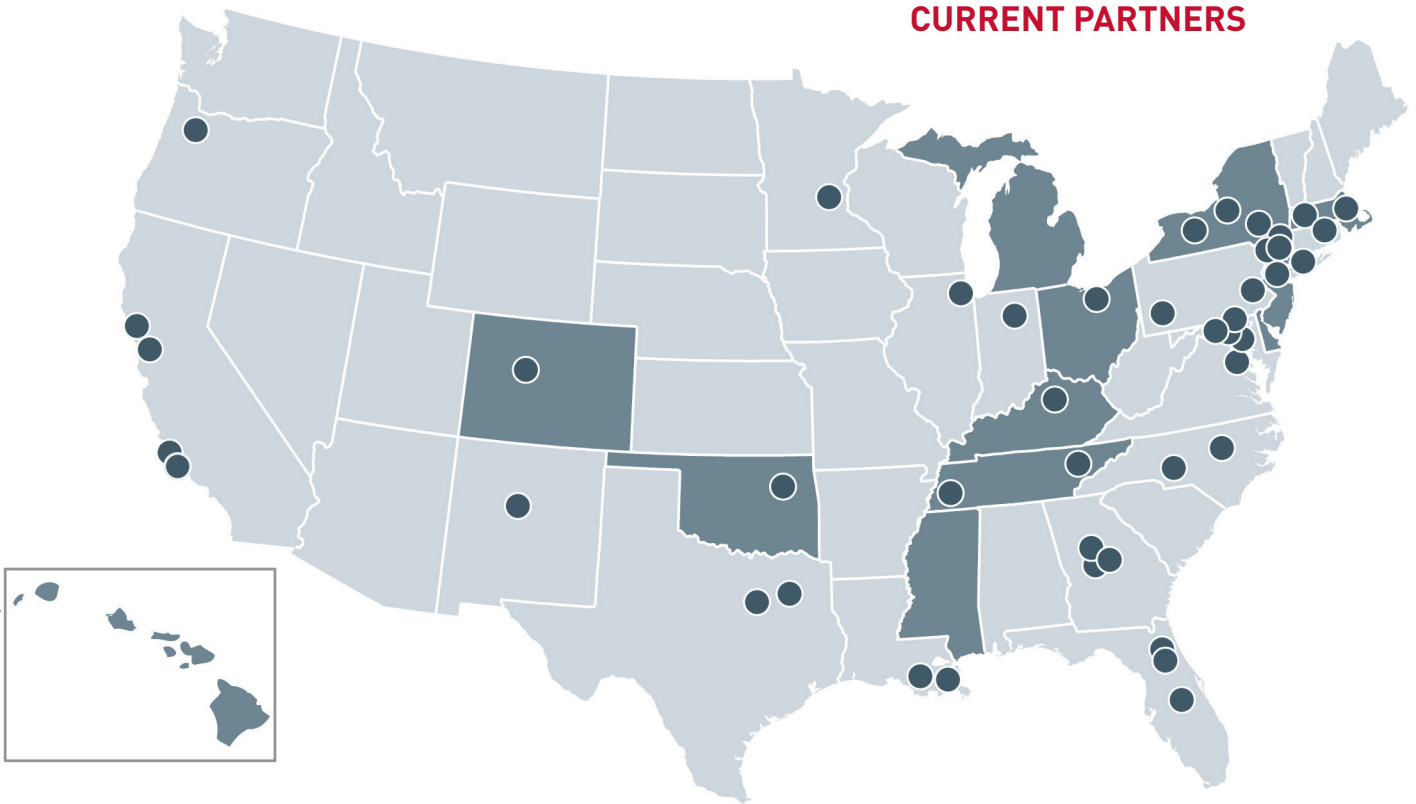
# SDP COLLEGE-GOING DIAGNOSTIC

The School District of Philadelphia

October 2013



## CURRENT PARTNERS



## STRATEGIC DATA PROJECT (SDP)

Since 2008, SDP has partnered with 56 school districts, charter school networks, state agencies, and nonprofit organizations to bring high-quality research methods and data analysis to bear on strategic management and policy decisions. Our mission is to transform the use of data in education to improve student achievement.

**Part of the Center for Education Policy Research at Harvard University, SDP was formed on two fundamental premises:**

1. Policy and management decisions can directly influence schools' and teachers' ability to improve student achievement.
2. Valid and reliable data analysis significantly improves the quality of decision making.

SDP's theory of action is that if we are able to bring together the right people, assemble the right data, and perform the right analysis, we can help leaders make better decisions—ultimately improving student achievement significantly.

**To make this happen, SDP pursues three strategies:**

1. Building a network of top-notch data strategists who serve as fellows for two years with our partners (e.g., school district, charter management organization, nonprofit, or state education agency).
2. Conducting rigorous diagnostic analyses of teacher effectiveness and college-going success using agency data.
3. Disseminating our tools, methods, and lessons learned to the education sector broadly.

**For more information, visit: [www.gse.harvard.edu/sdp](http://www.gse.harvard.edu/sdp)**

*The project is supported by the Bill & Melinda Gates Foundation.*

# SDP COLLEGE-GOING DIAGNOSTIC

## INTRODUCTION AND BACKGROUND

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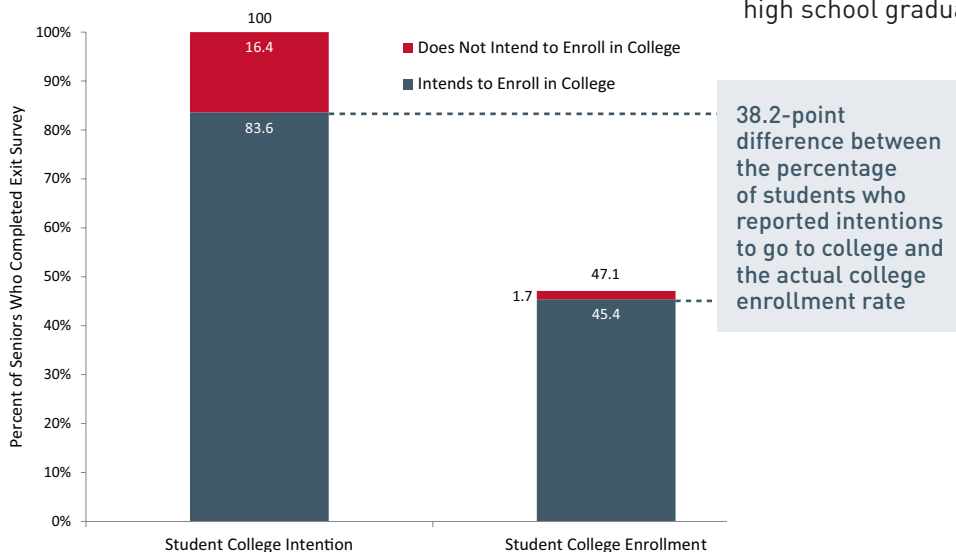
A few generations ago, a high school diploma opened doors to skilled jobs and middle-class earnings. Today, a college diploma is just as essential. Higher education, whether in the form of a two- or four-year college or a technical program, has become a critical step to achieving stable employment and financial security. It is projected that by 2018, 57% (3.5 million) of all jobs in Pennsylvania will require some postsecondary training.<sup>1</sup> In Philadelphia County, 57% of the occupations projected to grow will require postsecondary education.<sup>2</sup> These occupational trends, coupled with the fact that, on average, an individual with a bachelor's degree will earn approximately \$844,000 more over his or her lifetime than a high school graduate, underscore the importance of preparing students to graduate from high school with the knowledge and skills to enroll in, persist at, and complete higher education.<sup>3</sup>

Parental expectations also reflect the growing importance of higher education for career readiness. Nationwide, nine out of 10 students in Grades 6 through 12 have parents who

expect them to continue their education beyond high school. Also, 65% of students have parents who expect them to earn at least a bachelor's degree, and one quarter have parents who expect them to complete some postsecondary education.<sup>4</sup> Furthermore, according to a recent national Gallup survey, approximately 60% of parents agree that their children need to complete postsecondary education to earn more money, pursue their desired career, and achieve the American Dream.<sup>5</sup>

In The School District of Philadelphia (PA), there is a clear gap between students' college-going aspirations and what happens in reality. Based on the district's 2010–11 high school student exit survey, 84% of high school seniors who completed the survey indicated that they intended to enroll in college, yet only 47% actually enrolled in college the first fall after graduation (see Figure 1). Similar patterns are evident in other localities, such as the Fulton County Schools (GA), which found that 22% of their college-intending students did not enroll, and the Fort Worth Independent School District (TX), which found that more than 40% of their college-intending seniors did not continue to college in the fall after high school graduation.<sup>6</sup>

**Figure 1. Students' College Intention and Enrollment**



Given these patterns, we at the Strategic Data Project designed a set of analyses called the SDP College-Going Diagnostic as a means to:

1. better inform district leaders about the college-going outcomes of their students; and
2. identify potential areas for action to increase students' levels of academic achievement, preparedness for college, and postsecondary attainment.

The SDP College-Going Diagnostic is part of a partnership between the Strategic Data Project and The School District of Philadelphia to allow data to inform policy and management decisions. It is neither an exhaustive set of analyses, nor a set of specific recommendations for the district to implement. Rather, the diagnostic is a collection of descriptive analyses that can help the district better understand its current performance, set future goals, and

plan responses strategically. Additionally, the diagnostic is meant to demonstrate more broadly how districts can capitalize on existing data to better inform decision making.

This report examines students' high school graduation and college enrollment patterns and compares these patterns across a variety of student characteristics and academic experiences. To conduct the analyses, researchers connected individual student data (including demographics and test scores) to corresponding college enrollment data, allowing student outcomes to be tracked not only through high school, but also through college.

*The analyses were completed by members of the research team at the Center for Education Policy Research at Harvard University with the support of staff and SDP Fellows at The School District of Philadelphia.*

## KEY FINDINGS

**Section I.** What is the overall secondary and postsecondary educational attainment of students in The School District of Philadelphia?

- For every 100 first-time ninth graders who enroll in a district high school, 54 graduate high school within four years, 23 seamlessly transition to college, and 18 persist to their second year in college.

**Section II.** What are the critical junctures that affect student success?**Performance in High School**

- Half of the students in the district fall off track to graduate at some point during their first four years of high school. The majority of these students begin to struggle in ninth grade, as evidenced by insufficient credit accumulation.
- Ninth grade on-track status is highly predictive of students' high school completion status four years later.

**High School Graduation**

- High school graduation rates vary widely across different high school types in the district. For example, 89% of ninth graders at special admission high schools graduate within four years, compared with 47% at neighborhood high schools.
- Large differences in on-time graduation rates exist across high schools within the same types of schools and even among students with similar incoming achievement levels.

**College Enrollment**

- Forty-three percent of high school graduates in the district enroll in college seamlessly. In comparison, the national seamless college enrollment rates are 70% overall, 53% for public schools serving majority-minority student populations, and 42% for public schools in which more than three quarters of students qualify for free or reduced-price lunch.<sup>7</sup>
- As with high school graduation, college enrollment varies widely across high school types. At special admission high schools, nearly 80% of graduates enroll in college their first fall after high school graduation, compared with fewer than one third of graduates from neighborhood high schools.

**Section III.** What are the characteristics of students who enroll in postsecondary education and persist to their second year? What other factors are related to college persistence?

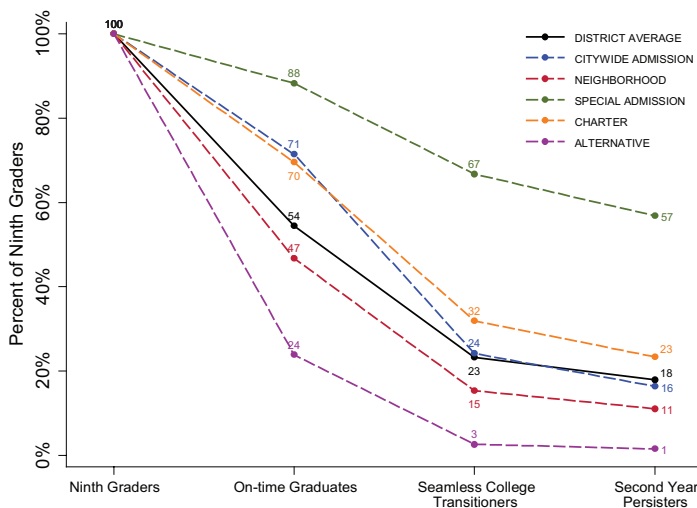
- More than four out of five high-performing graduates (i.e., students with combined SAT test scores equal to or higher than 1550) from The School District of Philadelphia enroll in four-year colleges. This is true for all students, regardless of their race or ethnicity. At the same time, however, high-performing graduates constitute only 13% of all graduates who take the SAT.
- Only 44% of graduates who take the SAT and score lower than 1550 enroll at four-year colleges, and four out of 10 low-performers do not enroll at all.
- Persistence rates are higher for students enrolled at four-year colleges—84% persist to their second fall in college, compared with 60% of students enrolled at two-year colleges.
- Persistence rates are higher for seamlessly enrolled students than for their peers who choose to delay college enrollment. Three quarters of seamless enrollers in the district persist to their second year of college while only 45% of delayed enrollers do so.

## Section I. What is the overall secondary and postsecondary educational attainment of students at The School District of Philadelphia?

This section provides an overview of student outcomes at The School District of Philadelphia across the entire student college-going pathway—from entering ninth grade through persisting to the second year of college. The analysis tracks the percentage of ninth graders who complete high school on time, seamlessly enroll in college, and persist to the second year of college.

Only 18% of ninth graders at The School District of Philadelphia complete high school on time, seamlessly enroll in college, and persist to their second year of college.

**Figure 2 . Student Progression from Ninth Grade into College by High School Type**



As shown in Figure 2, for every 100 first-time ninth graders who enrolled in a School District of Philadelphia high school in 2004–05 and 2005–06, 54 completed high school within four years, 23 seamlessly transitioned to college, and 18 persisted to the second year of their postsecondary studies. (These averages are calculated across all high schools in the district, with the exception of charter high schools.) In comparison, for every 100 ninth graders nationwide, roughly 75 graduate high school within four years, 53 immediately enroll in college, and 35 persist to their second year.<sup>8</sup> Across other school districts for which the Strategic Data Project has conducted such analyses, the percentages of students attaining each of these outcomes vary widely. In Fulton County, GA, 80% of ninth graders graduated from high school, 58% enrolled in college seamlessly, and 53% persisted to their second year.<sup>9</sup> In contrast, while 77% of ninth graders in Fort Worth, TX, graduated from high school, only 32% enrolled in college seamlessly, and 24% persisted to the second year.<sup>10</sup>

While overall secondary and postsecondary attainment rates in The School District of Philadelphia are below the national average, students at different types of high schools progress along the education pipeline at vastly different rates. In Figure 2, we also show the average rates of high school graduation, college enrollment, and college persistence for five different types of high schools in Philadelphia—citywide admission schools, neighborhood schools, special admission schools, charter schools, and alternative schools. Out of 100 ninth graders at special admission schools, 88 graduate on time and 67 enroll in college. In contrast, while 71 out of 100 ninth graders at citywide admission schools graduate within four years, only 24 enroll in college. The gap in college enrollment rates between special admission high schools and neighborhood high schools is even greater, at 52 percentage points. Many analyses in this report examine this variation in greater depth and begin to explore possible explanations for the differences observed across high school types.

This analysis raises two critical questions for The School District of Philadelphia to consider in order to better understand its students' current college and career readiness: 1) What are the critical junctures that affect student success and progress through high school? 2) What factors are associated with student success in enrollment and persistence in postsecondary education? The remainder of this brief highlights several findings that begin to unpack these questions.

# SDP COLLEGE-GOING DIAGNOSTIC

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## ANALYSES: Section I

### Questions to Consider

- What are the critical junctures that affect student success and progress through high school?
- What factors are associated with student success in enrollment and persistence in postsecondary education?

### Note on School Types

**Neighborhood Schools.** These high schools have open admission to students who attend a school serving Grade 8 that is within the high school's feeder pattern. Students from outside of the feeder pattern may apply to these schools.

**Citywide Admission Schools.** These high schools have admissions criteria. Students citywide may apply. Generally, in order to be eligible for the lottery for these schools, students must meet three of four academic and behavioral criteria: grades of A, B, or C on the most recent final report card; no more than 10 absences; no more than five instances of lateness; no negative disciplinary reports on the most recent final report card. Students may also have to attend an on-site interview. Some citywide admission schools may have additional criteria. Exceptions are Constitution High School, PMA Elverson, PMA Leeds, and High School of the Future.

**Special Admission Schools.** These high schools are "magnet schools," each with its own set of admissions criteria related to attendance, punctuality, behavior, grades, and standardized test scores. Students citywide may apply.

**Alternative Schools.** These schools provide alternative school settings and supports designed for students whose educational and social/emotional needs are not being met in the conventional classroom setting, helping to put students back on track to achieve the credits they need to graduate.

**Charter Schools.** These are independently operated public schools that are funded with federal, state, and local tax dollars.

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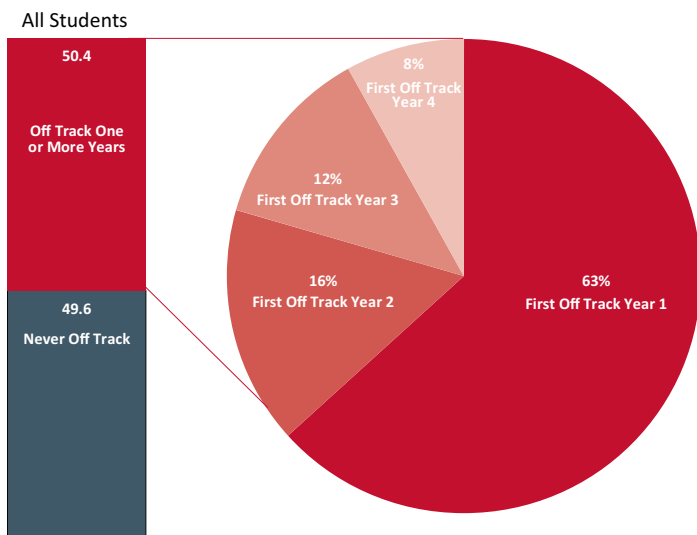
## ANALYSES: Section II

### Section II. What are the critical junctures that affect student success?

#### Performance in High School

Students who fail to graduate from high school do not do so suddenly or for no apparent reason. The majority of students who drop out send clear signals years earlier. Ninth grade, in particular, appears to be a crucial, make-it-or-break-it year for high school success. Focusing on student performance in ninth grade—in terms of course credit accumulation—is important because it enables the identification of most potential dropouts while leaving sufficient time to plan and implement supports that increase students' likelihood of graduation.

**Figure 3.** When Students First Fall Off Track (Among Students Ever Off Track to Graduate in Years 1–4 of High School)



Half of the students in the district fall off track to graduate at some point in high school. Among students who ever fall off track in high school, the majority—63%—do so in ninth grade.

Overall, half of all students in The School District of Philadelphia fall off track to graduate at some point during their high school career (Figure 3).<sup>11</sup> The majority of these students begin to struggle in their first year in high school. For example, 63% of students who entered high school between 2004–05 and 2006–07 and fell off track at some point in their first four years did so in ninth grade.

Ninth-grade on-track status is highly predictive of students' high school completion status four years later.

Academic performance in terms of course credit accumulation is an important predictor of high school graduation—and it begins to matter as early as students' first year in high school. Figure 4 compares the high school completion outcomes of students who are off track to graduate after ninth grade with those of their on-track peers.

On average, two out of every five students (38%) who fall off track during their first year in high school are able to recover sufficient credits and graduate within four years. However, these students are far less likely to graduate on time compared with students who did not fall off track during their ninth-grade year. Among students on track to graduate at the end of ninth grade, 86% graduate within four years, and fewer than one in ten drop out.

#### Questions to Consider

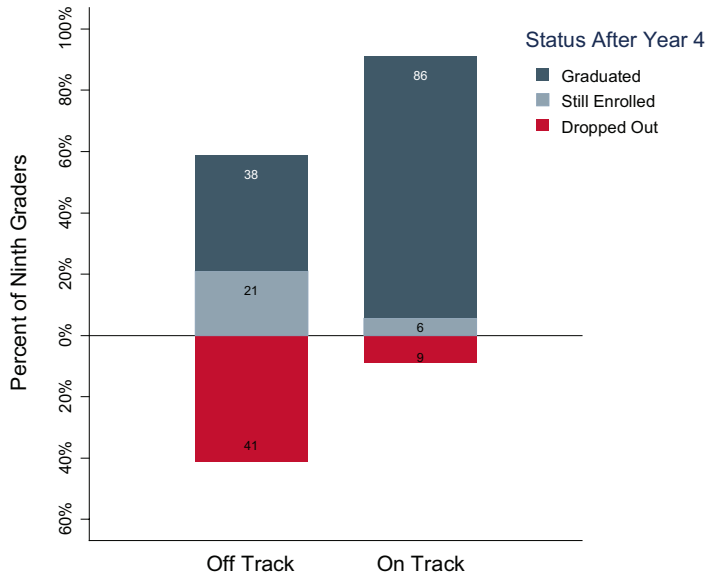
- Is the district's eighth-grade promotion policy adequate in ensuring that students who leave eighth grade are prepared to succeed in ninth grade?
- What strategies does the district have to identify students struggling in the ninth grade?
- While the majority of students fall off track during ninth grade, how can the district begin to track and effectively support students who fall off track in their later years of high school?



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## ANALYSES: Section II

**Figure 4.** Enrollment Status After Four Years in High School (By On-Track Status After First Year of High School)



High school graduation rates vary widely across different high school types across the district.

### High School Graduation

High school graduation is a critical step to higher education. Understanding trends and variations in high school graduation rates across schools and student subgroups is essential. The analyses in this section examine differences in graduation rates across high school types in the district as well as variations among schools within those types.

**Figure 5.** High School Graduation Rates by High School Type

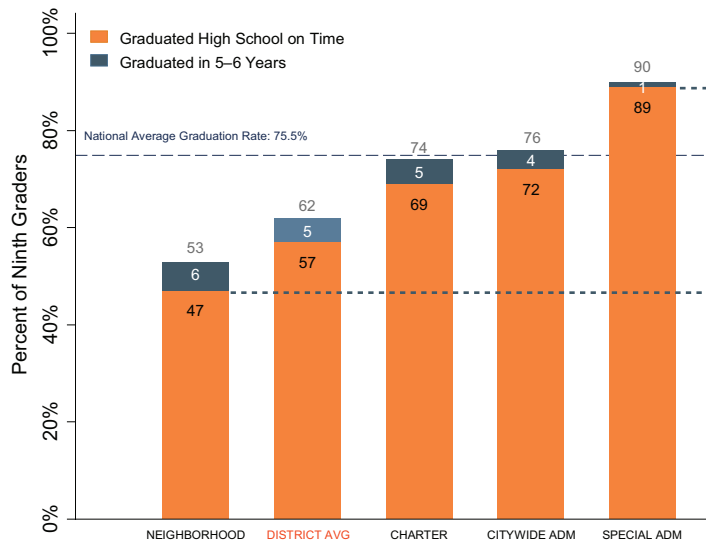


Figure 5 shows the average high school graduation rates for four different types of high schools in Philadelphia—neighborhood schools, citywide admission schools, special admission schools, and charter schools. Graduation rates are displayed separately for on-time graduation (i.e., within four years of entering ninth grade for the first time) and for graduation within six years. The district average high school graduation rate is calculated across neighborhood, citywide admission, and special admissions schools and is based on the high school in which a student first enrolls in ninth grade; the district average excludes charter high schools and alternative high schools.

At 57%, the average on-time high school graduation rate for The School District of Philadelphia is lower than the national average rate of 75%. At the same time, graduation rates for students in different types of high schools vary widely. For example, the percentage of ninth graders who graduate on time from special admission high schools (89%) is nearly double the percentage of ninth graders who graduate on time from neighborhood high schools (47%).

It is important to note that while The School District of Philadelphia’s citywide admission and special admission high schools are performing at relatively high levels, nearly two thirds of students in traditional district high schools

42 percentage-point range between high school types with the lowest and highest on-time graduation rates; the range declines to 25 points when adjusted for student socioeconomic background and eighth-grade achievement.

attend a neighborhood high school. Given this, improving the district’s high school graduation rate largely hinges on improving the performance of neighborhood high schools.

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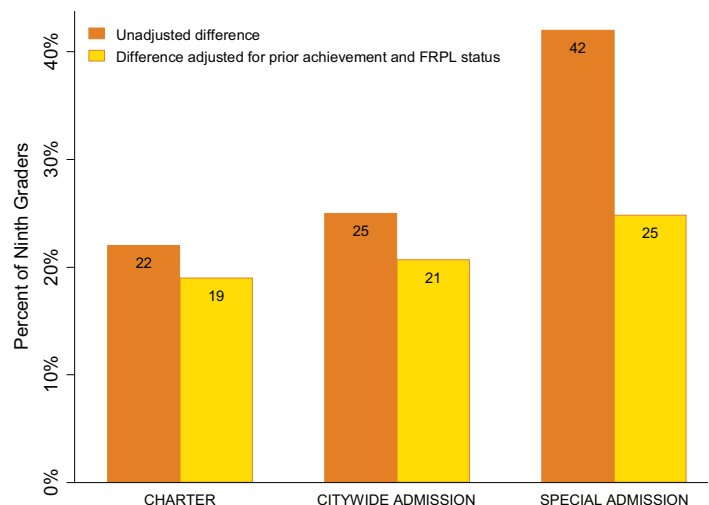
## ANALYSES: Section II

However, students who attend high schools of different types tend to have different characteristics—for example, students at special admission high schools are less likely to be eligible for free or reduced-price lunch (FRPL) and more likely to have done well in middle school than students enrolled at neighborhood high schools. Analyses that account for differences in students’ socioeconomic background and eighth-grade achievement yield diminished, albeit still considerable gaps. For example, as Figure 6 shows, the difference between special admission schools’ and neighborhood high schools’ average graduation rates declines from 42 to 25 percentage points when adjusted for differences in students’ prior achievement and free and reduced-price lunch eligibility.

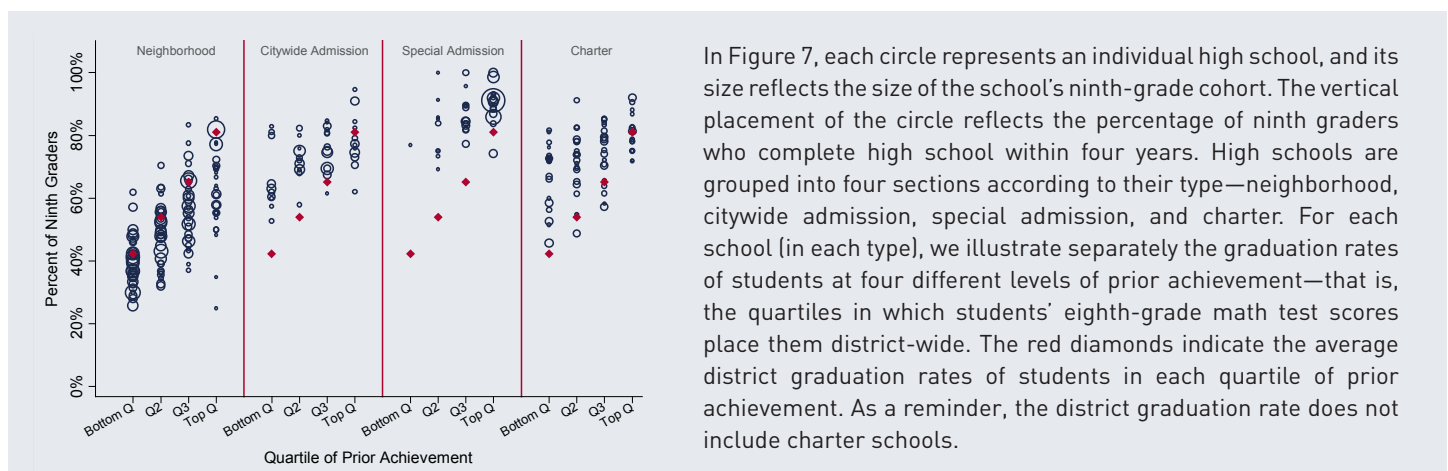
At the same time, enrollment at different school types may also be related to other factors, such as family or student characteristics, that cannot be measured easily. Strongly motivated students, for example, may be more likely both to attend special admission high schools and to graduate from high school on time. The adjusted gaps shown in yellow in Figure 6 likely reflect the influence of such characteristics along with the contribution of the high school type itself.

Student success through high school graduation and beyond is influenced by a multitude of factors. Students’ preparation in earlier grades is a powerful predictor of their performance in high school, and high schools often serve student populations of very different incoming achievement levels. However, high school factors can make an important difference as well. Figure 7 highlights the roles that both students’ prior achievement and the high school they attend play in their success.

**Figure 6.** Differences in On-Time High School Graduation Rates Between Neighborhood High Schools and Other High School Types



**Figure 7.** On-Time High School Graduation Rates (Within Quartile of Prior Achievement, by High School)



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## ANALYSES: Section II

Not surprisingly, on average, students with top-quartile prior achievement graduate from high school at higher rates than students who scored in any of the lower three quartiles. For example, at the district level, 81% of ninth graders with top-quartile eighth-grade math scores graduated from high school on time, compared with only 42% of ninth graders with prior achievement in the bottom quartile. However, prior academic achievement does not tell the whole story. Within each quartile (that is, among students with similar prior achievement), graduation rates vary widely across high schools—and this variation is present in all four high school types. For instance, the range of on-time high school graduation rates in neighborhood schools for students who performed in the bottom quartile in eighth grade is 35 percentage points. This means that a low-performing student is more than twice as likely to graduate on time if he or she attended the neighborhood school with the highest graduation rate instead of the neighborhood school with the lowest graduation rate.

**Large differences in on-time graduation rates exist across high schools, even among students with similar incoming achievement levels who are enrolled at the same types of high schools.**

### Questions to Consider

- How can the district differentiate support to schools to increase students' high school graduation rates? For example, how can the district support schools with a high percentage of students who perform in the bottom quartile in eighth grade?
- Given the variation in performance across district schools, should the district's research agenda prioritize the identification of promising practices within schools with high on-time graduation rates to support the development of case studies and/or scaling strategies?
- To augment the success of schools that have high on-time graduation rates—especially for lower-performing students—what support could the district provide to increase the college-going rates for students attending these schools?

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## ANALYSES: Section II

### College Enrollment

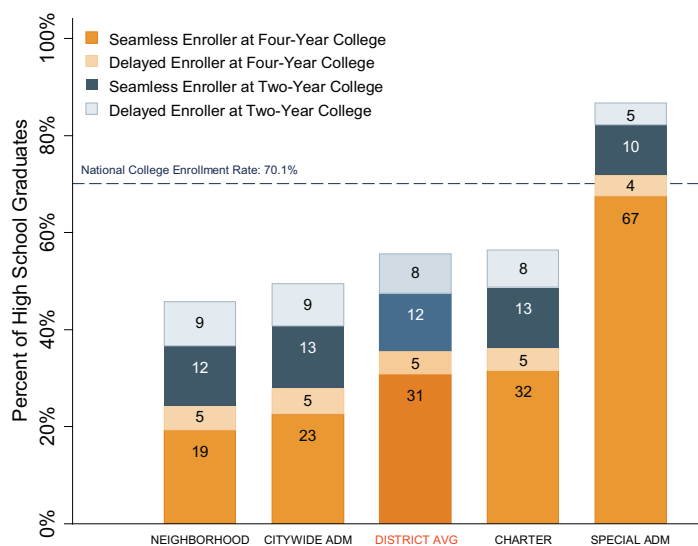
Given the substantial economic and social benefits of a college degree, understanding high schools' role in preparing students to enroll in and persist through college is essential. This section provides key findings that highlight students' college-going outcomes across different types of high schools in The School District of Philadelphia.

Slightly more than two out of five high school graduates from The School District of Philadelphia enroll in college seamlessly in the fall following high school graduation: 31% enroll at four-year colleges and 12% enroll at two-year colleges (Figure 8). Another 13% of students in the district are delayed enrollers, starting college at some point within two years of high school graduation. In comparison, 70% of high school graduates nationwide enroll in college seamlessly: 42% at four-year colleges and 28% at two-year colleges.<sup>12</sup>

Similarly to high school graduation, college enrollment in the district differs widely across high school types. At special admission high schools, nearly 87% of graduates enroll in college within two years of high school graduation; 72% do so at four-year colleges. At the same time, fewer than half of graduates from neighborhood high schools enroll in college within two years of graduating high school—and fewer than a quarter of students pursue enrollment at four-year colleges. And as with high school graduation, adjusting for differences in student socioeconomic status and eighth-grade achievement reduces but does not eliminate gaps in college enrollment across high school types. For example, the difference between the average college enrollment rates (to any type of college within two years) of special admission high schools and neighborhood high schools declines from 41 to 24 percentage points (not shown).

College enrollment in the district is lower than the national average but differs widely across high school types.

**Figure 8. College Enrollment Rates by High School Type (Seamless and Delayed Enrollers)**



### Questions to Consider

- Are the district's high school graduation requirements aligned with the admission requirements for the colleges its students are most likely to attend?
- Does the district provide sufficient support to help students and families successfully navigate the college application process?
- What partnerships, if any, should the district establish to support student transition from high school to college?

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## ANALYSES: Section III

### Section III. What factors are related to students' ability to successfully pursue enrollment and persistence in postsecondary education?

For many high school graduates, college enrollment is just the first of many hurdles on the road to postsecondary success. While considerable attention has been paid to challenges related to college preparedness and access, recent conversations have expanded to consider barriers to degree completion. In this last section, we examine college enrollment and persistence together to begin to tease out both the characteristics of students who enroll in postsecondary education and the factors, such as college type and timing of enrollment, that are related to successful student progress towards degree attainment. First, we look at which students enroll in which types of colleges. Then, we examine persistence rates by type of college and timing of initial enrollment.

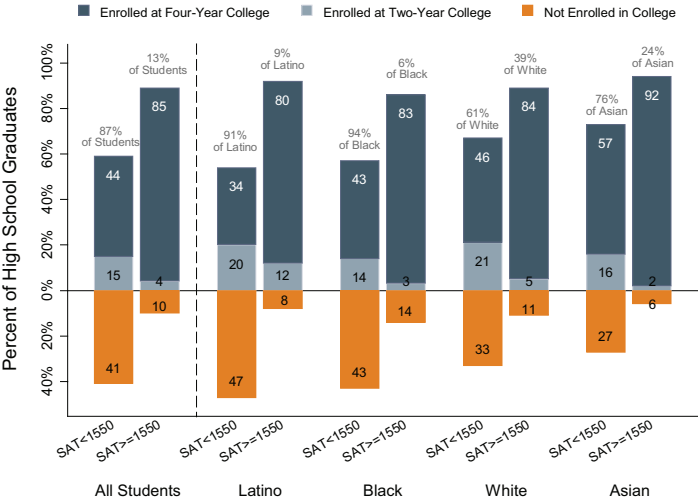
This analysis examines whether high school graduates enroll in colleges and universities that provide the right academic fit for their level of preparation. We divided students into two groups—students with combined SAT test scores of 1550 or higher (who are arguably highly qualified and well prepared to succeed at a four-year college), and students with SAT test scores lower than 1550. Research by the College Board has shown that achieving a combined score of 1550 on the SAT provides students with a 65% likelihood that they will earn a 2.7 first-year cumulative GPA—the equivalent of a B-average. In turn, according to the same report, a first-year GPA average of a B- or higher is highly predictive of college success and degree completion.<sup>13</sup>

As Figure 9 shows, highly qualified graduates in The School District of Philadelphia tend to pursue colleges that match their academic potential fairly well: they enroll seamlessly in four-year colleges at much greater rates than less-well-prepared students. On average, 85% of graduates with SAT scores equal or higher than 1550 enroll in four-year colleges, and only one in 10 does not enroll in any college. In contrast, among graduates with SAT scores lower than 1550, 44% enroll at four-year colleges and four out of 10 do not enroll in college at all.

It is important to note, however, that only one quarter of eligible students from the 2011–12 graduating class in The School District of Philadelphia took the SAT. Of these students, only 14% earned a combined score of 1550 or higher, compared with 43% of high school graduates in 2012 nationwide.<sup>14, 15</sup>

More than four out of five graduates with combined SAT scores of 1550 or higher enroll in four-year colleges, regardless of race or ethnicity. Among students with lower SAT scores, only 44% do so.

Figure 9. College Enrollment Rates by Race and Type of College (Among Graduates with SAT Scores Lower and Higher than 1550)

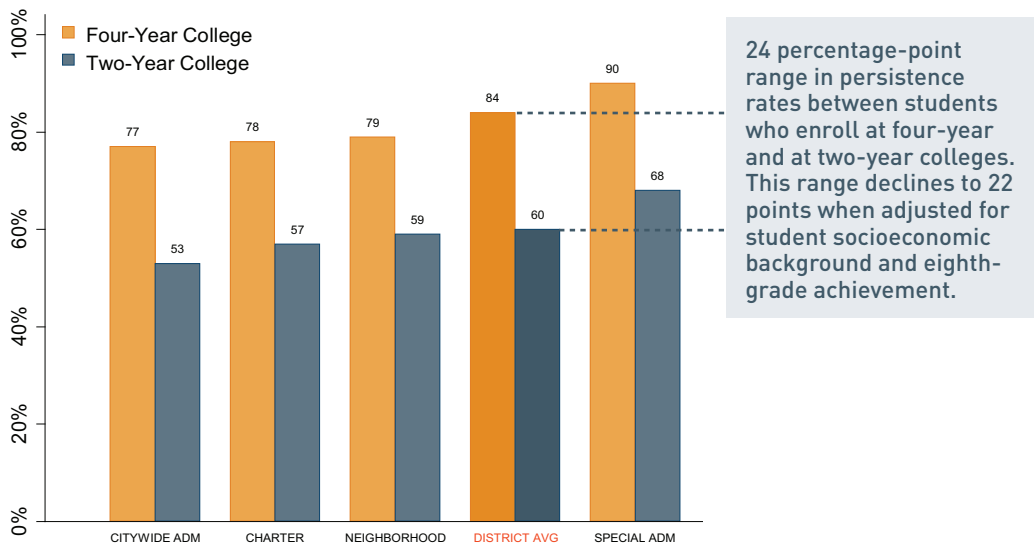


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## ANALYSES: Section III

Persistence rates are higher for students enrolled at four-year colleges than for students enrolled at two-year colleges

**Figure 10.** College Persistence by High School Type (Seamless Enrollers by Type of College)



Across the district, college persistence rates for students who seamlessly enrolled at four-year colleges are higher than for their peers who enrolled at two-year colleges (Figure 10). On average, 84% of students enrolled at four-year colleges persist to their second fall in college, compared with 60% of those enrolled at two-year colleges—a 24-percentage-point difference in college persistence rates. Controlling for student socioeconomic status and eighth-grade achievement yields a slightly smaller difference of 22 percentage points (not shown).

Interestingly, while high school graduation and college enrollment rates vary substantially across types of high schools, even when accounting for differences in student characteristics, gaps in college persistence rates across high school types are relatively small. For example, the range in persistence rates at four-year colleges between neighborhood schools and special admission schools is 11 percentage points overall; when adjusted for student socioeconomic background and prior academic achievement, this range declines to 8 percentage points (not shown).

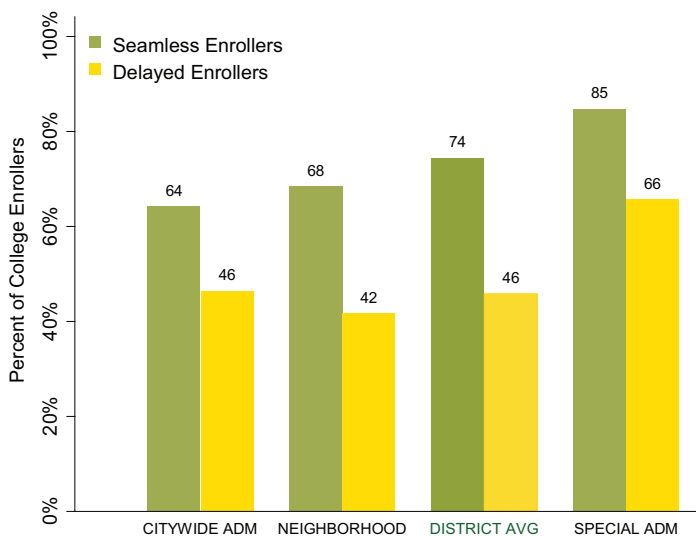
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## ANALYSES: Section III

Persistence rates are also higher among seamless college enrollers than among students who delay enrollment.

Across all high school types, persistence rates are considerably higher among seamless enrollers—students who enroll in college the fall following high school graduation—than among students who delay enrollment (Figure 11). Delayed enrollers are also twice as likely to enroll at two-year colleges than their peers who go to college seamlessly: Nearly two thirds of delayed enrollers opt for two-year colleges, compared with less than one third of seamless college-goers (not shown).

**Figure 11.** College Persistence by High School Type (by Timing of College Enrollment)



Overall, 74% of seamless enrollers in the district persist to their second year of college; in contrast, only 46% of delayed enrollers persist—a difference of 28 percentage points. Accounting for student socioeconomic status and eighth-grade achievement reduces seamless enrollers’ “advantage” in persistence rates to 22 percentage points (not shown).

### Questions to Consider

- While a combined SAT score of 1550 is highly predictive of students’ probability of enrolling in a four-year college, only 14% of The School District of Philadelphia students who take the SAT actually earn a combined score as high as or higher than this, compared with 44% nationally.<sup>16</sup> What is the district’s strategy to increase SAT participation and success rates?
- Given the differences in persistence rates by time of enrollment (seamless versus delayed), if a student has expressed interest in college, is that student receiving the necessary guidance and support to facilitate seamless enrollment?
- Given the differences in persistence rates by type of college (two-year versus four-year), are students receiving appropriate college counseling about the type of postsecondary institutions that would maximize their chances of postsecondary success?

**Which students are included in these analyses?**

For most analyses, we combine student-level data from three consecutive cohorts of first-time ninth graders and graduates from traditional high schools. This ensures that we have sufficient numbers of students at each school and reduces short-term random variation in outcomes. While this is appropriate for understanding recent high school graduation and college-going outcomes of students in the district as a whole, major changes that occurred in any individual school over the most recent year examined may be muted in the reported outcomes.

We use the ninth-grade cohorts of 2004–05 through 2006–07 to analyze variation in high school graduation outcomes, and the high school graduation cohorts from 2007–08 through 2009–10 to examine college-going outcomes. Due to data availability and quality, however, some of the analyses presented in this brief may include only a subset of these cohorts.

**Which schools are included in these analyses?**

Due to the fact that student course-taking data are not available for charter schools, students who attend such schools are excluded from the on-track analyses in the Performance in High School section. Results for charter schools are shown in the remaining analyses. However, unless otherwise noted, “district” results refer to results for students who attend schools managed and operated by The School District of Philadelphia; charter school results are excluded from district averages.

Alternative schools are excluded from all analyses with the exception of those shown in Figure 2.

**Which tests are used to identify prior student achievement?**

For analyses that display information on prior student achievement (for example, Figure 7 in Section II), we use eighth-grade student scores on the mathematics portion of the Pennsylvania System of School Assessment (PSSA). Using eighth-grade student scores from the ELA portion of the same test yields very similar results.

**How does the Strategic Data Project know about the college enrollment outcomes of The School District of Philadelphia graduates?**

In partnership with the school district, we obtained college enrollment data by linking the district’s administrative student records to postsecondary enrollment data from the National Student Clearinghouse (NSC). NSC is a national nonprofit organization that provides postsecondary enrollment verification for colleges and universities. It maintains student enrollment records for over 3,400 institutions of higher education throughout the United States, including career and technical training institutes, as well as two- and four-year colleges and universities. Presently, NSC data covers institutions serving 96% of all postsecondary students nationwide and 91% of all students enrolled at postsecondary institutions within 250 miles of Philadelphia, PA.<sup>17</sup> However, given that not all institutions are covered and that there are a number of instances in which students change names or high schools, some students who attend college may not be matched with NSC records. Thus, actual enrollment rates are likely to be slightly higher than those shown in this report.



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## APPENDIX 2: DEFINITIONS

### On Track to Graduation Status

We determine students' on- and off-track status in the first four years of students' high school careers based on the number of credits attained during each school year. Using high school graduation requirements of The School District of Philadelphia as guidelines, we consider a student to be on track during each year of high school if he or she accumulates as many or more total, ELA, and mathematics credits as presented in Table 1.

### High School Completion Rate

To calculate high school completion rates, we use a cohort-based formula similar to the "compact rate" used by the National Governors Association and required for graduation-rate accountability by the No Child Left Behind Act.<sup>18</sup> The Strategic Data Project formula divides the number of high school completers (students earning standard diplomas) by the number of first-time ninth graders four years earlier. To identify the number of first-time ninth graders four years earlier, we add together two groups of students: 1) students enrolled in a high school in The School District of Philadelphia in ninth grade and 2) students enrolled in a different district in ninth grade who transferred into The School District of Philadelphia at some point during high school. We exclude from the calculation students who transferred out of the district between ninth and 12th grade.

Our results may differ somewhat from those currently reported by The School District of Philadelphia, which uses a different calculation method. The School District of Philadelphia's formula divides the number of high school completers by the number of first-time ninth graders

four years earlier. However, only students who start at a Philadelphia district or charter school in ninth grade are counted as first-time ninth graders; students who transfer into the district between ninth and 12th grades are not included. (Similar to the Strategic Data Project formula, the district's formula excludes from the calculation students who transferred out of the district between ninth grade and 12th grade.)

### College Enrollment Rate

We report on two college enrollment outcomes for The School District of Philadelphia graduates who earn high school diplomas: 1) enrollment in college the fall following high school graduation (seamless enrollers) and 2) enrollment at any point within two years of graduating high school (delayed enrollers). To calculate seamless enrollment, we determine whether a student is enrolled in college as of October 1 of his or her high school graduation year. To calculate enrollment within two years, we use a cut-off date of two calendar years from the date of graduation.

### College Persistence Rate

We examine persistence rates in college for graduates who enroll in college. To calculate these rates, we determine whether a student remains enrolled in any college on October 1 one year following his or her initial enrollment date.<sup>19</sup> Research suggests that students who seamlessly transition from high school to college are more likely to complete a degree than delayed college-goers. Thus, in some analyses we calculate rates separately for seamless college enrollers and delayed college enrollers.<sup>20</sup>

**Table 1. Credits Required for a Student to Be Considered on Track to Graduate**

Year in High School	Total Credits	ELA Credits	Math Credits
First year	5	1	1
Second year	11	2	1
Third year	17.5	3	2
Fourth year (graduation)	23.5	4	3

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### Figure Notes

#### Figure 1

Sample: 8,161 students who completed The School District of Philadelphia 2010–11 High School Exit Survey.

#### Figure 2

Sample: 2004–05 and 2005–06 first-time ninth graders.

#### Figure 3

Sample: 2004–05 through 2006–07 first-time ninth graders. Students who transferred out of the district or who ever attended a charter or alternative high school are excluded from the sample.

#### Figure 4

Sample: 2004–05 through 2006–07 first-time ninth graders. Students who transferred out of the district or who ever attended a charter or alternative high school are excluded from the sample.

#### Figures 5 and 6

Sample: 2004–05 first-time ninth graders. The figures show results for 33 neighborhood schools (10,666 students), 21 charter schools (2,623 students), 10 citywide admission schools (1,727 students), and 14 special admission schools (2,325 students).

The national average graduation rate shown in Figure 5 is for 2008–09 and equals the total number of diploma recipients in 2008–09, divided by the average membership of the eighth-grade class in 2004–05, the ninth-grade class in 2005–06, and the 10th-grade class in 2006–07. It is reported by the National Center for Education Statistics. See endnote 8 for full reference.

#### Figure 7

Sample: 2004–05 through 2006–07 first-time ninth graders with eighth-grade PSSA math test scores. Sample sizes by quartile are as follows: bottom quartile (10,112 students), second quartile (9,366 students), third quartile (10,153 students), top quartile (9,370 students).

#### Figure 8

Sample: 2007–08 and 2008–09 high school graduates. The figure shows results for 30 neighborhood schools (10,879 students), 11 citywide schools (2,149 students), 14 special admission schools (3,877 students), and 20 charter schools (4,049 students).

The national college enrollment rate shown in the figure is for 2008–09. It is equal to the share of individuals aged 16 to 24 who completed high school in the preceding 12 months who were enrolled in college as of October 2009. It is reported by the National Center for Education Statistics based on data from the Census Bureau's Current Population Survey. See endnote 12 for full reference.

#### Figure 9

Sample: 2008–09 and 2009–10 high school graduates from traditional district schools. Chart shows results for 5,894 Black students, 1,107 Asian students, 824 Hispanic students, and 1,318 White students.

#### Figure 10

Sample: 2007–08 and 2008–09 high school graduates.

#### Figure 11

Sample: 2006–07 high school graduates.

### Endnotes

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7. The national college enrollment rate estimate is for 2008–09. The college enrollment rates for public schools by student race and FRPL characteristics are for 2003–04. All are reported by the National Center for Education Statistics (NCES).  
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8. The national high school graduation rate estimate is for 2008-09 and is reported by the U.S. Department of Education's National Center for Education Statistics (NCES). The national average college enrollment and college persistence rates of ninth graders are calculated by the authors based on college enrollment (for 2008-09) and persistence (for 2007-08) data reported by the NCES. Because NCES's data collection, methodology, and analysis approach differ from ours, we encourage caution when comparing Philadelphia-specific rates to these national estimates.  
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