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| AP STEM and English Program Evaluation—Year 9  *Further Exploration of AP Course Taking and Passing Rates* |
| October 23, 2021 |

***AP STEM and English AP Program Evaluation—Year 9***

***Further Exploration of AP Course Taking and Passing Rates***

Prepared by the UMass Donahue Institute’s  
Applied Research & Program Evaluation Group

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Contents

[Executive Summary 2](#_Toc91129852)

[Summary of Key Findings 2](#_Toc91129853)

[Introduction 5](#_Toc91129854)

[Evaluation Design 7](#_Toc91129855)

[Data and Data Analysis 9](#_Toc91129856)

[Methods 11](#_Toc91129857)

[Measures 11](#_Toc91129858)

[Highest Performing and Lowest Performing Cutoffs 12](#_Toc91129859)

[Characteristics 12](#_Toc91129860)

[Findings 14](#_Toc91129861)

[Summary of Key Findings 15](#_Toc91129862)

[Highest Performing and Lowest Performing Schools 15](#_Toc91129863)

[Schools Assigned to Varying Performance Levels 19](#_Toc91129864)

[School Performance Levels and Characteristics 21](#_Toc91129865)

[Appendices 23](#_Toc91129866)

# Executive Summary

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| Summary of Key Findings |
| * AP course (ELA, math, or science) taking and passing rates increased for most participating schools after the intervention started (assessed after one and three years of participation). * When considering changes in AP course taking and passing rates for all students, students who are African American / Black, students who are Hispanic/Latino, and students with disabilities, the highest performing schools were nearly always those that were not urban. * When considering changes in AP course taking and passing rates for students who are African American / Black, and students who are Hispanic/Latino, the highest performing schools were generally those that had lower percentages of individuals from those student groups. * Change in AP course taking and passing rates varied by student group of interest. There was less variation in change at participating schools for English language learners and students who are economically disadvantaged than for students from other groups (African American / Black, Hispanic/Latino, and students with disabilities). * Incidences of schools being assigned to the highest performance level for one student group / time interval and the lowest performance level for another student group / time interval were infrequent. |

Over the past 8 years, the Massachusetts Department of Elementary and Secondary Education (DESE) has contracted with the University of Massachusetts Donahue Institute (UMDI) to conduct an evaluation of the AP STEM and English program. This program is one of numerous DESE initiatives that aim to:

* Increase the college and career readiness of students in the Commonwealth
* Reduce proficiency gaps and improve academic achievement for all student groups, and
* Enhance the “STEM pipeline” of students who are interested in and well prepared for postsecondary education and careers in science, technology, engineering, and mathematics (including computer science).

As specified by DESE, the goals of the AP STEM and English program center on promoting student achievement in Advanced Placement (AP) courses and exams, especially among historically marginalized populations and school and teacher transformation related to the delivery and sustainment of AP programming.

To meet these program goals and track efforts to improve student achievement, DESE contracted with Mass Insight Education and Research (Mi) to implement tasks and responsibilities aligned with the purposes of the program. Mi aims to implement four key tasks in partner schools:

1. Increase participation and improve performance in AP science, mathematics, and ELA courses and on exams, with a focus on historically marginalized students.
2. Increase the effectiveness of AP science, mathematics, and ELA teachers.
3. Increase the number of new and/or additional AP science, mathematics, and ELA courses offered by districts and schools in the Commonwealth.
4. Develop collaborations with other existing and/or newly established AP initiatives or organizations to build a robust and collaborative support system for historically marginalized students, their parent(s)/guardian(s), and teachers.

In their work to complete these tasks, Mi is responsible for a variety of activities falling into three main tiers of assistance: (1) teacher supports, (2) student supports, and (3) school supports. Considering these three overarching types of support offered by Mi, the Year 9 evaluation study focused on further exploring the outcomes uncovered in Year 8 related to any (ELA, math, or science) AP or AP science course taking and passing for all students and historically marginalized students and whether schools participating in Mi’s program showed more students taking AP exams and courses. More specifically, this report focused on evaluating whether the following program goals were met:

1. Increase student enrollment and performance in AP STEM and English courses (and exams), particularly among historically marginalized populations.
2. Increase equity and access to AP STEM and English courses (and exams).[[1]](#footnote-1)

As part of the Year 8 evaluation, quasi-experimental analysis[[2]](#footnote-2) specific to AP course taking and passing rates showed:

* The effect of the AP STEM and English program on the AP course taking and passing rates of historically marginalized populations was mixed.[[3]](#footnote-3)
* The program had a positive effect on AP course taking and passing rates for students who are economically disadvantaged, as well as for students who are not economically disadvantaged. The rate of taking any AP course increased more for students who are not economically disadvantaged (5.62 percentage points) than it did for students who are economically disadvantaged (3.05 percentage points). Similarly, the rate of passing any AP course increased more for students who are not economically disadvantaged (4.75 percentage points) than it did for students who are economically disadvantaged (2.48 percentage points).
* The program had no effect on AP course taking or passing rates for students who are African American / Black, Hispanic/Latino, or English language learners (EL).
* The AP STEM and English program generally had a positive effect on student AP[[4]](#footnote-4) course taking and passing rates during the first year of participation, though results were mixed by subject and student group (e.g., ethnicity, EL status). The intervention did not impact the rate of AP course taking or passing after the first year of program participation.
* The AP STEM and English program had a positive effect on AP ELA and math course taking and passing rates during the first year of the intervention.
* The percentage of students *taking* ELA and math courses increased by 3.76 percentage points and 2.03 percentage points (respectively) more at participating schools than at similar non-participating schools during the first year of participation.
* The percentage of students *passing* ELA and math courses increased by 3.33 percentage points and 1.64 percentage points (respectively) more at participating schools than at similar non-participating schools during the first year of participation.
* The AP STEM and English program had no effect on AP science course taking or passing rates.

In light of these findings, this report provides a summary of descriptive quantitative analyses conducted to further explore AP course taking and passing rates—for all students and for historically marginalized students—and aims to respond to the following questions:

1. Which participating schools were highest performing (and lowest performing) with respect to any (ELA, math, or science) AP course taking and passing for all students, and for student groups of interest including African American / Black, Hispanic/Latino, English language learners, students with disabilities, and students who are economically disadvantaged?
2. Which participating schools were highest performing (and lowest performing) with respect to AP science course taking and passing for all students, and for student groups of interest including African American / Black, Hispanic/Latino, English language learners, students with disabilities, and students who are economically disadvantaged?

UMDI used secondary data from DESE to address these questions.

# Introduction

The Massachusetts Department of Elementary and Secondary Education (DESE) is engaged in numerous initiatives to increase the college and career readiness of students in the Commonwealth, to reduce proficiency gaps and improve academic achievement for all student groups, and to enhance the “STEM pipeline” of students who are interested in and well prepared for postsecondary education and careers in science, technology, engineering, and mathematics (including computer science).

One of these initiatives is the AP STEM and English program (hereafter, “the program”). As specified by DESE, the goals[[5]](#footnote-5) of the program are to:

1. Increase AP science, mathematics, and ELA course availability, particularly at schools with limited AP science, mathematics, and ELA offerings and high percentages of historically marginalized students,
2. Increase historically marginalized students’ participation in AP science, mathematics, and ELA courses, such that the demographics of these courses better reflect the diversity of the student population of the school and district,
3. Increase student performance in AP science, mathematics, and ELA courses,
4. Increase the number of students taking AP exams, particularly historically marginalized students,
5. Increase the number of students scoring a 3 or higher on AP exams, particularly underrepresented minority students and students who are economically disadvantaged,
6. Increase readiness for college-level study in science, mathematics, and ELA fields, and
7. Improve science, mathematics, and ELA teacher effectiveness, including content knowledge and pedagogical skills.

To meet these program goals and track efforts to improve student achievement, DESE contracted with Mass Insight Education and Research (Mi) to implement tasks and responsibilities aligned with the purposes of the program. Mi has administered the program since the initiative’s inception in 2007, including under the program’s previous name, Mass Math + Science Initiative’s (MMSI) “Advanced Placement Training and Awards Program.”

Mi’s first cohort of the program was comprised of eight schools during the 2008–09 academic year. The program welcomed its 13th cohort of schools during the 2020–21 academic year. While Mi has evolved their program to continue meeting the needs of participating schools, the key tasks implemented by the program have been consistent over time. Namely, Mi aims to do the following in each participating school:

1. Increase participation and improve performance in AP science, mathematics, and ELA courses and on exams, with a focus on historically marginalized students.
2. Increase the effectiveness of AP science, mathematics, and ELA teachers.
3. Increase the number of new and/or additional AP science, mathematics, and ELA courses offered by districts and schools in the Commonwealth.
4. Develop collaborations with other existing and/or newly established AP initiatives or organizations to build a robust and collaborative support system for historically marginalized students, their parent(s)/guardian(s), and teachers.

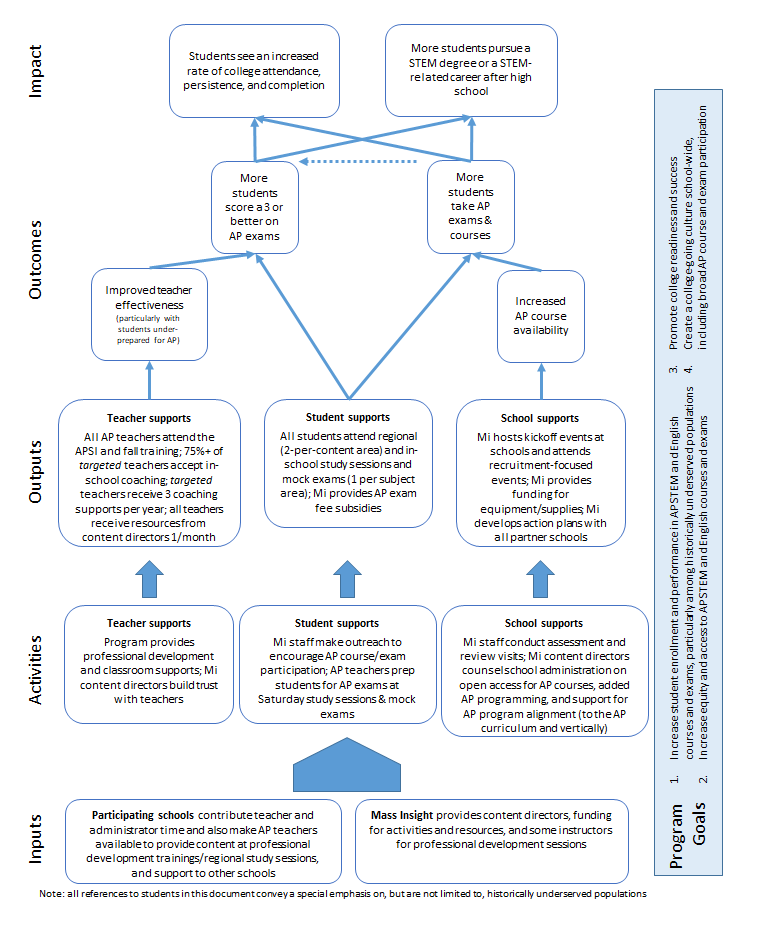
In their work to complete these tasks, Mi is responsible for a variety of activities that fall into three main tiers of assistance: (1) teacher supports, (2) student supports, and (3) school supports. Specific examples of these forms of assistance include, but are not limited to, maintaining partnerships with schools with high percentages of historically marginalized students, encouraging recruitment of historically marginalized students into AP science and mathematics classes, providing exam fee subsidies to economically disadvantaged students, and supporting professional development for STEM AP teachers.

DESE contracted with the University of Massachusetts Donahue Institute (UMDI) to conduct the evaluation of the Mi program. UMDI previously submitted interim and final evaluation reports for Years 1–8. In light of Year 8 findings, this report for the Year 9 evaluation provides a summary of the descriptive quantitative analyses conducted to explore the performance of participating schools relevant to AP course taking and passing—for all students and for historically marginalized students.

This report is organized into four main sections. The first three sections—[Evaluation Design](#_Evaluation_Design), along with [Data and Data Analysis](#_Data_and_Data), and [Methods](#_Methods)—provides an overarching description of the Year 9 analyses, and summarizes points considered in the methods of the analyses. The fourth section—[Findings](#_Findings)—presents the key results from the descriptive quantitative analyses.

# Evaluation Design

The Year 9 evaluation was designed to expand upon the work completed during the last two years—Year 7 and Year 8. As part of the Year 8 evaluation, a quasi-experimental analysis was used to assess program impacts on AP course taking and passing for participating schools.[[6]](#footnote-6) The current evaluation further builds on the analyses completed during Year 8 and is directly related to the program’s logic model (Figure 1), which was updated during Year 7. Please note, the logic model is aspirational. The extent to which the activities and outcomes suggested in this model have been implemented/achieved by MassInsight and/or participating schools is not entirely clear to UMDI.

**Figure 1. AP STEM and English Program Logic Model**

The Year 9 evaluation study further explores a part of one of the four outcomes included in the logic model (see Figure 1 above)—that more students at participating schools will take AP exams[[7]](#footnote-7) and courses. More specifically, the current study sheds some light on the ways in which the following two program goals are being met:

1. Increase student enrollment and performance in AP STEM and English courses and exams, particularly among historically marginalized populations.
2. Increase equity and access to AP STEM and English courses and exams.

Evaluation questions used to guide our work during Year 9 include:

1. Which participating schools were highest performing (and lowest performing) with respect to any (ELA, math, or science) AP course taking and passing for all students, and for student groups of interest including African American / Black, Hispanic/Latino, English language learners, students with disabilities, and students who are economically disadvantaged?
2. Which participating schools were highest performing (and lowest performing) with respect to AP science course taking and passing for all students, and for student groups of interest including African American / Black, Hispanic/Latino, English language learners, students with disabilities, and students who are economically disadvantaged?

To address these questions, the Year 9 report provides descriptive quantitative information summarizing (1) the identification and application of definitions of “highest performing” and “lowest performing” schools relevant to AP course taking and passing, (2) the phenomenon of schools with varying levels of performance, and (3) similarities among schools having achieved various levels of performance.

# Data and Data Analysis

This report includes a summary of descriptive analyses of schools that participated in Mi programing. Schools were characterized as highest performing or lowest performing based on AP course taking or passing for any (ELA, math, or science) AP or AP science course for:

all students,

students who are African American / Black,

students who are Hispanic/Latino,

English language learners,

students with disabilities, or

students who are economically disadvantaged.

This performance level is further examined using characteristics specific to the school and the school’s AP course taking and passing rates (i.e., school size (number of students), student group size relative to school size, urban, suburban, or rural designation, and percent takers (or passers) before intervention).

These descriptive analyses are based on AP course data, from the Student Course Schedule (SCS) data file, provided by DESE from SY11 to SY19.[[8]](#footnote-8) Data were merged with corresponding SIMS data to identify key demographic information for participating students—where participating students were those in grades 9–12, and were enrolled in schools that are part of the AP STEM and English program. The newly merged data file included key information on which students were taking AP ELA, math, and science courses takers and which students were considered AP course passers. To be considered a course passer a student must have (1) completed the AP course, (2) earned credit, and (3) received a passing letter or numeric grade within the AP course.

Exploratory analyses were conducted to identify various definitions of “highest performing” and “lowest performing” participating schools relevant to AP course taking and passing. These analyses—which are described in further detail in the Methods section—were completed with schools that started the intervention during SY15, SY16, or SY17 (Cohorts VII–IX). Earlier and later cohorts are not included since the intention was to examine changes in AP course taking and passing over time from one year before participation to the end of (i) one year of participation, and (ii) three years after participation. In total, 55 participating schools were included. The actual number of schools included in each analysis varied by subject, by outcome (taking/passing), and by student group.

Additional restrictions were placed on the data for the exploration of AP course taking and passing and students who are economically disadvantaged. The low-income measure was available SY15 and later. As a result, the analyses for students who are economically disadvantaged were completed with schools that started the intervention during SY16 or SY17 (Cohorts VIII–IX). Specifically, only 18 participating schools were included for analyses involving students who are economically disadvantaged.

This report summarizes the results of descriptive analyses that explored the performance of schools participating in AP STEM and English relevant to AP course taking and passing. Quantitative results are presented by subject and student group, and explore the performance of participating schools relevant to AP course taking and passing as follows:

* the percentage point change in percentage—from the year before participation began—of students taking and passing any (ELA, math, or science) AP course or AP science course, for all students and historically marginalized students;
* the classification of participating schools as “highest performing” or “lowest performing” using the percentage point change in AP course taking and passing rates;
* identifying variability in the performance of participating schools relevant to AP course taking and passing—for all students and historically marginalized students;
* examining “highest performing” and “lowest performing” participating schools for characteristics specific to the school and the school’s AP course taking and passing rates (i.e., school size, student group size, rural-suburban classification, and AP course taking(passing) rate pre-intervention).

A summary of results is presented in the “Findings” section. A full set of results are provided in [Appendix A](#_Appendix_A:_Percentage) and [Appendix B](#_Appendix_B:_Assessing).

# Methods

The AP STEM and English program is primarily a school-level intervention. As such, descriptive and exploratory analyses of participation and outcome data were conducted at the school level. Specifically, the performance of participating AP STEM and English schools relevant to AP course taking and passing—for all students and for historically marginalized student groups—were conducted at the school level.

During Year 8, the impacts of the AP STEM and English program were assessed for both AP course taking rates and for AP course passing rates. Rates were calculated as the number of students taking/passing an AP ELA, math, or science course divided by the total number of enrolled high school students in a school.[[9]](#footnote-9),[[10]](#footnote-10) These calculated AP course taking and passing rates are the foundation of the current analysis.

The performance of participating AP STEM and English schools relevant to AP course taking and passing—for all students and student groups of interest—were explored to identify the schools that were “highest performing” and “lowest performing.” While we understand that the terms “highest performing” and “lowest performing” do not fully capture the complexities of AP course taking and passing, for this analysis they will be used to describe the commonalities and differences among various school AP course passing and taking rates. These analyses further quantify (descriptively) the variation in performance changes in AP course taking and passing that schools experience over time. This analysis does not intend to illuminate *why* this happens, but to illustrate the extent to which it is a “real” phenomenon, and perhaps to identify similarities among schools that have achieved various outcomes.

## Measures

The percentage point change in AP course taking or passing rates from one year before intervention to either one year or three years after intervention formed the base for exploring the performance of participating schools. The analyses focused on two course types based on Year 8 analysis results: (1) any ELA, math, or science AP course, or (2) AP science course. Measures were calculated for all students and specific student groups of interest: (1) African American / Black, (2) Hispanic/Latino, (3) English language learners, (4) students with disabilities, and (5) students who are economically disadvantaged. This resulted in 48 possible measures on which to explore the performance of participating schools relevant to AP course taking and passing.

## Highest Performing and Lowest Performing Cutoffs

The highest and lowest performing schools were determined for each of the measures using the top and bottom quartiles (25%) of observations, respectively. In this way, schools were classified as having higher, middle, or lower levels of change in rates of course taking and passing one year and three years after the intervention. Schools appearing in the bottom quartile were described as “lowest performing” for that measure. Schools appearing in the top quartile of observations were described as “highest performing” for that measure. Schools with values for a measure being in the middle 50% of observations saw moderate or no change in performance and were described as “middle performing.” In some instances, the value indicating the boundary of the bottom quartile or top quartile of observations was the value of the measure for more than one school (most commonly they shared a value of zero). In these instances, these schools were not included in the lowest or highest performing category.

## Characteristics

A set of four characteristics were considered when looking for similarities among the schools that achieved certain performance levels:

1. school size (number of students),
2. student group size relative to school size,
3. urban-suburban-rural designation, and
4. percent takers (or passers) before intervention.

Other characteristics could be considered in future analyses such as dropout rates, per pupil expenditures, and student growth percentile. These were not used in the current analyses due to the scope of the evaluation.

Three of the characteristics used—school size (number of students), student group size relative to school size, and percent takers (or passers) before intervention—were determined using the prepared dataset based on SCS and SIMS data. These three characteristics are meant to simply describe the schools quantitatively and are also (potentially) relevant to AP course taking and passing.

The remaining characteristic, urban-suburban-rural designation was determined for each school using the 2019 data from National Center for Educational Statistics (NCES).[[11]](#footnote-11) The NCES locale framework is based on the U.S. Census Bureau definition of urban and rural. The locale classifications and criteria of the NCES locale framework are composed of four basic types (City, Suburban, Town, and Rural) that each contains three subtypes. These subtypes are differentiated by size (in the case of City and Suburban assignments) and proximity (in the case of Town and Rural assignments). For this research, the NCES locale framework was collapsed into a basic urban, suburban, or rural trichotomy. While most schools fit into one specific category, three towns (Lee, Nantucket, and North Brookfield) did not have clearly assigned designations (i.e., they were between rural/town). Using additional information known about the area—surrounding business and terrain, location within Massachusetts, other characteristics of the location—it was determined that, for this analysis, they should be coded as rural areas.

# Findings

This section presents findings related to participating schools’ performance levels—particularly with historically marginalized students—relevant to AP course taking and passing. Findings are organized into three subsections:

* The first subsection summarizes the “highest performing” and “lowest performing” classifications formed based on the results of descriptive/exploratory analyses.
* The second subsection summarizes observed instances of schools with varying levels of performance under certain conditions.
* The third subsection explores the relationship between school performance levels and school characteristics of interest.

When interpreting the findings presented within this section, it is important to consider several notes about AP course taking and passing rates, including:

1. Students at participating schools were considered an AP course taker if they were enrolled in one or more AP ELA, math, or science course. As the AP STEM and English program aims to increase the proportion of students enrolling in AP courses, the percentage of AP STEM and English course takers was calculated using the total number of students enrolled in 9th–12th grade at the school as the denominator—as opposed to using the total number of students enrolled in AP courses.
2. Students at participating schools were considered an AP course passer if they (1) completed the course, (2) earned credit, and (3) received a passing letter or numeric grade within at least one of the AP STEM and English courses they were enrolled in. The percentage of AP STEM and English course passers is defined as the number of students passing one or more AP course divided by the total number of students enrolled in 9th–12th grade at the school.

To see full results from the descriptive/exploratory analyses of all AP course taking and passing descriptive/exploratory analyses, please see [Appendix A](#_Appendix_A:_Percentage) and [Appendix B](#_Appendix_B:_Assessing).

|  |
| --- |
| Summary of Key Findings |
| * AP course (ELA, math, or science) taking and passing rates increased for most participating schools after the intervention started (assessed after one and three years of participation). * When considering changes in AP course taking and passing rates for all students, students who are African American / Black, students who are Hispanic/Latino, and students with disabilities, the highest performing schools were nearly always those that were not urban. * When considering changes in AP course taking and passing rates for students who are African American / Black, and students who are Hispanic/Latino, the highest performing schools were generally those that had lower percentages of individuals from those student groups. * Change in AP course taking and passing rates varied by student group of interest. There was less variation in change at participating schools for English language learners and students who are economically disadvantaged than for students from other groups (African American / Black, Hispanic/Latino, and students with disabilities). * Incidences of schools being assigned to the highest performance level for one student group / time interval and the lowest performance level for another student group / time interval were infrequent. |

## Highest Performing and Lowest Performing Schools

The percentage point change in AP course taking and passing rates from the year before intervention to one year or three years after intervention was calculated for (1) any (ELA, math, or science) AP course and (2) AP science course. These outcomes were assessed for each of the following groups separately:

1. all students,
2. African American / Black,
3. Hispanic/Latino,
4. English language learners,
5. students with disabilities, and
6. students who are economically disadvantaged.

The top and bottom quartiles were used to identify schools that were “highest performing” and “lowest performing” with respect to each specific measure (please see [the](#_Appendix_B:_Methods) [Methods](#_Methods) section for further detail).

In general, the number of highest (or lowest) performing schools varied across taking and passing, student group, and time interval due to (1) number of schools in the sample, and (2) number of schools in the sample having a student group with .[[12]](#footnote-12) Please see [Appendix A](#_Appendix_A:_Percentage) to view school lists and values for all measures.

As shown in Figure 2, one year after intervention, the range of participating schools percentage point change in AP course taking and passing from the year before intervention was bigger for all students, students who are African American / Black and students who are Hispanic/Latino and smaller for English language learners, students with disabilities, and students who are economically disadvantaged for any (ELA, math, or science) AP and AP science course takers and passers.[[13]](#footnote-13) In all cases, the range for students who are African American / Black was smaller than the range for students who are Hispanic/Latino. Further, both the minimum and maximum percentage point change values observed for students who are Hispanic/Latino were higher and lower, respectively, than for students who are African American / Black.

#### Figure 2

*Participating Schools Percentage Point Change of Any (ELA, math, or science) AP and AP Science Course Takers and Passers,* One Year After Intervention*, by Student Group*

|  |  |
| --- | --- |
| A – Any (ELA, math, or science) AP course takers | B – AP science course takers |
| Chart, box and whisker chart  Percentage point change on the y-axis and student groups on the x-axis. | Chart, box and whisker chart  Percentage point change on the y-axis and student groups on the x-axis. |
| C – Any (ELA, math, or science) AP course passers | D – AP science course passers |
| Chart, box and whisker chart  Percentage point change on the y-axis and student groups on the x-axis. | Chart, box and whisker chart  Percentage point change on the y-axis and student groups on the x-axis. |

#### Figure 3

*Participating Schools Percentage Point Change of Any (ELA, math, or science) AP and AP Science Course Takers and Passers,* Three Years After Intervention*, by Student Group*

|  |  |
| --- | --- |
| A – Any (ELA, math, or science) AP course takers | B – AP science course takers |
| Chart, box and whisker chart  Percentage point change on the y-axis and student groups on the x-axis. | Chart, box and whisker chart  Percentage point change on the y-axis and student groups on the x-axis. |
| C – Any (ELA, math, or science) AP course passers | D – AP science course passers |
| Chart, box and whisker chart  Percentage point change on the y-axis and student groups on the x-axis. | Chart, box and whisker chart  Percentage point change on the y-axis and student groups on the x-axis. |

For most measures, the upper bound for the bottom quartile—when identifying the lowest performing schools—was approximately 0 percentage points (see [Figures 2](#_Figure_2) and [3](#_Figure_3)),[[14]](#footnote-14) indicating little to no change in taking or passing rates for the time interval, subject, and student group considered. In a few cases, the cutoff for identifying the lowest performing schools was slightly above or below zero.

The lower bound, or the cutoff, for the top quartile identifying the highest performing schools (as illustrated in [Figures 2](#_Figure_2) and [3](#_Figure_3) above) revealed a slightly different pattern.

1. For all students, students who are African American / Black, and students who are Hispanic/Latino, any AP course takers and passers had similar cutoff values after the intervention (Panels A and C of [Figures 2](#_Figure_2) and [3](#_Figure_3)).
2. Cutoff values for students who are economically disadvantaged were similar for any AP course takers and passers (Panels A and C of [Figures 2](#_Figure_2) and [3](#_Figure_3)).
3. EL and SWD had lower cutoffs values for any AP course takers and passers than other student groups (Panels A and C of [Figures 2](#_Figure_2) and [3](#_Figure_3)).
4. EL, SWD, and students who are economically disadvantaged had lower cutoff values (close to 0) for the highest performing schools for AP science course taking and passing (Panels B and D of [Figures 2](#_Figure_2) and [3](#_Figure_3)).
5. Participating schools considered to be highest performing with respect to AP science course taking (or passing), one year after intervention, had an increase of 4.8, 3.7, and 2.6 (3.9, 2.8, and 2.1) percentage points for all students, students who are African American / Black, and students who are Latino, respectively (Panels B and D of [Figure 2](#_Figure_2) ).

These descriptive results are consistent with the following quasi-experimental results from the Year 8 AP course taking and passing analyses:

* The AP STEM and English program had no effect on AP science course taking or passing rates.
* The effects of the AP STEM and English program on the AP course taking and passing rates of historically marginalized populations were mixed;
  + The program had no effect on AP course taking or passing rates for students who are African American / Black, Hispanic/Latino, or English language learners.

## Schools Assigned to Varying Performance Levels

In the process of analyzing the data informing the highest performing and lowest performing classifications, we observed that some schools that were assigned to the highest performance level for one student group / time interval were assigned to the lowest performance level for another student group / time interval. We offer a description of this phenomenon here in an attempt to provide some insight into performance trends experienced at participating schools. For example, one year after the intervention, school A was highest performing, but after three years the school was lowest performing. We reviewed the data to identify cases in which a school experienced disparate levels of performance between:

* Students who are African American / Black and students who are Hispanic/Latino,
* AP course taking and passing, and
* Outcomes observed one year after intervention and outcomes observed three years after intervention.

Overall, incidences of schools being assigned to the highest performance level for one student group / time interval and the lowest performance level for another student group / time interval were infrequent. However, when this phenomenon was observed, it was frequently observed in multiple categories.

This analysis of variation in school performance does not provide additional information about these student groups. Instead, this analysis highlights opportunities for future research. For example, suppose after the first year, we observe at School A highest performing results for students who are African American / Black but lowest performing results for students who are Hispanic/Latino. This could indicate that the school is successfully reaching students who are African American / Black through the intervention, and that there may be something happening at the local level (e.g., school culture, teaching) that has prevented students who are Hispanic/Latino from achieving the same results as their Black / African American peers. In such a case, one possibility for future research could be to further examine how the program is being implemented at that school.

##### African American / Black and Hispanic/Latino

We compared the school-level outcome data (rates of taking and passing any AP course—ELA, math, or science—or any AP science course) of students who are African American / Black to that of students who are Hispanic/Latino for possible variation in performance. We checked for variation between performance one year after joining the intervention and three years after joining the intervention. Five schools[[15]](#footnote-15) were found to be highest performing for students who are African American / Black but lowest performing for students who are Hispanic/Latino. Three schools[[16]](#footnote-16) were highest performing for students who are Hispanic/Latino but lowest performing for students who are African American / Black.

##### AP course taking and passing

When observing variation in performance levels between AP course taking and passing, the type of the variation is important. If a school is highest performing for *AP* *course taking* for student group “A” one year after the intervention, then one might also expect for the school to be highest performing for *AP course passing* for student group “A” one year after the intervention as well. This type of variation could indicate that while a school is experiencing positive results in AP course taking, there are certain student groups not achieving the same results as their peers: there is a gap between the expected impact of the intervention and the observed impact of the intervention, either between student groups of particular interest or over time. In general, this type of variation was not the norm. Only two out of the 55 schools[[17]](#footnote-17) were observed to have some student groups who were highest performing for AP course taking and lowest performing for AP course passing.

Future research could more closely examine how the intervention is implemented with/at these schools, as well as other factors that may impact student performance. In contrast, one school[[18]](#footnote-18) was lowest performing for AP course taking but highest performing for AP course passing for specific student groups, which may indicate a need to refine recruitment practices for AP courses at this school.

##### One year and three years after joining the intervention

The final type of variation assessed was that between AP course taking or passing one year after the intervention and AP course taking or passing three years after the intervention. Six schools[[19]](#footnote-19) were observed to be lowest performing one year after starting the intervention and highest performing three years after starting the intervention for specific student groups; five schools[[20]](#footnote-20) were observed to be highest performing one year after starting the intervention and lowest performing three years after starting the intervention for specific student groups; and both types of variation were observed at two schools[[21]](#footnote-21) for different student groups (e.g., student group A in one school was lowest performing for any AP course taking one year after starting the intervention but highest performing three years after starting the intervention, while in the same school student group B was highest performing one year after starting the invention but lowest performance three years after starting the intervention).

Further research on variation in school performance may provide insight about how schools can engage historically marginalized student groups through this intervention to improve AP course taking and passing outcomes.

## School Performance Levels and Characteristics

What follows is an attempt to identify similarities among schools that achieved various performance levels. A set of four characteristics were considered when assessing similarities:

1. School size (number of students)
2. Student group size relative to school size
3. Urban-suburban-rural designation
4. Percent takers (or passers) before intervention

Using scatterplots, the 48 measures—varying course type (2), taking or passing (2), one or three years after intervention (2), and student group (6)—were plotted against each of the four characteristics, resulting in 184 figures.[[22]](#footnote-22) Highest, middle, and lowest performing schools were indicated on the scatterplots using symbols. Numbers were used to identify schools. Please [Appendix B](#_Appendix_B:_Assessing) to view all scatterplots.

Of the four characteristics, school size (number of students) offered the least insight. There was no clear pattern/relationship between school size and the change in AP course taking/passing rates after intervention.

Interestingly, schools with higher percentages of students who are African American / Black and/or Hispanic/Latino were generally observed to be middle performing or lowest performing. This pattern holds for any AP or AP science course taking and passing, one or three years after intervention, for students who are African American / Black, and students who are Hispanic/Latino with a few exceptions. Further, schools with a lower percent of EL (<15%) were generally observed to be middle performing or lowest performing. In a similar vein, schools with less than 40% students who are economically disadvantaged tended to be highest performing. Schools with higher proportions of students who are African American / Black, Hispanic/Latino, EL, or economically disadvantaged were not generally observed to be highest performing.

In general, highest performing schools tended to be suburban schools, with a few being rural and the occasional highest performing school being urban. Exceptions were observed for two student groups—EL and students who are economically disadvantaged. For EL, most of the schools in the samples were urban, with approximately 1.5 times as many urban schools as suburban and rural schools combined. As such, the majority of highest performing schools were urban. Similarly, for students who are economically disadvantaged, most of the schools in the samples were suburban—with 2.5 times as many suburban schools as rural and urban combined. These findings suggest a need for further research since a primary goal of the AP STEM and English program is to improve AP course taking and passing for historically marginalized students—including those in urban settings.

Lastly, there was no clear pattern/relationship between AP course taking/passing rates prior to intervention and change in AP course taking/passing rates either one year or three years after intervention. In some cases, it appears that highest performing schools tended to be schools where the percent of AP course takers (or passers) before intervention was small, but this observation was not consistent across all scatterplots.

# Appendices

[Appendix A: Percentage point change in Any (ELA, Math, or Science) AP or AP Science course taking or passing—One year and three years after intervention](#_Appendix_A:_Percentage)

[Table A.1. Percentage point change in Any (ELA, math, or science) AP or AP science course taking or passing—Summary](#_Table_A.1._Percentage)

[Table A.2. Percent point change in Any AP course taking, one year after intervention](#_Table_A.2._Percent)

[Table A.3. Percent point change in AP Science course taking, one year after intervention](#_Table_A.3._Percent)

[Table A.4. Percent point change in Any AP course passing, one year after intervention](#_Table_A.4._Percent)

[Table A.5. Percent point change in AP Science course passing, one year after intervention](#_Table_A.5._Percent)

[Table A.6. Percent point change in Any AP course taking, three years after intervention](#_Table_A.6._Percent)

[Table A.7. Percent point change in AP Science course taking, three years after intervention](#_Table_A.7._Percent)

[Table A.8. Percent point change in Any AP course passing, three years after intervention](#_Table_A.8._Percent)

[Table A.9. Percent point change in AP Science course passing, three years after intervention](#_Table_A.9._Percent)

[Appendix B: Assessing changes in Any AP course or AP Science course taking or passing for priority student groups—Scatterplots](#_Appendix_B:_Assessing)

[Table B.1. School key](#_Table_B.1._School)

[Figure B.1.1. All students, Any (ELA, Math, or Science) AP course taking](#_Figure_B.1.1._All)

[Figure B.1.2. All students, AP Science course taking](#_Figure_B.1.2._All)

[Figure B.2.1. All students, Any (ELA, Math, or Science) AP course passing](#_Figure_B.2.1._All)

[Figure B.2.2. All students, AP Science course passing](#_Figure_B.2.2._All)

[Figure B.3.1. African American / Black students, Any (ELA, Math, or Science) AP course taking](#_Figure_B.3.1._African)

[Figure B.3.2. African American / Black students, AP Science course taking](#_Figure_B.3.2._African)

[Figure B.4.1. African American / Black students, Any (ELA, Math, or Science) AP course passing](#_Figure_B.4.1._African)

[Figure B.4.2. African American / Black students, AP Science course passing](#_Figure_B.4.2._African)

[Figure B.5.1. Hispanic/Latino, Any (ELA, Math, or Science) AP course taking](#_Figure_B.5.1._Hispanic/Latino,)

[Figure B.5.2. Hispanic/Latino, AP Science course taking](#_Figure_B.5.2._Hispanic/Latino,)

[Figure B.6.1. Hispanic/Latino, Any (ELA, Math, or Science) AP course passing](#_Figure_B.6.1._Hispanic/Latino,)

[Figure B.6.2. Hispanic/Latino, AP Science course passing](#_Figure_B.6.2._Hispanic/Latino,)

[Figure B.7.1. English language learners, Any (ELA, Math, or Science) AP course taking](#_Figure_B.7.1._English)

[Figure B.7.2. English language learners, AP Science course taking](#_Figure_B.7.2._English)

[Figure B.8.1. English language learners, Any (ELA, Math, or Science) AP course passing](#_Figure_B.8.1._English)

[Figure B.8.2. English language learners, AP Science course passing](#_Figure_B.8.2._English)

[Figure B.9.1. Students with disabilities, Any (ELA, Math, or Science) AP course taking](#_Figure_B.9.1._Students)

[Figure B.9.2. Students with disabilities, AP Science course taking](#_Figure_B.9.2._Students)

[Figure B.10.1. Students with disabilities, Any (ELA, Math, or Science) AP course passing](#_Figure_B.10.1._Students)

[Figure B.10.2. Students with disabilities, AP Science course passing](#_Figure_B.10.2._Students)

[Figure B.11.1. Students who are economically disadvantaged, Any (ELA, Math, or Science) AP course taking](#_Figure_B.11.1._Students)

[Figure B.11.2. Students who are economically disadvantaged, AP Science course taking](#_Figure_B.11.2._Students)

[Figure B.12.1. Students who are economically disadvantaged, Any (ELA, Math, or Science) AP course passing](#_Figure_B.12.1._Students)

[Figure B.12.2. Students who are economically disadvantaged, AP Science course passing](#_Figure_B.12.2._Students)

#### Appendix A: Percentage point change in Any (ELA, Math, or Science) AP or AP Science course taking or passing—One year and three years after intervention

Appendix A summarizes the descriptive statistics for schools included in the Year 9 analyses. The first table provides a high-level summary, while the subsequent tables present the percentage point change of takers and passers one year and three years after intervention for each student group of interest. Each table presents the schools ordered by percentage point change with the highest performing and lowest performing schools indicated. Please see [Highest Performing and Lowest Performing Cutoffs](#_Highest_Performing_and) for more information.

[Table A.1. Percentage point change in Any (ELA, math, or science) AP or AP science course taking or passing—Summary](#_Table_A.1._Percentage)

[Table A.2. Percent point change in Any AP course taking, one year after intervention](#_Table_A.2._Percent)

[Table A.3. Percent point change in AP Science course taking, one year after intervention](#_Table_A.3._Percent)

[Table A.4. Percent point change in Any AP course passing, one year after intervention](#_Table_A.4._Percent)

[Table A.5. Percent point change in AP Science course passing, one year after intervention](#_Table_A.5._Percent)

[Table A.6. Percent point change in Any AP course taking, three years after intervention](#_Table_A.6._Percent)

[Table A.7. Percent point change in AP Science course taking, three years after intervention](#_Table_A.7._Percent)

[Table A.8. Percent point change in Any AP course passing, three years after intervention](#_Table_A.8._Percent)

[Table A.9. Percent point change in AP Science course passing, three years after intervention](#_Table_A.9._Percent)

#### Table A.1. Percentage point change in any (ELA, math, or science) AP or AP science course taking or passing—Summary

|  | **Descriptive Statistics (Restricted Group Size)** | | | | | | | | | | | | | **Cutoff** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **N** | **Minimum** | **Maximum** | **Mean** | **Median** | **Std. Deviation** | **Skewness** | | **Kurtosis** | | **Quartiles** | | | **Max of lowest** | **Min of highest** |
| **Statistic** | **Std. Error** | **Statistic** | **Std. Error** | **25** | **50** | **75** |
|  | **AP course takers, One year after intervention** | | | | | | | | | | | | |  | |
| ***Any AP course takers*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| All | 55 | -3.37 | 21.47 | 5.39 | 5.19 | 4.69 | 0.69 | 0.32 | 1.49 | 0.63 | 2.16 | 5.19 | 8.43 | 2.16 | 8.43 |
| African American / Black | 34 | -11.30 | 17.47 | 3.04 | 2.03 | 6.59 | 0.42 | 0.40 | 0.25 | 0.79 | -0.28 | 2.03 | 6.06 | -0.28 | 6.06 |
| Hispanic/Latino | 48 | -15.91 | 25.66 | 2.71 | 1.77 | 7.41 | 0.63 | 0.34 | 2.14 | 0.67 | -0.46 | 1.77 | 5.33 | -0.46 | 5.33 |
| English language learners | 22 | -5.95 | 3.75 | -0.18 | 0.00 | 2.34 | -1.00 | 0.49 | 1.75 | 0.95 | -0.14 | 0.00 | 0.80 | -0.14 | 0.80 |
| Students with disabilities | 55 | -7.02 | 4.73 | 0.51 | 0.12 | 1.76 | -1.00 | 0.32 | 5.71 | 0.63 | 0.00 | 0.12 | 1.26 | -0.02\* | 1.26 |
| Students who are economically disadvantaged | 18 | -5.41 | 7.34 | 0.75 | 0.40 | 3.20 | 0.18 | 0.54 | -0.09 | 1.04 | -1.56 | 0.40 | 3.19 | -1.56 | 3.19 |
| ***AP Science course takers*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| All | 55 | -3.00 | 12.53 | 2.21 | 1.51 | 3.44 | 0.81 | 0.32 | 0.39 | 0.63 | -0.23 | 1.51 | 4.81 | -0.23 | 4.81 |
| African American / Black | 34 | -7.14 | 17.36 | 1.48 | 0.34 | 4.96 | 1.07 | 0.40 | 2.11 | 0.79 | -0.67 | 0.34 | 3.71 | -0.67 | 3.71 |
| Hispanic/Latino | 48 | -25.00 | 18.30 | 0.59 | 0.34 | 6.15 | -1.13 | 0.34 | 6.63 | 0.67 | -1.17 | 0.34 | 2.60 | -1.17 | 2.60 |
| English language learners | 22 | -4.41 | 3.10 | 0.02 | 0.00 | 1.50 | -0.91 | 0.49 | 3.52 | 0.95 | 0.00 | 0.00 | 0.05 | -0.54\* | 0.05 |
| Students with disabilities | 55 | -7.02 | 2.94 | 0.09 | 0.00 | 1.34 | -2.63 | 0.32 | 14.05 | 0.63 | 0.00 | 0.00 | 0.75 | -0.75\* | 0.75 |
| Students who are economically disadvantaged | 18 | -5.26 | 5.04 | -0.59 | -0.72 | 2.02 | 0.56 | 0.54 | 4.13 | 1.04 | -1.37 | -0.72 | 0.11 | -1.37 | 0.11 |
|  | **AP course takers, Three years after intervention** | | | | | | | | | | | | |  | |
| ***Any AP course takers*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| All | 55 | -12.36 | 26.93 | 7.76 | 7.68 | 6.98 | 0.18 | 0.32 | 1.40 | 0.63 | 3.62 | 7.68 | 11.14 | 3.62 | 11.14 |
| African American / Black | 32 | -21.43 | 50.00 | 6.04 | 5.20 | 12.61 | 1.13 | 0.41 | 4.70 | 0.81 | 1.08 | 5.20 | 8.56 | 1.08 | 8.56 |
| Hispanic/Latino | 49 | -11.82 | 19.65 | 3.97 | 4.24 | 6.80 | -0.14 | 0.34 | 0.40 | 0.67 | -0.46 | 4.24 | 9.00 | -0.46 | 9.00 |
| English language learners | 23 | -2.29 | 23.84 | 2.05 | 0.00 | 5.77 | 3.04 | 0.48 | 9.81 | 0.93 | 0.00 | 0.00 | 1.92 | -0.48\* | 1.92 |
| Students with disabilities | 55 | -5.57 | 12.33 | 1.14 | 0.64 | 3.01 | 1.16 | 0.32 | 3.68 | 0.63 | 0.00 | 0.64 | 1.85 | -0.09\* | 1.85 |
| Students who are economically disadvantaged | 18 | -12.21 | 20.62 | 3.07 | 2.46 | 6.85 | 0.37 | 0.54 | 2.39 | 1.04 | -1.22 | 2.46 | 6.63 | -1.22 | 6.63 |
| ***AP Science course takers*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| All | 55 | -5.51 | 14.74 | 3.60 | 2.95 | 4.60 | 0.60 | 0.32 | -0.25 | 0.63 | 0.30 | 2.95 | 7.02 | 0.30 | 7.02 |
| African American / Black | 32 | -14.29 | 28.57 | 2.43 | 1.98 | 7.43 | 1.33 | 0.41 | 4.83 | 0.81 | -0.45 | 1.98 | 4.67 | -0.45 | 4.67 |
| Hispanic/Latino | 49 | -16.67 | 20.00 | 1.02 | 0.46 | 5.32 | 0.11 | 0.34 | 4.57 | 0.67 | -0.78 | 0.46 | 3.13 | -0.78 | 3.13 |
| English language learners | 23 | -2.70 | 23.84 | 1.84 | 0.00 | 5.29 | 3.64 | 0.48 | 14.63 | 0.93 | 0.00 | 0.00 | 1.28 | -0.14\* | 1.28 |
| Students with disabilities | 55 | -5.57 | 8.22 | 0.47 | 0.00 | 2.03 | 1.57 | 0.32 | 6.71 | 0.63 | 0.00 | 0.00 | 0.69 | -0.09\* | 0.69 |
| Students who are economically disadvantaged | 18 | -8.29 | 5.82 | -0.88 | -0.65 | 2.94 | -0.36 | 0.54 | 2.39 | 1.04 | -2.39 | -0.65 | 0.95 | -2.39 | 0.95 |
|  | **AP course passers, One year after intervention** | | | | | | | | | | | | |  | |
| ***Any AP course takers*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| All | 55 | -4.47 | 21.47 | 4.76 | 4.55 | 4.89 | 0.48 | 0.32 | 1.45 | 0.63 | 1.76 | 4.55 | 7.58 | 1.76 | 7.58 |
| African American / Black | 34 | -6.53 | 14.29 | 3.06 | 2.19 | 5.38 | 0.50 | 0.40 | -0.26 | 0.79 | -0.18 | 2.19 | 6.04 | -0.18 | 6.04 |
| Hispanic/Latino | 48 | -25.00 | 22.21 | 2.00 | 1.14 | 7.82 | -0.08 | 0.34 | 3.11 | 0.67 | -2.02 | 1.14 | 5.39 | -2.02 | 5.39 |
| English language learners | 22 | -5.44 | 3.64 | -0.22 | 0.00 | 2.22 | -1.03 | 0.49 | 1.67 | 0.95 | -0.14 | 0.00 | 0.67 | -0.14 | 0.67 |
| Students with disabilities | 55 | -3.51 | 4.73 | 0.41 | 0.04 | 1.40 | 0.10 | 0.32 | 2.67 | 0.63 | 0.00 | 0.04 | 1.21 | -0.02\* | 1.21 |
| Students who are economically disadvantaged | 18 | -5.41 | 6.04 | -0.20 | 0.24 | 3.81 | 0.07 | 0.54 | -1.39 | 1.04 | -4.21 | 0.24 | 2.98 | -4.21 | 2.98 |
| ***AP Science course takers*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| All | 55 | -6.84 | 12.53 | 1.71 | 1.03 | 3.46 | 0.71 | 0.32 | 1.21 | 0.63 | -0.42 | 1.03 | 3.86 | -0.42 | 3.86 |
| African American / Black | 34 | -5.02 | 13.91 | 1.40 | 0.20 | 4.37 | 1.15 | 0.40 | 1.75 | 0.79 | -0.42 | 0.20 | 2.81 | -0.42 | 2.81 |
| Hispanic/Latino | 48 | -25.00 | 15.18 | 0.43 | 0.06 | 5.62 | -1.47 | 0.34 | 8.84 | 0.67 | -1.44 | 0.06 | 2.12 | -1.44 | 2.12 |
| English language learners | 22 | -3.59 | 2.49 | -0.22 | 0.00 | 1.17 | -1.14 | 0.49 | 4.19 | 0.95 | 0.00 | 0.00 | 0.00 | -0.54\* | 0.00 |
| Students with disabilities | 55 | -3.51 | 2.21 | 0.12 | 0.00 | 0.96 | -0.79 | 0.32 | 3.41 | 0.63 | 0.00 | 0.00 | 0.64 | -0.48\* | 0.64 |
| Students who are economically disadvantaged | 18 | -5.26 | 3.75 | -1.39 | -1.06 | 2.16 | 0.17 | 0.54 | 0.79 | 1.04 | -3.19 | -1.06 | 0.00 | -3.19 | 0.00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | **AP course passers, Three years after intervention** | | | | | | | | | | | | |  | |
| ***Any AP course takers*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| All | 55 | -10.84 | 26.93 | 7.25 | 6.17 | 6.64 | 0.43 | 0.32 | 1.09 | 0.63 | 2.35 | 6.17 | 10.03 | 2.35 | 10.03 |
| African American / Black | 32 | -14.29 | 42.86 | 6.12 | 4.46 | 10.99 | 1.53 | 0.41 | 4.01 | 0.81 | 1.34 | 4.46 | 7.77 | 1.34 | 7.77 |
| Hispanic/Latino | 49 | -10.45 | 19.12 | 3.73 | 3.59 | 6.18 | 0.15 | 0.34 | 0.04 | 0.67 | -0.11 | 3.59 | 8.14 | -0.11 | 8.14 |
| English language learners | 23 | -2.18 | 15.12 | 1.17 | 0.00 | 3.48 | 3.20 | 0.48 | 12.17 | 0.93 | 0.00 | 0.00 | 1.92 | -0.76\* | 1.92 |
| Students with disabilities | 55 | -3.64 | 9.59 | 0.92 | 0.53 | 2.28 | 1.26 | 0.32 | 3.78 | 0.63 | 0.00 | 0.53 | 1.51 | -0.09\* | 1.51 |
| Students who are economically disadvantaged | 18 | -9.92 | 17.65 | 2.32 | 2.30 | 6.25 | 0.41 | 0.54 | 1.27 | 1.04 | -2.30 | 2.30 | 5.12 | -2.30 | 5.12 |
| ***AP Science course takers*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| All | 55 | -4.75 | 12.21 | 3.19 | 1.93 | 4.33 | 0.46 | 0.32 | -0.65 | 0.63 | 0.06 | 1.93 | 6.76 | 0.06 | 6.76 |
| African American / Black | 32 | -7.14 | 21.43 | 2.59 | 1.26 | 6.38 | 1.20 | 0.41 | 1.88 | 0.81 | -1.58 | 1.26 | 5.30 | -1.58 | 5.30 |
| Hispanic/Latino | 49 | -16.67 | 15.00 | 0.83 | 0.42 | 4.67 | -0.52 | 0.34 | 4.48 | 0.67 | -0.71 | 0.42 | 2.88 | -0.71 | 2.88 |
| English language learners | 23 | -2.70 | 15.12 | 1.06 | 0.00 | 3.35 | 3.67 | 0.48 | 15.25 | 0.93 | 0.00 | 0.00 | 0.72 | -2.07\* | 0.72 |
| Students with disabilities | 55 | -2.44 | 6.45 | 0.31 | 0.00 | 1.38 | 1.95 | 0.32 | 7.65 | 0.63 | 0.00 | 0.00 | 0.64 | -0.09\* | 0.64 |
| Students who are economically disadvantaged | 18 | -8.29 | 5.82 | -1.35 | -0.97 | 3.46 | -0.07 | 0.54 | 0.33 | 1.04 | -3.44 | -0.97 | 0.76 | -3.44 | 0.76 |
| \* Cutoff was adjusted in cases where cutoff value was attributed to multiple schools. | | | |  |  |  |  |  |  |  |  |  |  |  |  |

#### Table A.2. Percent point change in Any (ELA, math, or science) AP course taking, one year after intervention

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| | **All** | | | --- | --- | | ***School Name*** | ***Percentage point change*** | | Sutton Memorial High School | 21.47 | | Drury High School | 14.94 | | Saugus High School | 13.17 | | Westfield High School | 12.69 | | Shepherd Hill Regional High School | 11.13 | | Tantasqua High School | 11.09 | | Oxford High School | 10.84 | | Lee Middle and High School | 10.42 | | Auburn High School | 9.88 | | Wahconah Regional High School | 9.86 | | Leicester High School | 8.5 | | Avon Middle-High School | 8.47 | | North Brookfield High School | 8.43 | | Melrose High School | 8.43 | | Seekonk High School | 7.42 | | Whitman-Hanson Regional High School | 7.37 | | Franklin County Technical School | 7.10 | | Granby Junior-Senior High School | 6.85 | | Joseph Case High School | 6.79 | | Blackstone-Millville Regional High School | 6.65 | | Ludlow High School | 6.49 | | Fitchburg High School | 6.26 | | Holyoke High School | 5.97 | | Gardner High School | 5.85 | | Pathfinder Regional Vocational Technical High School | 5.83 | | Millbury Memorial Junior/Senior High School | 5.52 | | Carver High School | 5.29 | | Roger L. Putnam Vocational Technical Academy | 5.19 | | Chicopee High School | 4.93 | | Joseph P. Keefe Regional Technical School | 4.60 | | Excel High School | 4.51 | | Wareham High School | 4.42 | | Bay Path Regional Vocational Technical High School | 4.25 | | David Prouty High School | 3.91 | | East Bridgewater High School | 3.76 | | Taconic High School | 3.73 | | Bartlett Junior Senior High School | 3.62 | | Somerville High School | 3.57 | | Barnstable High School | 3.36 | | Chicopee Comprehensive High School | 2.76 | | Nantucket High School | 2.51 | | Jeremiah E. Burke High School | 2.16 | | New Bedford High School | 1.84 | | Ayer Shirley Regional High School | 1.77 | | Grafton High School | 1.17 | | Boston Green Academy | 1.00 | | Nashoba Valley Technical High School | 0.87 | | TechBoston Academy | 0.76 | | Bourne High School | 0.39 | | West Roxbury Academy | -0.24 | | Tri-County Regional Vocational Technical High School | -0.48 | | Pittsfield High School | -2.16 | | Charlestown High School | -2.58 | | Urban Science Academy | -2.61 | | Claremont Academy | -3.37 | |

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| |  |  | | --- | --- | | **African American / Black** | | | ***School Name*** | ***Percentage point change*** | | Saugus High School | 17.47 | | Chicopee Comprehensive High School | 17.14 | | Drury High School | 13.91 | | Gardner High School | 12.5 | | Avon Middle-High School | 11.89 | | Melrose High School | 10.89 | | Ludlow High School | 10 | | Chicopee High School | 7.01 | | Taconic High School | 5.75 | | Roger L. Putnam Vocational Technical Academy | 4.71 | | Excel High School | 4.55 | | Nantucket High School | 3.91 | | Westfield High School | 3.57 | | Somerville High School | 3.57 | | Joseph P. Keefe Regional Technical School | 2.38 | | Jeremiah E. Burke High School | 2.28 | | New Bedford High School | 2.28 | | Boston Green Academy | 1.77 | | TechBoston Academy | 1.19 | | Barnstable High School | 1.14 | | Carver High School | 0.76 | | Bartlett Junior Senior High School | 0.45 | | Joseph Case High School | 0 | | Wareham High School | 0 | | Ayer Shirley Regional High School | 0 | | Fitchburg High School | -0.17 | | Pittsfield High School | -0.59 | | Grafton High School | -1.43 | | Holyoke High School | -2.22 | | West Roxbury Academy | -2.38 | | Charlestown High School | -4.38 | | Urban Science Academy | -6.11 | | Whitman-Hanson Regional High School | -7.14 | | Claremont Academy | -11.3 | | Auburn High School | . | | Bay Path Regional Vocational Technical High School | . | | Blackstone-Millville Regional High School | . | | Bourne High School | . | | David Prouty High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Granby Junior-Senior High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Millbury Memorial Junior/Senior High School | . | | Nashoba Valley Technical High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pathfinder Regional Vocational Technical High School | . | | Seekonk High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Tantasqua High School | . | | Tri-County Regional Vocational Technical High School | . | | Wahconah Regional High School | . | |

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| |  |  | | --- | --- | | **Hispanic/Latino** | | | ***School Name*** | ***Percentage point change*** | | David Prouty High School | 25.66 | | Tantasqua High School | 20.54 | | Drury High School | 17.19 | | Leicester High School | 15.00 | | Whitman-Hanson Regional High School | 14.29 | | Taconic High School | 9.26 | | Westfield High School | 8.86 | | Seekonk High School | 7.14 | | Nashoba Valley Technical High School | 6.74 | | Fitchburg High School | 6.01 | | Pathfinder Regional Vocational Technical High School | 5.71 | | Saugus High School | 5.44 | | Lee Middle and High School | 5.00 | | Roger L. Putnam Vocational Technical Academy | 4.85 | | Urban Science Academy | 4.54 | | Tri-County Regional Vocational Technical High School | 4.11 | | Gardner High School | 3.79 | | Joseph P. Keefe Regional Technical School | 3.61 | | Bartlett Junior Senior High School | 3.54 | | Holyoke High School | 3.48 | | Excel High School | 3.33 | | Chicopee High School | 2.98 | | Jeremiah E. Burke High School | 2.54 | | Wareham High School | 1.83 | | Barnstable High School | 1.70 | | Shepherd Hill Regional High School | 1.67 | | Chicopee Comprehensive High School | 1.58 | | Ludlow High School | 1.58 | | Oxford High School | 0.65 | | Pittsfield High School | 0.47 | | TechBoston Academy | 0.28 | | Somerville High School | 0.15 | | Auburn High School | 0.00 | | Wahconah Regional High School | 0.00 | | Blackstone-Millville Regional High School | 0.00 | | Charlestown High School | -0.44 | | West Roxbury Academy | -0.47 | | New Bedford High School | -1.05 | | Grafton High School | -1.19 | | Boston Green Academy | -1.43 | | Bay Path Regional Vocational Technical High School | -2.05 | | Claremont Academy | -3.46 | | Nantucket High School | -4.05 | | Ayer Shirley Regional High School | -4.65 | | Melrose High School | -8.79 | | Bourne High School | -9.91 | | Millbury Memorial Junior/Senior High School | -9.98 | | Avon Middle-High School | -15.91 | | Carver High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Granby Junior-Senior High School | . | | Joseph Case High School | . | | North Brookfield High School | . | | Sutton Memorial High School | . | |

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| |  |  | | --- | --- | | **English language learners** | | | ***School Name*** | ***Percentage point change*** | | Jeremiah E. Burke High School | 3.75 | | Urban Science Academy | 3.73 | | West Roxbury Academy | 1.56 | | Boston Green Academy | 1.50 | | Claremont Academy | 0.94 | | TechBoston Academy | 0.75 | | Roger L. Putnam Vocational Technical Academy | 0.64 | | New Bedford High School | 0.47 | | Somerville High School | 0.02 | | Barnstable High School | 0.00 | | Bartlett Junior Senior High School | 0.00 | | Chicopee High School | 0.00 | | Gardner High School | 0.00 | | Holyoke High School | 0.00 | | Joseph P. Keefe Regional Technical School | 0.00 | | Nantucket High School | 0.00 | | Westfield High School | 0.00 | | Excel High School | -0.58 | | Fitchburg High School | -1.89 | | Chicopee Comprehensive High School | -3.57 | | Pittsfield High School | -5.41 | | Charlestown High School | -5.95 | | Auburn High School | . | | Avon Middle-High School | . | | Ayer Shirley Regional High School | . | | Bay Path Regional Vocational Technical High School | . | | Blackstone-Millville Regional High School | . | | Bourne High School | . | | Carver High School | . | | David Prouty High School | . | | Drury High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Grafton High School | . | | Granby Junior-Senior High School | . | | Joseph Case High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Ludlow High School | . | | Melrose High School | . | | Millbury Memorial Junior/Senior High School | . | | Nashoba Valley Technical High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pathfinder Regional Vocational Technical High School | . | | Saugus High School | . | | Seekonk High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Taconic High School | . | | Tantasqua High School | . | | Tri-County Regional Vocational Technical High School | . | | Wahconah Regional High School | . | | Wareham High School | . | | Whitman-Hanson Regional High School | . | |

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| |  |  | | --- | --- | | **Students with disabilities** | | | ***School Name*** | ***Percentage point change*** | | Franklin County Technical School | 4.73 | | Sutton Memorial High School | 3.77 | | Leicester High School | 3.57 | | Pittsfield High School | 3.08 | | Blackstone-Millville Regional High School | 3.08 | | Westfield High School | 2.94 | | Jeremiah E. Burke High School | 2.91 | | Drury High School | 2.33 | | Granby Junior-Senior High School | 2.17 | | Joseph Case High School | 1.69 | | Wareham High School | 1.59 | | Saugus High School | 1.56 | | Seekonk High School | 1.28 | | Claremont Academy | 1.26 | | Roger L. Putnam Vocational Technical Academy | 1.21 | | Fitchburg High School | 1.13 | | Grafton High School | 0.99 | | Melrose High School | 0.91 | | Excel High School | 0.77 | | TechBoston Academy | 0.75 | | Chicopee High School | 0.64 | | Barnstable High School | 0.61 | | Bay Path Regional Vocational Technical High School | 0.48 | | Somerville High School | 0.45 | | New Bedford High School | 0.44 | | Tri-County Regional Vocational Technical High School | 0.33 | | Joseph P. Keefe Regional Technical School | 0.31 | | Whitman-Hanson Regional High School | 0.12 | | Carver High School | 0.06 | | Ludlow High School | 0.04 | | Gardner High School | 0.00 | | Nantucket High School | 0.00 | | Chicopee Comprehensive High School | 0.00 | | Auburn High School | 0.00 | | Avon Middle-High School | 0.00 | | East Bridgewater High School | 0.00 | | Lee Middle and High School | 0.00 | | North Brookfield High School | 0.00 | | Oxford High School | 0.00 | | Pathfinder Regional Vocational Technical High School | 0.00 | | Tantasqua High School | 0.00 | | Wahconah Regional High School | 0.00 | | Holyoke High School | -0.02 | | Millbury Memorial Junior/Senior High School | -0.02 | | Boston Green Academy | -0.09 | | Nashoba Valley Technical High School | -0.09 | | Shepherd Hill Regional High School | -0.16 | | Taconic High School | -0.33 | | Ayer Shirley Regional High School | -0.75 | | West Roxbury Academy | -0.79 | | David Prouty High School | -1.56 | | Bartlett Junior Senior High School | -2.10 | | Charlestown High School | -2.14 | | Urban Science Academy | -2.18 | | Bourne High School | -7.02 | |

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| |  |  | | --- | --- | | **Students who are economically disadvantaged** | | | ***School Name*** | ***Percentage point change*** | | Blackstone-Millville Regional High School | 7.34 | | Franklin County Technical School | 4.79 | | David Prouty High School | 4.56 | | Joseph Case High School | 3.97 | | Joseph P. Keefe Regional Technical School | 2.93 | | Pathfinder Regional Vocational Technical High School | 2.65 | | Avon Middle-High School | 1.18 | | Carver High School | 0.77 | | Somerville High School | 0.59 | | Seekonk High School | 0.20 | | West Roxbury Academy | 0.20 | | Tri-County Regional Vocational Technical High School | -0.28 | | TechBoston Academy | -1.03 | | Grafton High School | -1.43 | | Nashoba Valley Technical High School | -1.94 | | Millbury Memorial Junior/Senior High School | -2.14 | | Urban Science Academy | -3.50 | | Ayer Shirley Regional High School | -5.41 | | Auburn High School | . | | Barnstable High School | . | | Bartlett Junior Senior High School | . | | Bay Path Regional Vocational Technical High School | . | | Boston Green Academy | . | | Bourne High School | . | | Charlestown High School | . | | Chicopee Comprehensive High School | . | | Chicopee High School | . | | Claremont Academy | . | | Drury High School | . | | East Bridgewater High School | . | | Excel High School | . | | Fitchburg High School | . | | Gardner High School | . | | Granby Junior-Senior High School | . | | Holyoke High School | . | | Jeremiah E. Burke High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Ludlow High School | . | | Melrose High School | . | | Nantucket High School | . | | New Bedford High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pittsfield High School | . | | Roger L. Putnam Vocational Technical Academy | . | | Saugus High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Taconic High School | . | | Tantasqua High School | . | | Wahconah Regional High School | . | | Wareham High School | . | | Westfield High School | . | | Whitman-Hanson Regional High School | . | |

#### Table A.3. Percent point change in AP Science course taking, one year after intervention

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| |  |  | | --- | --- | | **All** | | | ***School Name*** | ***Percentage point change*** | | Sutton Memorial High School | 12.53 | | Oxford High School | 9.61 | | Saugus High School | 8.94 | | Auburn High School | 8.49 | | Drury High School | 7.82 | | Melrose High School | 6.96 | | Tantasqua High School | 6.16 | | Seekonk High School | 5.57 | | Nantucket High School | 5.46 | | Blackstone-Millville Regional High School | 5.33 | | North Brookfield High School | 5.11 | | Whitman-Hanson Regional High School | 5.08 | | Lee Middle and High School | 5.00 | | Westfield High School | 4.81 | | Holyoke High School | 4.78 | | Leicester High School | 4.14 | | Taconic High School | 3.70 | | Wahconah Regional High School | 3.68 | | Carver High School | 3.20 | | Ludlow High School | 3.08 | | Gardner High School | 2.88 | | Somerville High School | 2.81 | | Shepherd Hill Regional High School | 2.25 | | Granby Junior-Senior High School | 2.02 | | Barnstable High School | 1.58 | | Chicopee Comprehensive High School | 1.58 | | Nashoba Valley Technical High School | 1.51 | | Chicopee High School | 1.51 | | Claremont Academy | 1.30 | | Bay Path Regional Vocational Technical High School | 1.25 | | Fitchburg High School | 1.07 | | Roger L. Putnam Vocational Technical Academy | 0.97 | | East Bridgewater High School | 0.62 | | Bourne High School | 0.62 | | Urban Science Academy | 0.42 | | New Bedford High School | 0.24 | | Jeremiah E. Burke High School | 0.08 | | Franklin County Technical School | 0.00 | | Pathfinder Regional Vocational Technical High School | 0.00 | | Joseph P. Keefe Regional Technical School | 0.00 | | Wareham High School | -0.15 | | Excel High School | -0.23 | | Tri-County Regional Vocational Technical High School | -0.42 | | TechBoston Academy | -0.67 | | Avon Middle-High School | -0.74 | | West Roxbury Academy | -0.79 | | Ayer Shirley Regional High School | -0.92 | | David Prouty High School | -1.01 | | Joseph Case High School | -1.18 | | Bartlett Junior Senior High School | -1.37 | | Millbury Memorial Junior/Senior High School | -1.80 | | Boston Green Academy | -2.42 | | Pittsfield High School | -2.87 | | Grafton High School | -2.90 | | Charlestown High School | -3.00 | |

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| |  |  | | --- | --- | | **African American / Black** | | | ***School Name*** | ***Percentage point change*** | | Saugus High School | 17.36 | | Drury High School | 10.53 | | Carver High School | 9.09 | | Claremont Academy | 8.65 | | Chicopee High School | 6.90 | | Chicopee Comprehensive High School | 5.71 | | Ludlow High School | 5.00 | | Taconic High School | 4.14 | | Westfield High School | 3.57 | | Nantucket High School | 2.68 | | Avon Middle-High School | 2.46 | | Roger L. Putnam Vocational Technical Academy | 1.79 | | Wareham High School | 1.49 | | Melrose High School | 1.39 | | Somerville High School | 1.19 | | New Bedford High School | 1.14 | | Jeremiah E. Burke High School | 0.44 | | TechBoston Academy | 0.24 | | Excel High School | 0.08 | | Holyoke High School | 0.00 | | Gardner High School | 0.00 | | Joseph P. Keefe Regional Technical School | 0.00 | | Ayer Shirley Regional High School | 0.00 | | Joseph Case High School | 0.00 | | Barnstable High School | -0.18 | | Pittsfield High School | -0.20 | | Urban Science Academy | -2.07 | | West Roxbury Academy | -2.50 | | Boston Green Academy | -3.15 | | Fitchburg High School | -4.02 | | Grafton High School | -4.29 | | Bartlett Junior Senior High School | -4.55 | | Charlestown High School | -5.61 | | Whitman-Hanson Regional High School | -7.14 | | Auburn High School | . | | Bay Path Regional Vocational Technical High School | . | | Blackstone-Millville Regional High School | . | | Bourne High School | . | | David Prouty High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Granby Junior-Senior High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Millbury Memorial Junior/Senior High School | . | | Nashoba Valley Technical High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pathfinder Regional Vocational Technical High School | . | | Seekonk High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Tantasqua High School | . | | Tri-County Regional Vocational Technical High School | . | | Wahconah Regional High School | . | |

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| |  |  | | --- | --- | | **Hispanic/Latino** | | | ***School Name*** | ***Percentage point change*** | | Tantasqua High School | 18.30 | | Whitman-Hanson Regional High School | 10.71 | | Leicester High School | 8.75 | | Drury High School | 7.69 | | Seekonk High School | 7.14 | | Taconic High School | 5.88 | | Saugus High School | 5.36 | | Urban Science Academy | 5.23 | | Gardner High School | 5.08 | | Lee Middle and High School | 5.00 | | Auburn High School | 3.45 | | Holyoke High School | 2.62 | | Westfield High School | 2.53 | | Chicopee High School | 2.18 | | Tri-County Regional Vocational Technical High School | 2.13 | | Nashoba Valley Technical High School | 2.09 | | Shepherd Hill Regional High School | 2.08 | | Fitchburg High School | 2.03 | | West Roxbury Academy | 1.94 | | Ludlow High School | 1.58 | | Pittsfield High School | 1.20 | | Barnstable High School | 0.95 | | Roger L. Putnam Vocational Technical Academy | 0.62 | | Somerville High School | 0.36 | | Chicopee Comprehensive High School | 0.32 | | TechBoston Academy | 0.22 | | Blackstone-Millville Regional High School | 0.00 | | Bay Path Regional Vocational Technical High School | 0.00 | | Pathfinder Regional Vocational Technical High School | 0.00 | | Melrose High School | 0.00 | | Joseph P. Keefe Regional Technical School | 0.00 | | Bartlett Junior Senior High School | -0.34 | | Charlestown High School | -0.47 | | Oxford High School | -0.89 | | Claremont Academy | -0.95 | | Boston Green Academy | -0.95 | | New Bedford High School | -1.25 | | Jeremiah E. Burke High School | -1.51 | | Nantucket High School | -1.52 | | Excel High School | -1.53 | | David Prouty High School | -1.93 | | Wareham High School | -3.03 | | Grafton High School | -4.64 | | Ayer Shirley Regional High School | -4.65 | | Millbury Memorial Junior/Senior High School | -8.70 | | Wahconah Regional High School | -9.09 | | Bourne High School | -10.53 | | Avon Middle-High School | -25.00 | | Carver High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Granby Junior-Senior High School | . | | Joseph Case High School | . | | North Brookfield High School | . | | Sutton Memorial High School | . | |

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| |  |  | | --- | --- | | **English language learners** | | | ***School Name*** | ***Percentage point change*** | | Jeremiah E. Burke High School | 3.10 | | Boston Green Academy | 2.13 | | Urban Science Academy | 1.82 | | West Roxbury Academy | 1.56 | | Excel High School | 0.18 | | Joseph P. Keefe Regional Technical School | 0.00 | | TechBoston Academy | 0.00 | | Westfield High School | 0.00 | | Roger L. Putnam Vocational Technical Academy | 0.00 | | Fitchburg High School | 0.00 | | Chicopee High School | 0.00 | | Barnstable High School | 0.00 | | New Bedford High School | 0.00 | | Gardner High School | 0.00 | | Nantucket High School | 0.00 | | Chicopee Comprehensive High School | 0.00 | | Holyoke High School | 0.00 | | Bartlett Junior Senior High School | 0.00 | | Somerville High School | -0.54 | | Claremont Academy | -0.74 | | Pittsfield High School | -2.70 | | Charlestown High School | -4.41 | | Auburn High School | . | | Avon Middle-High School | . | | Ayer Shirley Regional High School | . | | Bay Path Regional Vocational Technical High School | . | | Blackstone-Millville Regional High School | . | | Bourne High School | . | | Carver High School | . | | David Prouty High School | . | | Drury High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Grafton High School | . | | Granby Junior-Senior High School | . | | Joseph Case High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Ludlow High School | . | | Melrose High School | . | | Millbury Memorial Junior/Senior High School | . | | Nashoba Valley Technical High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pathfinder Regional Vocational Technical High School | . | | Saugus High School | . | | Seekonk High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Taconic High School | . | | Tantasqua High School | . | | Tri-County Regional Vocational Technical High School | . | | Wahconah Regional High School | . | | Wareham High School | . | | Whitman-Hanson Regional High School | . | |

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| |  |  | | --- | --- | | **Students with disabilities** | | | ***School Name*** | ***Percentage point change*** | | Westfield High School | 2.94 | | Granby Junior-Senior High School | 2.17 | | Leicester High School | 1.79 | | Saugus High School | 1.56 | | Blackstone-Millville Regional High School | 1.54 | | Claremont Academy | 1.26 | | Whitman-Hanson Regional High School | 1.25 | | Nashoba Valley Technical High School | 1.20 | | Drury High School | 1.16 | | Shepherd Hill Regional High School | 1.08 | | Boston Green Academy | 1.06 | | Grafton High School | 0.99 | | Wareham High School | 0.79 | | Melrose High School | 0.75 | | TechBoston Academy | 0.75 | | Ludlow High School | 0.65 | | Chicopee High School | 0.64 | | Holyoke High School | 0.50 | | Somerville High School | 0.46 | | Tri-County Regional Vocational Technical High School | 0.33 | | New Bedford High School | 0.22 | | Excel High School | 0.00 | | Joseph P. Keefe Regional Technical School | 0.00 | | Roger L. Putnam Vocational Technical Academy | 0.00 | | Fitchburg High School | 0.00 | | Barnstable High School | 0.00 | | Gardner High School | 0.00 | | Nantucket High School | 0.00 | | Chicopee Comprehensive High School | 0.00 | | Pittsfield High School | 0.00 | | Franklin County Technical School | 0.00 | | Joseph Case High School | 0.00 | | Pathfinder Regional Vocational Technical High School | 0.00 | | Avon Middle-High School | 0.00 | | Seekonk High School | 0.00 | | Millbury Memorial Junior/Senior High School | 0.00 | | Sutton Memorial High School | 0.00 | | Bay Path Regional Vocational Technical High School | 0.00 | | Auburn High School | 0.00 | | East Bridgewater High School | 0.00 | | Lee Middle and High School | 0.00 | | North Brookfield High School | 0.00 | | Oxford High School | 0.00 | | Tantasqua High School | 0.00 | | Wahconah Regional High School | 0.00 | | Ayer Shirley Regional High School | -0.75 | | Jeremiah E. Burke High School | -0.84 | | West Roxbury Academy | -0.91 | | Charlestown High School | -1.07 | | Taconic High School | -1.19 | | Carver High School | -1.23 | | Urban Science Academy | -1.54 | | David Prouty High School | -1.72 | | Bartlett Junior Senior High School | -1.82 | | Bourne High School | -7.02 | |
| |  |  | | --- | --- | | **Students who are economically disadvantaged** | | | ***School Name*** | ***Percentage point change*** | | Blackstone-Millville Regional High School | 5.04 | | West Roxbury Academy | 0.97 | | Seekonk High School | 0.82 | | Somerville High School | 0.45 | | Joseph P. Keefe Regional Technical School | 0.00 | | Franklin County Technical School | 0.00 | | Pathfinder Regional Vocational Technical High School | 0.00 | | Urban Science Academy | -0.49 | | Nashoba Valley Technical High School | -0.66 | | Carver High School | -0.77 | | Tri-County Regional Vocational Technical High School | -1.05 | | Joseph Case High School | -1.08 | | David Prouty High School | -1.20 | | Grafton High School | -1.34 | | Millbury Memorial Junior/Senior High School | -1.47 | | TechBoston Academy | -1.68 | | Avon Middle-High School | -2.99 | | Ayer Shirley Regional High School | -5.26 | | Auburn High School | . | | Barnstable High School | . | | Bartlett Junior Senior High School | . | | Bay Path Regional Vocational Technical High School | . | | Boston Green Academy | . | | Bourne High School | . | | Charlestown High School | . | | Chicopee Comprehensive High School | . | | Chicopee High School | . | | Claremont Academy | . | | Drury High School | . | | East Bridgewater High School | . | | Excel High School | . | | Fitchburg High School | . | | Gardner High School | . | | Granby Junior-Senior High School | . | | Holyoke High School | . | | Jeremiah E. Burke High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Ludlow High School | . | | Melrose High School | . | | Nantucket High School | . | | New Bedford High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pittsfield High School | . | | Roger L. Putnam Vocational Technical Academy | . | | Saugus High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Taconic High School | . | | Tantasqua High School | . | | Wahconah Regional High School | . | | Wareham High School | . | | Westfield High School | . | | Whitman-Hanson Regional High School | . | |

#### Table A.4. Percent point change in Any (ELA, math, or science) AP course passing, one year after intervention

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| |  |  | | --- | --- | | **All** | | | ***School Name*** | ***Percentage point change*** | | Sutton Memorial High School | 21.47 | | Saugus High School | 13.48 | | Drury High School | 12.23 | | Tantasqua High School | 11.09 | | Shepherd Hill Regional High School | 11.05 | | Oxford High School | 10.84 | | Westfield High School | 10.72 | | Wahconah Regional High School | 10.04 | | Auburn High School | 9.43 | | Joseph Case High School | 8.29 | | Avon Middle-High School | 7.96 | | North Brookfield High School | 7.66 | | Leicester High School | 7.62 | | Melrose High School | 7.58 | | Millbury Memorial Junior/Senior High School | 7.51 | | Granby Junior-Senior High School | 7.44 | | Lee Middle and High School | 6.79 | | Seekonk High School | 6.75 | | Franklin County Technical School | 6.71 | | Whitman-Hanson Regional High School | 6.61 | | Ludlow High School | 6.28 | | Pathfinder Regional Vocational Technical High School | 5.67 | | Fitchburg High School | 5.65 | | Gardner High School | 5.51 | | Blackstone-Millville Regional High School | 5.36 | | Carver High School | 5.28 | | Holyoke High School | 5.06 | | Excel High School | 4.55 | | East Bridgewater High School | 4.49 | | Joseph P. Keefe Regional Technical School | 4.46 | | Chicopee High School | 4.27 | | Bay Path Regional Vocational Technical High School | 3.90 | | David Prouty High School | 3.76 | | Roger L. Putnam Vocational Technical Academy | 3.75 | | Bartlett Junior Senior High School | 3.59 | | Barnstable High School | 3.22 | | Wareham High School | 3.06 | | Chicopee Comprehensive High School | 2.40 | | Nantucket High School | 2.31 | | Grafton High School | 2.00 | | Claremont Academy | 1.84 | | New Bedford High School | 1.76 | | Ayer Shirley Regional High School | 1.52 | | Taconic High School | 1.51 | | Jeremiah E. Burke High School | 0.94 | | Bourne High School | 0.80 | | Nashoba Valley Technical High School | 0.59 | | Tri-County Regional Vocational Technical High School | -0.38 | | Charlestown High School | -1.30 | | TechBoston Academy | -2.33 | | Pittsfield High School | -2.89 | | Somerville High School | -3.69 | | Urban Science Academy | -3.81 | | Boston Green Academy | -4.05 | | West Roxbury Academy | -4.47 | |

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| |  |  | | --- | --- | | **African American / Black** | | | ***School Name*** | ***Percentage point change*** | | Chicopee Comprehensive High School | 14.29 | | Saugus High School | 14.02 | | Gardner High School | 12.50 | | Avon Middle-High School | 11.89 | | Ludlow High School | 10.00 | | Melrose High School | 9.50 | | Drury High School | 8.65 | | Chicopee High School | 7.01 | | Grafton High School | 5.71 | | Taconic High School | 4.40 | | Claremont Academy | 4.09 | | Nantucket High School | 3.91 | | Fitchburg High School | 3.85 | | Roger L. Putnam Vocational Technical Academy | 3.64 | | Westfield High School | 3.57 | | Excel High School | 3.43 | | Joseph P. Keefe Regional Technical School | 2.38 | | New Bedford High School | 2.00 | | Pittsfield High School | 1.48 | | Barnstable High School | 1.14 | | Jeremiah E. Burke High School | 0.97 | | Carver High School | 0.76 | | Bartlett Junior Senior High School | 0.45 | | Joseph Case High School | 0.00 | | Wareham High School | 0.00 | | Ayer Shirley Regional High School | 0.00 | | Boston Green Academy | -0.72 | | TechBoston Academy | -0.95 | | Charlestown High School | -1.75 | | Holyoke High School | -2.22 | | Whitman-Hanson Regional High School | -3.57 | | Somerville High School | -4.67 | | West Roxbury Academy | -5.01 | | Urban Science Academy | -6.53 | | Auburn High School | . | | Bay Path Regional Vocational Technical High School | . | | Blackstone-Millville Regional High School | . | | Bourne High School | . | | David Prouty High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Granby Junior-Senior High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Millbury Memorial Junior/Senior High School | . | | Nashoba Valley Technical High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pathfinder Regional Vocational Technical High School | . | | Seekonk High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Tantasqua High School | . | | Tri-County Regional Vocational Technical High School | . | | Wahconah Regional High School | . | |

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| |  |  | | --- | --- | | **Hispanic/Latino** | | | ***School Name*** | ***Percentage point change*** | | David Prouty High School | 22.21 | | Tantasqua High School | 20.54 | | Drury High School | 17.19 | | Leicester High School | 15.00 | | Whitman-Hanson Regional High School | 14.29 | | Wahconah Regional High School | 9.09 | | Taconic High School | 7.30 | | Seekonk High School | 7.14 | | Nashoba Valley Technical High School | 6.74 | | Westfield High School | 6.33 | | Pathfinder Regional Vocational Technical High School | 5.71 | | Fitchburg High School | 5.39 | | Bartlett Junior Senior High School | 5.39 | | Saugus High School | 4.16 | | Tri-County Regional Vocational Technical High School | 4.11 | | Excel High School | 3.84 | | Gardner High School | 3.79 | | Joseph P. Keefe Regional Technical School | 3.61 | | Roger L. Putnam Vocational Technical Academy | 2.93 | | Holyoke High School | 2.58 | | Chicopee High School | 2.44 | | Shepherd Hill Regional High School | 1.67 | | Ludlow High School | 1.58 | | Chicopee Comprehensive High School | 1.27 | | Urban Science Academy | 1.01 | | Barnstable High School | 0.66 | | Oxford High School | 0.65 | | Claremont Academy | 0.65 | | Jeremiah E. Burke High School | 0.60 | | Charlestown High School | 0.57 | | Auburn High School | 0.00 | | Lee Middle and High School | 0.00 | | Blackstone-Millville Regional High School | 0.00 | | New Bedford High School | -0.88 | | Grafton High School | -1.19 | | Pittsfield High School | -1.94 | | Bay Path Regional Vocational Technical High School | -2.05 | | Somerville High School | -3.04 | | TechBoston Academy | -3.38 | | Wareham High School | -3.43 | | West Roxbury Academy | -3.43 | | Nantucket High School | -4.05 | | Bourne High School | -4.64 | | Ayer Shirley Regional High School | -4.65 | | Millbury Memorial Junior/Senior High School | -5.64 | | Melrose High School | -8.79 | | Boston Green Academy | -10.41 | | Avon Middle-High School | -25.00 | | Carver High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Granby Junior-Senior High School | . | | Joseph Case High School | . | | North Brookfield High School | . | | Sutton Memorial High School | . | |

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| |  |  | | --- | --- | | **English language learners** | | | ***School Name*** | ***Percentage point change*** | | Urban Science Academy | 3.64 | | Jeremiah E. Burke High School | 3.13 | | West Roxbury Academy | 1.56 | | Boston Green Academy | 1.50 | | TechBoston Academy | 0.75 | | Roger L. Putnam Vocational Technical Academy | 0.64 | | New Bedford High School | 0.47 | | Claremont Academy | 0.13 | | Excel High School | 0.08 | | Barnstable High School | 0.00 | | Bartlett Junior Senior High School | 0.00 | | Chicopee High School | 0.00 | | Gardner High School | 0.00 | | Holyoke High School | 0.00 | | Joseph P. Keefe Regional Technical School | 0.00 | | Nantucket High School | 0.00 | | Westfield High School | 0.00 | | Somerville High School | -0.54 | | Fitchburg High School | -1.89 | | Chicopee Comprehensive High School | -3.57 | | Pittsfield High School | -5.41 | | Charlestown High School | -5.44 | | Auburn High School | . | | Avon Middle-High School | . | | Ayer Shirley Regional High School | . | | Bay Path Regional Vocational Technical High School | . | | Blackstone-Millville Regional High School | . | | Bourne High School | . | | Carver High School | . | | David Prouty High School | . | | Drury High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Grafton High School | . | | Granby Junior-Senior High School | . | | Joseph Case High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Ludlow High School | . | | Melrose High School | . | | Millbury Memorial Junior/Senior High School | . | | Nashoba Valley Technical High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pathfinder Regional Vocational Technical High School | . | | Saugus High School | . | | Seekonk High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Taconic High School | . | | Tantasqua High School | . | | Tri-County Regional Vocational Technical High School | . | | Wahconah Regional High School | . | | Wareham High School | . | | Whitman-Hanson Regional High School | . | |

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| |  |  | | --- | --- | | **Students with disabilities** | | | ***School Name*** | ***Percentage point change*** | | Franklin County Technical School | 4.73 | | Sutton Memorial High School | 3.77 | | Blackstone-Millville Regional High School | 3.08 | | Westfield High School | 2.21 | | Granby Junior-Senior High School | 2.17 | | Leicester High School | 1.79 | | Joseph Case High School | 1.69 | | Jeremiah E. Burke High School | 1.66 | | Wareham High School | 1.59 | | Saugus High School | 1.56 | | TechBoston Academy | 1.49 | | Seekonk High School | 1.28 | | Claremont Academy | 1.26 | | Roger L. Putnam Vocational Technical Academy | 1.21 | | Drury High School | 1.16 | | Fitchburg High School | 1.13 | | Excel High School | 0.77 | | Chicopee High School | 0.64 | | Barnstable High School | 0.61 | | Bay Path Regional Vocational Technical High School | 0.48 | | Pittsfield High School | 0.44 | | New Bedford High School | 0.44 | | Tri-County Regional Vocational Technical High School | 0.33 | | Joseph P. Keefe Regional Technical School | 0.31 | | Taconic High School | 0.31 | | Melrose High School | 0.16 | | Carver High School | 0.06 | | Ludlow High School | 0.04 | | Boston Green Academy | 0.00 | | Gardner High School | 0.00 | | Nantucket High School | 0.00 | | Chicopee Comprehensive High School | 0.00 | | Charlestown High School | 0.00 | | Auburn High School | 0.00 | | Avon Middle-High School | 0.00 | | East Bridgewater High School | 0.00 | | Grafton High School | 0.00 | | Lee Middle and High School | 0.00 | | Millbury Memorial Junior/Senior High School | 0.00 | | North Brookfield High School | 0.00 | | Oxford High School | 0.00 | | Pathfinder Regional Vocational Technical High School | 0.00 | | Tantasqua High School | 0.00 | | Wahconah Regional High School | 0.00 | | Holyoke High School | -0.02 | | Nashoba Valley Technical High School | -0.09 | | Shepherd Hill Regional High School | -0.16 | | Somerville High School | -0.48 | | Ayer Shirley Regional High School | -0.75 | | West Roxbury Academy | -0.91 | | Whitman-Hanson Regional High School | -1.09 | | Urban Science Academy | -1.45 | | Bartlett Junior Senior High School | -2.10 | | David Prouty High School | -3.45 | | Bourne High School | -3.51 | |

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| |  |  | | --- | --- | | **Students who are economically disadvantaged** | | | ***School Name*** | ***Percentage point change*** | | Blackstone-Millville Regional High School | 6.04 | | Franklin County Technical School | 4.79 | | David Prouty High School | 4.62 | | Joseph Case High School | 3.97 | | Pathfinder Regional Vocational Technical High School | 2.65 | | Joseph P. Keefe Regional Technical School | 2.56 | | Avon Middle-High School | 1.18 | | Grafton High School | 1.07 | | Carver High School | 0.77 | | Tri-County Regional Vocational Technical High School | -0.28 | | Seekonk High School | -1.22 | | Millbury Memorial Junior/Senior High School | -2.14 | | West Roxbury Academy | -3.72 | | Nashoba Valley Technical High School | -4.12 | | Urban Science Academy | -4.50 | | TechBoston Academy | -4.51 | | Somerville High School | -5.27 | | Ayer Shirley Regional High School | -5.41 | | Auburn High School | . | | Barnstable High School | . | | Bartlett Junior Senior High School | . | | Bay Path Regional Vocational Technical High School | . | | Boston Green Academy | . | | Bourne High School | . | | Charlestown High School | . | | Chicopee Comprehensive High School | . | | Chicopee High School | . | | Claremont Academy | . | | Drury High School | . | | East Bridgewater High School | . | | Excel High School | . | | Fitchburg High School | . | | Gardner High School | . | | Granby Junior-Senior High School | . | | Holyoke High School | . | | Jeremiah E. Burke High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Ludlow High School | . | | Melrose High School | . | | Nantucket High School | . | | New Bedford High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pittsfield High School | . | | Roger L. Putnam Vocational Technical Academy | . | | Saugus High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Taconic High School | . | | Tantasqua High School | . | | Wahconah Regional High School | . | | Wareham High School | . | | Westfield High School | . | | Whitman-Hanson Regional High School | . | |

#### Table A.5. Percent point change in AP Science course passing, one year after intervention

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| |  |  | | --- | --- | | **All** | | | ***School Name*** | ***Percentage point change*** | | Sutton Memorial High School | 12.53 | | Oxford High School | 9.15 | | Auburn High School | 8.63 | | Saugus High School | 8.48 | | Melrose High School | 6.31 | | Drury High School | 6.11 | | Tantasqua High School | 5.90 | | Nantucket High School | 5.27 | | Seekonk High School | 5.24 | | Blackstone-Millville Regional High School | 4.47 | | North Brookfield High School | 4.38 | | Holyoke High School | 4.10 | | Whitman-Hanson Regional High School | 4.07 | | Wahconah Regional High School | 3.86 | | Westfield High School | 3.83 | | Leicester High School | 3.48 | | Carver High School | 3.20 | | Ludlow High School | 2.97 | | Gardner High School | 2.88 | | Shepherd Hill Regional High School | 2.16 | | Taconic High School | 2.06 | | Granby Junior-Senior High School | 2.02 | | Chicopee Comprehensive High School | 1.51 | | Barnstable High School | 1.26 | | Bay Path Regional Vocational Technical High School | 1.25 | | Nashoba Valley Technical High School | 1.24 | | Chicopee High School | 1.13 | | Bourne High School | 1.02 | | Roger L. Putnam Vocational Technical Academy | 0.75 | | Fitchburg High School | 0.73 | | East Bridgewater High School | 0.62 | | Joseph Case High School | 0.32 | | New Bedford High School | 0.32 | | Excel High School | 0.22 | | Claremont Academy | 0.18 | | Jeremiah E. Burke High School | 0.04 | | Franklin County Technical School | 0.00 | | Pathfinder Regional Vocational Technical High School | 0.00 | | Joseph P. Keefe Regional Technical School | 0.00 | | Lee Middle and High School | 0.00 | | Millbury Memorial Junior/Senior High School | -0.02 | | Tri-County Regional Vocational Technical High School | -0.42 | | Wareham High School | -0.50 | | Avon Middle-High School | -0.74 | | Bartlett Junior Senior High School | -0.96 | | West Roxbury Academy | -1.06 | | Ayer Shirley Regional High School | -1.16 | | David Prouty High School | -1.58 | | Charlestown High School | -1.85 | | Somerville High School | -1.92 | | Pittsfield High School | -1.94 | | Grafton High School | -2.55 | | Urban Science Academy | -2.74 | | TechBoston Academy | -3.24 | | Boston Green Academy | -6.84 | |

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| |  |  | | --- | --- | | **African American / Black** | | | ***School Name*** | ***Percentage point change*** | | Saugus High School | 13.91 | | Claremont Academy | 12.50 | | Carver High School | 9.09 | | Chicopee High School | 6.90 | | Chicopee Comprehensive High School | 5.71 | | Ludlow High School | 5.00 | | Westfield High School | 3.57 | | Grafton High School | 2.86 | | Taconic High School | 2.79 | | Nantucket High School | 2.68 | | Avon Middle-High School | 2.46 | | Pittsfield High School | 1.80 | | Wareham High School | 1.49 | | Roger L. Putnam Vocational Technical Academy | 1.43 | | Melrose High School | 1.39 | | New Bedford High School | 1.14 | | Excel High School | 0.40 | | Drury High School | 0.00 | | Holyoke High School | 0.00 | | Gardner High School | 0.00 | | Joseph Case High School | 0.00 | | Joseph P. Keefe Regional Technical School | 0.00 | | Ayer Shirley Regional High School | 0.00 | | Fitchburg High School | -0.02 | | Jeremiah E. Burke High School | -0.06 | | Barnstable High School | -0.18 | | Somerville High School | -1.16 | | TechBoston Academy | -1.43 | | Charlestown High School | -3.22 | | Whitman-Hanson Regional High School | -3.57 | | West Roxbury Academy | -3.81 | | Urban Science Academy | -4.50 | | Bartlett Junior Senior High School | -4.55 | | Boston Green Academy | -5.02 | | Auburn High School | . | | Bay Path Regional Vocational Technical High School | . | | Blackstone-Millville Regional High School | . | | Bourne High School | . | | David Prouty High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Granby Junior-Senior High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Millbury Memorial Junior/Senior High School | . | | Nashoba Valley Technical High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pathfinder Regional Vocational Technical High School | . | | Seekonk High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Tantasqua High School | . | | Tri-County Regional Vocational Technical High School | . | | Wahconah Regional High School | . | |

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| |  |  | | --- | --- | | **Hispanic/Latino** | | | ***School Name*** | ***Percentage point change*** | | Tantasqua High School | 15.18 | | Whitman-Hanson Regional High School | 10.71 | | Leicester High School | 8.75 | | Drury High School | 7.69 | | Seekonk High School | 7.14 | | Taconic High School | 5.88 | | Saugus High School | 5.36 | | Gardner High School | 5.08 | | Auburn High School | 3.45 | | Westfield High School | 2.53 | | West Roxbury Academy | 2.31 | | Tri-County Regional Vocational Technical High School | 2.13 | | Nashoba Valley Technical High School | 2.09 | | Shepherd Hill Regional High School | 2.08 | | Holyoke High School | 1.84 | | Ludlow High School | 1.58 | | Bartlett Junior Senior High School | 1.52 | | Chicopee High School | 1.36 | | Pittsfield High School | 1.20 | | Barnstable High School | 0.95 | | Fitchburg High School | 0.67 | | Roger L. Putnam Vocational Technical Academy | 0.38 | | Chicopee Comprehensive High School | 0.32 | | Urban Science Academy | 0.10 | | Charlestown High School | 0.01 | | Blackstone-Millville Regional High School | 0.00 | | Wahconah Regional High School | 0.00 | | Bay Path Regional Vocational Technical High School | 0.00 | | Pathfinder Regional Vocational Technical High School | 0.00 | | Lee Middle and High School | 0.00 | | Melrose High School | 0.00 | | Joseph P. Keefe Regional Technical School | 0.00 | | Excel High School | -0.24 | | Jeremiah E. Burke High School | -0.67 | | Oxford High School | -0.89 | | New Bedford High School | -1.23 | | Nantucket High School | -1.52 | | Somerville High School | -1.71 | | David Prouty High School | -1.93 | | Claremont Academy | -2.78 | | Wareham High School | -3.03 | | TechBoston Academy | -4.32 | | Millbury Memorial Junior/Senior High School | -4.35 | | Grafton High School | -4.64 | | Ayer Shirley Regional High School | -4.65 | | Bourne High School | -5.26 | | Boston Green Academy | -7.69 | | Avon Middle-High School | -25.00 | | Carver High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Granby Junior-Senior High School | . | | Joseph Case High School | . | | North Brookfield High School | . | | Sutton Memorial High School | . | |

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| |  |  | | --- | --- | | **English language learners** | | | ***School Name*** | ***Percentage point change*** | | Jeremiah E. Burke High School | 2.49 | | West Roxbury Academy | 0.78 | | Excel High School | 0.18 | | Joseph P. Keefe Regional Technical School | 0.00 | | Urban Science Academy | 0.00 | | TechBoston Academy | 0.00 | | Westfield High School | 0.00 | | Roger L. Putnam Vocational Technical Academy | 0.00 | | Fitchburg High School | 0.00 | | Chicopee High School | 0.00 | | Barnstable High School | 0.00 | | New Bedford High School | 0.00 | | Boston Green Academy | 0.00 | | Gardner High School | 0.00 | | Nantucket High School | 0.00 | | Chicopee Comprehensive High School | 0.00 | | Holyoke High School | 0.00 | | Bartlett Junior Senior High School | 0.00 | | Somerville High School | -0.54 | | Claremont Academy | -1.55 | | Pittsfield High School | -2.70 | | Charlestown High School | -3.59 | | Auburn High School | . | | Avon Middle-High School | . | | Ayer Shirley Regional High School | . | | Bay Path Regional Vocational Technical High School | . | | Blackstone-Millville Regional High School | . | | Bourne High School | . | | Carver High School | . | | David Prouty High School | . | | Drury High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Grafton High School | . | | Granby Junior-Senior High School | . | | Joseph Case High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Ludlow High School | . | | Melrose High School | . | | Millbury Memorial Junior/Senior High School | . | | Nashoba Valley Technical High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pathfinder Regional Vocational Technical High School | . | | Saugus High School | . | | Seekonk High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Taconic High School | . | | Tantasqua High School | . | | Tri-County Regional Vocational Technical High School | . | | Wahconah Regional High School | . | | Wareham High School | . | | Whitman-Hanson Regional High School | . | |

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| |  |  | | --- | --- | | **Students with disabilities** | | | ***School Name*** | ***Percentage point change*** | | Westfield High School | 2.21 | | Granby Junior-Senior High School | 2.17 | | Leicester High School | 1.79 | | Saugus High School | 1.56 | | Blackstone-Millville Regional High School | 1.54 | | Claremont Academy | 1.26 | | Nashoba Valley Technical High School | 1.20 | | Drury High School | 1.16 | | Shepherd Hill Regional High School | 1.08 | | Wareham High School | 0.79 | | Melrose High School | 0.75 | | TechBoston Academy | 0.75 | | Ludlow High School | 0.65 | | Chicopee High School | 0.64 | | Holyoke High School | 0.50 | | Pittsfield High School | 0.44 | | Tri-County Regional Vocational Technical High School | 0.33 | | New Bedford High School | 0.22 | | Whitman-Hanson Regional High School | 0.04 | | West Roxbury Academy | 0.00 | | Excel High School | 0.00 | | Joseph P. Keefe Regional Technical School | 0.00 | | Roger L. Putnam Vocational Technical Academy | 0.00 | | Fitchburg High School | 0.00 | | Barnstable High School | 0.00 | | Boston Green Academy | 0.00 | | Gardner High School | 0.00 | | Nantucket High School | 0.00 | | Chicopee Comprehensive High School | 0.00 | | Charlestown High School | 0.00 | | Franklin County Technical School | 0.00 | | Joseph Case High School | 0.00 | | Pathfinder Regional Vocational Technical High School | 0.00 | | Avon Middle-High School | 0.00 | | Grafton High School | 0.00 | | Seekonk High School | 0.00 | | Millbury Memorial Junior/Senior High School | 0.00 | | Sutton Memorial High School | 0.00 | | Bay Path Regional Vocational Technical High School | 0.00 | | Auburn High School | 0.00 | | East Bridgewater High School | 0.00 | | Lee Middle and High School | 0.00 | | North Brookfield High School | 0.00 | | Oxford High School | 0.00 | | Tantasqua High School | 0.00 | | Wahconah Regional High School | 0.00 | | Somerville High School | -0.48 | | Taconic High School | -0.56 | | Ayer Shirley Regional High School | -0.75 | | Jeremiah E. Burke High School | -0.84 | | Carver High School | -1.23 | | Urban Science Academy | -1.54 | | David Prouty High School | -1.72 | | Bartlett Junior Senior High School | -1.82 | | Bourne High School | -3.51 | |

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| |  |  | | --- | --- | | **Students who are economically disadvantaged** | | | ***School Name*** | ***Percentage point change*** | | Blackstone-Millville Regional High School | 3.75 | | West Roxbury Academy | 0.36 | | Joseph P. Keefe Regional Technical School | 0.00 | | Franklin County Technical School | 0.00 | | Pathfinder Regional Vocational Technical High School | 0.00 | | Grafton High School | -0.05 | | Seekonk High School | -0.61 | | Carver High School | -0.77 | | Tri-County Regional Vocational Technical High School | -1.05 | | Joseph Case High School | -1.08 | | Nashoba Valley Technical High School | -1.39 | | Millbury Memorial Junior/Senior High School | -1.47 | | David Prouty High School | -2.16 | | Avon Middle-High School | -2.99 | | Somerville High School | -3.80 | | Urban Science Academy | -3.89 | | TechBoston Academy | -4.64 | | Ayer Shirley Regional High School | -5.26 | | Auburn High School | . | | Barnstable High School | . | | Bartlett Junior Senior High School | . | | Bay Path Regional Vocational Technical High School | . | | Boston Green Academy | . | | Bourne High School | . | | Charlestown High School | . | | Chicopee Comprehensive High School | . | | Chicopee High School | . | | Claremont Academy | . | | Drury High School | . | | East Bridgewater High School | . | | Excel High School | . | | Fitchburg High School | . | | Gardner High School | . | | Granby Junior-Senior High School | . | | Holyoke High School | . | | Jeremiah E. Burke High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Ludlow High School | . | | Melrose High School | . | | Nantucket High School | . | | New Bedford High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pittsfield High School | . | | Roger L. Putnam Vocational Technical Academy | . | | Saugus High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Taconic High School | . | | Tantasqua High School | . | | Wahconah Regional High School | . | | Wareham High School | . | | Westfield High School | . | | Whitman-Hanson Regional High School | . | |

#### Table A.6. Percent point change in Any (ELA, math, or science) AP course taking, three years after intervention

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| |  |  | | --- | --- | | **All** | | | ***School Name*** | ***Percentage point change*** | | Sutton Memorial High School | 26.93 | | Drury High School | 25.19 | | Joseph Case High School | 19.31 | | Tantasqua High School | 18.77 | | Saugus High School | 17.92 | | Ayer Shirley Regional High School | 15.98 | | Shepherd Hill Regional High School | 15.42 | | Lee Middle and High School | 15.09 | | Auburn High School | 14.42 | | Wahconah Regional High School | 13.64 | | Oxford High School | 13.24 | | Fitchburg High School | 11.69 | | Melrose High School | 11.62 | | Holyoke High School | 11.14 | | Westfield High School | 10.73 | | Franklin County Technical School | 10.47 | | Gardner High School | 10.44 | | Whitman-Hanson Regional High School | 10.25 | | Leicester High School | 9.81 | | Seekonk High School | 9.68 | | Avon Middle-High School | 9.39 | | New Bedford High School | 9.02 | | Jeremiah E. Burke High School | 8.24 | | Bartlett Junior Senior High School | 7.97 | | Taconic High School | 7.86 | | Carver High School | 7.82 | | Pathfinder Regional Vocational Technical High School | 7.72 | | East Bridgewater High School | 7.68 | | Joseph P. Keefe Regional Technical School | 7.20 | | Ludlow High School | 6.94 | | Blackstone-Millville Regional High School | 6.69 | | North Brookfield High School | 6.67 | | Bay Path Regional Vocational Technical High School | 6.35 | | Granby Junior-Senior High School | 6.21 | | Nashoba Valley Technical High School | 5.75 | | Barnstable High School | 5.09 | | Urban Science Academy | 4.80 | | Roger L. Putnam Vocational Technical Academy | 4.62 | | Boston Green Academy | 4.31 | | Millbury Memorial Junior/Senior High School | 4.00 | | Chicopee High School | 3.95 | | Wareham High School | 3.62 | | Bourne High School | 2.93 | | Somerville High School | 2.64 | | Tri-County Regional Vocational Technical High School | 2.64 | | Chicopee Comprehensive High School | 2.59 | | Nantucket High School | 2.12 | | Charlestown High School | 1.32 | | Excel High School | 1.02 | | TechBoston Academy | 0.99 | | Grafton High School | 0.65 | | David Prouty High School | -1.69 | | Pittsfield High School | -3.80 | | Claremont Academy | -5.94 | | West Roxbury Academy | -12.36 | |

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| |  |  | | --- | --- | | **African American / Black** | | | ***School Name*** | ***Percentage point change*** | | Drury High School | 50.00 | | Ayer Shirley Regional High School | 31.82 | | Fitchburg High School | 18.72 | | Ludlow High School | 17.65 | | Melrose High School | 13.97 | | Westfield High School | 11.76 | | Boston Green Academy | 8.80 | | Bartlett Junior Senior High School | 8.79 | | Taconic High School | 7.88 | | Nantucket High School | 7.27 | | Jeremiah E. Burke High School | 7.09 | | Urban Science Academy | 7.01 | | Saugus High School | 6.85 | | Holyoke High School | 6.47 | | Roger L. Putnam Vocational Technical Academy | 5.78 | | Chicopee Comprehensive High School | 5.26 | | Joseph P. Keefe Regional Technical School | 5.13 | | New Bedford High School | 5.11 | | Gardner High School | 5.00 | | Chicopee High School | 4.77 | | Avon Middle-High School | 4.65 | | Somerville High School | 4.48 | | TechBoston Academy | 2.39 | | Barnstable High School | 2.28 | | Pittsfield High School | 0.68 | | Excel High School | 0.59 | | Charlestown High School | 0.24 | | Wareham High School | -0.13 | | Whitman-Hanson Regional High School | -7.14 | | West Roxbury Academy | -13.25 | | Claremont Academy | -15.16 | | Grafton High School | -21.43 | | Auburn High School | . | | Bay Path Regional Vocational Technical High School | . | | Blackstone-Millville Regional High School | . | | Bourne High School | . | | Carver High School | . | | David Prouty High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Granby Junior-Senior High School | . | | Joseph Case High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Millbury Memorial Junior/Senior High School | . | | Nashoba Valley Technical High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pathfinder Regional Vocational Technical High School | . | | Seekonk High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Tantasqua High School | . | | Tri-County Regional Vocational Technical High School | . | | Wahconah Regional High School | . | |

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| |  |  | | --- | --- | | **Hispanic/Latino** | | | ***School Name*** | ***Percentage point change*** | | Ayer Shirley Regional High School | 19.65 | | Drury High School | 19.12 | | David Prouty High School | 14.25 | | Saugus High School | 12.25 | | Bartlett Junior Senior High School | 11.59 | | Whitman-Hanson Regional High School | 11.54 | | Shepherd Hill Regional High School | 10.20 | | Ludlow High School | 10.19 | | Holyoke High School | 10.01 | | Taconic High School | 10.00 | | Fitchburg High School | 9.67 | | Lee Middle and High School | 9.52 | | Jeremiah E. Burke High School | 8.48 | | Avon Middle-High School | 8.33 | | Pathfinder Regional Vocational Technical High School | 8.11 | | Westfield High School | 7.19 | | Auburn High School | 7.08 | | Nashoba Valley Technical High School | 6.01 | | Wareham High School | 5.57 | | New Bedford High School | 5.39 | | Tantasqua High School | 5.29 | | Leicester High School | 4.81 | | Wahconah Regional High School | 4.55 | | Joseph P. Keefe Regional Technical School | 4.36 | | Gardner High School | 4.24 | | Blackstone-Millville Regional High School | 4.17 | | Chicopee High School | 3.57 | | Melrose High School | 3.43 | | Roger L. Putnam Vocational Technical Academy | 3.14 | | Chicopee Comprehensive High School | 2.42 | | Somerville High School | 1.88 | | Urban Science Academy | 1.47 | | Tri-County Regional Vocational Technical High School | 1.18 | | Excel High School | 1.03 | | Joseph Case High School | 0.00 | | Seekonk High School | 0.00 | | Bay Path Regional Vocational Technical High School | -0.22 | | Pittsfield High School | -0.70 | | TechBoston Academy | -0.74 | | Grafton High School | -1.19 | | Charlestown High School | -1.37 | | Barnstable High School | -2.26 | | Nantucket High School | -2.81 | | Boston Green Academy | -3.58 | | Oxford High School | -4.10 | | Claremont Academy | -4.43 | | Bourne High School | -10.53 | | Millbury Memorial Junior/Senior High School | -11.33 | | West Roxbury Academy | -11.82 | | Carver High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Granby Junior-Senior High School | . | | North Brookfield High School | . | | Sutton Memorial High School | . | |

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| |  |  | | --- | --- | | **English language learners** | | | ***School Name*** | ***Percentage point change*** | | Holyoke High School | 23.84 | | Urban Science Academy | 13.83 | | Chicopee Comprehensive High School | 5.00 | | Jeremiah E. Burke High School | 4.41 | | Claremont Academy | 2.63 | | TechBoston Academy | 1.92 | | New Bedford High School | 0.93 | | Somerville High School | 0.76 | | Charlestown High School | 0.58 | | Barnstable High School | 0.00 | | Bartlett Junior Senior High School | 0.00 | | Chicopee High School | 0.00 | | Gardner High School | 0.00 | | Joseph P. Keefe Regional Technical School | 0.00 | | Nantucket High School | 0.00 | | Roger L. Putnam Vocational Technical Academy | 0.00 | | West Roxbury Academy | 0.00 | | Westfield High School | 0.00 | | Saugus High School | -0.48 | | Fitchburg High School | -0.76 | | Pittsfield High School | -1.15 | | Boston Green Academy | -2.18 | | Excel High School | -2.29 | | Auburn High School | . | | Avon Middle-High School | . | | Ayer Shirley Regional High School | . | | Bay Path Regional Vocational Technical High School | . | | Blackstone-Millville Regional High School | . | | Bourne High School | . | | Carver High School | . | | David Prouty High School | . | | Drury High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Grafton High School | . | | Granby Junior-Senior High School | . | | Joseph Case High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Ludlow High School | . | | Melrose High School | . | | Millbury Memorial Junior/Senior High School | . | | Nashoba Valley Technical High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pathfinder Regional Vocational Technical High School | . | | Seekonk High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Taconic High School | . | | Tantasqua High School | . | | Tri-County Regional Vocational Technical High School | . | | Wahconah Regional High School | . | | Wareham High School | . | | Whitman-Hanson Regional High School | . | |

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| |  |  | | --- | --- | | **Students with disabilities** | | | ***School Name*** | ***Percentage point change*** | | Drury High School | 12.33 | | Granby Junior-Senior High School | 9.38 | | Avon Middle-High School | 6.45 | | Holyoke High School | 6.43 | | Boston Green Academy | 5.52 | | North Brookfield High School | 5.26 | | Nantucket High School | 4.49 | | Franklin County Technical School | 3.25 | | Gardner High School | 2.78 | | Nashoba Valley Technical High School | 2.70 | | Saugus High School | 2.47 | | TechBoston Academy | 2.35 | | Taconic High School | 2.35 | | Barnstable High School | 1.85 | | Wareham High School | 1.83 | | Jeremiah E. Burke High School | 1.76 | | Wahconah Regional High School | 1.72 | | East Bridgewater High School | 1.69 | | Pathfinder Regional Vocational Technical High School | 1.59 | | Fitchburg High School | 1.31 | | New Bedford High School | 1.23 | | Somerville High School | 1.04 | | Pittsfield High School | 0.95 | | Tri-County Regional Vocational Technical High School | 0.93 | | Chicopee Comprehensive High School | 0.90 | | Melrose High School | 0.73 | | Excel High School | 0.69 | | Joseph P. Keefe Regional Technical School | 0.64 | | Westfield High School | 0.64 | | Bay Path Regional Vocational Technical High School | 0.61 | | Chicopee High School | 0.56 | | Roger L. Putnam Vocational Technical Academy | 0.45 | | Ludlow High School | 0.12 | | Millbury Memorial Junior/Senior High School | 0.06 | | Auburn High School | 0.00 | | Blackstone-Millville Regional High School | 0.00 | | Grafton High School | 0.00 | | Joseph Case High School | 0.00 | | Lee Middle and High School | 0.00 | | Leicester High School | 0.00 | | Oxford High School | 0.00 | | Seekonk High School | 0.00 | | Sutton Memorial High School | 0.00 | | Tantasqua High School | 0.00 | | Ayer Shirley Regional High School | -0.09 | | Whitman-Hanson Regional High School | -0.19 | | Shepherd Hill Regional High School | -0.32 | | Carver High School | -1.23 | | Claremont Academy | -1.41 | | Charlestown High School | -1.60 | | West Roxbury Academy | -1.82 | | David Prouty High School | -3.45 | | Bartlett Junior Senior High School | -3.64 | | Urban Science Academy | -4.88 | | Bourne High School | -5.57 | |

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| |  |  | | --- | --- | | **Students who are economically disadvantaged** | | | ***School Name*** | ***Percentage point change*** | | Joseph Case High School | 20.62 | | Franklin County Technical School | 9.44 | | Seekonk High School | 9.40 | | Carver High School | 7.91 | | Pathfinder Regional Vocational Technical High School | 6.20 | | Blackstone-Millville Regional High School | 5.53 | | Ayer Shirley Regional High School | 5.43 | | Grafton High School | 3.39 | | Joseph P. Keefe Regional Technical School | 2.61 | | Avon Middle-High School | 2.32 | | Millbury Memorial Junior/Senior High School | 1.96 | | Tri-County Regional Vocational Technical High School | 0.90 | | TechBoston Academy | 0.83 | | Urban Science Academy | -1.16 | | Nashoba Valley Technical High School | -1.42 | | Somerville High School | -2.73 | | David Prouty High School | -3.79 | | West Roxbury Academy | -12.21 | | Auburn High School | . | | Barnstable High School | . | | Bartlett Junior Senior High School | . | | Bay Path Regional Vocational Technical High School | . | | Boston Green Academy | . | | Bourne High School | . | | Charlestown High School | . | | Chicopee Comprehensive High School | . | | Chicopee High School | . | | Claremont Academy | . | | Drury High School | . | | East Bridgewater High School | . | | Excel High School | . | | Fitchburg High School | . | | Gardner High School | . | | Granby Junior-Senior High School | . | | Holyoke High School | . | | Jeremiah E. Burke High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Ludlow High School | . | | Melrose High School | . | | Nantucket High School | . | | New Bedford High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pittsfield High School | . | | Roger L. Putnam Vocational Technical Academy | . | | Saugus High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Taconic High School | . | | Tantasqua High School | . | | Wahconah Regional High School | . | | Wareham High School | . | | Westfield High School | . | | Whitman-Hanson Regional High School | . | |

#### Table A.7. Percent point change in AP Science course taking, three years after intervention

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| |  |  | | --- | --- | | **All** | | | ***School Name*** | ***Percentage point change*** | | Drury High School | 14.74 | | Melrose High School | 13.61 | | Gardner High School | 12.78 | | Sutton Memorial High School | 12.21 | | Oxford High School | 10.73 | | Tantasqua High School | 10.08 | | Saugus High School | 9.91 | | North Brookfield High School | 9.46 | | Holyoke High School | 9.04 | | Auburn High School | 8.17 | | Westfield High School | 7.94 | | Seekonk High School | 7.26 | | Whitman-Hanson Regional High School | 7.15 | | Shepherd Hill Regional High School | 7.02 | | Fitchburg High School | 6.96 | | Wahconah Regional High School | 6.95 | | Lee Middle and High School | 6.01 | | Nashoba Valley Technical High School | 5.40 | | East Bridgewater High School | 4.77 | | Leicester High School | 3.85 | | Granby Junior-Senior High School | 3.28 | | Urban Science Academy | 3.28 | | Barnstable High School | 3.21 | | New Bedford High School | 3.17 | | Bourne High School | 3.17 | | Joseph P. Keefe Regional Technical School | 3.07 | | Blackstone-Millville Regional High School | 3.00 | | Somerville High School | 2.95 | | Carver High School | 2.85 | | Ayer Shirley Regional High School | 2.35 | | Nantucket High School | 2.26 | | Bay Path Regional Vocational Technical High School | 2.06 | | Chicopee Comprehensive High School | 1.94 | | Ludlow High School | 1.86 | | Bartlett Junior Senior High School | 0.88 | | Joseph Case High School | 0.79 | | Roger L. Putnam Vocational Technical Academy | 0.57 | | Wareham High School | 0.55 | | Claremont Academy | 0.38 | | Tri-County Regional Vocational Technical High School | 0.36 | | Excel High School | 0.35 | | Chicopee High School | 0.30 | | Jeremiah E. Burke High School | 0.10 | | Franklin County Technical School | 0.00 | | Pathfinder Regional Vocational Technical High School | 0.00 | | Millbury Memorial Junior/Senior High School | -0.14 | | Taconic High School | -0.77 | | TechBoston Academy | -1.04 | | Charlestown High School | -1.15 | | Avon Middle-High School | -1.30 | | Boston Green Academy | -1.45 | | Grafton High School | -1.77 | | David Prouty High School | -2.23 | | Pittsfield High School | -3.47 | | West Roxbury Academy | -5.51 | |

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| |  |  | | --- | --- | | **African American / Black** | | | ***School Name*** | ***Percentage point change*** | | Drury High School | 28.57 | | Ludlow High School | 17.65 | | Ayer Shirley Regional High School | 13.64 | | Melrose High School | 6.49 | | Westfield High School | 5.88 | | Chicopee High School | 5.41 | | Gardner High School | 5.00 | | Saugus High School | 4.77 | | Holyoke High School | 4.35 | | Claremont Academy | 4.00 | | Fitchburg High School | 3.60 | | Taconic High School | 3.44 | | Urban Science Academy | 2.89 | | Chicopee Comprehensive High School | 2.63 | | Joseph P. Keefe Regional Technical School | 2.56 | | Pittsfield High School | 2.38 | | New Bedford High School | 1.58 | | TechBoston Academy | 1.54 | | Somerville High School | 1.32 | | Roger L. Putnam Vocational Technical Academy | 0.36 | | Excel High School | 0.24 | | Jeremiah E. Burke High School | 0.19 | | Boston Green Academy | 0.02 | | Nantucket High School | -0.15 | | Barnstable High School | -0.55 | | Wareham High School | -1.49 | | Avon Middle-High School | -2.33 | | Charlestown High School | -3.87 | | Bartlett Junior Senior High School | -4.55 | | West Roxbury Academy | -6.41 | | Whitman-Hanson Regional High School | -7.14 | | Grafton High School | -14.29 | | Auburn High School | . | | Bay Path Regional Vocational Technical High School | . | | Blackstone-Millville Regional High School | . | | Bourne High School | . | | Carver High School | . | | David Prouty High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Granby Junior-Senior High School | . | | Joseph Case High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Millbury Memorial Junior/Senior High School | . | | Nashoba Valley Technical High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pathfinder Regional Vocational Technical High School | . | | Seekonk High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Tantasqua High School | . | | Tri-County Regional Vocational Technical High School | . | | Wahconah Regional High School | . | |

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| |  |  | | --- | --- | | **Hispanic/Latino** | | | ***School Name*** | ***Percentage point change*** | | Drury High School | 20.00 | | Melrose High School | 8.89 | | Tantasqua High School | 8.43 | | Holyoke High School | 7.97 | | Whitman-Hanson Regional High School | 7.69 | | Shepherd Hill Regional High School | 6.35 | | Gardner High School | 5.36 | | Fitchburg High School | 5.06 | | Westfield High School | 5.04 | | Saugus High School | 4.92 | | Ayer Shirley Regional High School | 3.86 | | Urban Science Academy | 3.24 | | Pittsfield High School | 3.03 | | Ludlow High School | 2.72 | | David Prouty High School | 2.71 | | Auburn High School | 2.63 | | Joseph P. Keefe Regional Technical School | 2.49 | | Taconic High School | 2.08 | | Wareham High School | 1.62 | | Chicopee Comprehensive High School | 1.58 | | Somerville High School | 1.49 | | Bay Path Regional Vocational Technical High School | 1.33 | | New Bedford High School | 1.28 | | Chicopee High School | 1.28 | | Roger L. Putnam Vocational Technical Academy | 0.46 | | Seekonk High School | 0.00 | | Wahconah Regional High School | 0.00 | | Lee Middle and High School | 0.00 | | Blackstone-Millville Regional High School | 0.00 | | Joseph Case High School | 0.00 | | Tri-County Regional Vocational Technical High School | 0.00 | | Pathfinder Regional Vocational Technical High School | 0.00 | | Jeremiah E. Burke High School | -0.16 | | Claremont Academy | -0.22 | | Barnstable High School | -0.37 | | Bartlett Junior Senior High School | -0.42 | | Charlestown High School | -0.58 | | Excel High School | -0.97 | | Nantucket High School | -1.52 | | Nashoba Valley Technical High School | -2.56 | | Leicester High School | -2.59 | | Boston Green Academy | -3.15 | | Oxford High School | -3.33 | | TechBoston Academy | -3.72 | | West Roxbury Academy | -4.55 | | Grafton High School | -4.64 | | Millbury Memorial Junior/Senior High School | -5.67 | | Bourne High School | -10.53 | | Avon Middle-High School | -16.67 | | Carver High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Granby Junior-Senior High School | . | | North Brookfield High School | . | | Sutton Memorial High School | . | |

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| |  |  | | --- | --- | | **English language learners** | | | ***School Name*** | ***Percentage point change*** | | Holyoke High School | 23.84 | | Urban Science Academy | 8.89 | | Claremont Academy | 4.99 | | Chicopee Comprehensive High School | 2.86 | | Jeremiah E. Burke High School | 1.90 | | TechBoston Academy | 1.28 | | New Bedford High School | 0.93 | | Excel High School | 0.33 | | Somerville High School | 0.11 | | Joseph P. Keefe Regional Technical School | 0.00 | | West Roxbury Academy | 0.00 | | Boston Green Academy | 0.00 | | Gardner High School | 0.00 | | Saugus High School | 0.00 | | Nantucket High School | 0.00 | | Westfield High School | 0.00 | | Barnstable High School | 0.00 | | Fitchburg High School | 0.00 | | Chicopee High School | 0.00 | | Roger L. Putnam Vocational Technical Academy | 0.00 | | Bartlett Junior Senior High School | 0.00 | | Charlestown High School | -0.14 | | Pittsfield High School | -2.70 | | Auburn High School | . | | Avon Middle-High School | . | | Ayer Shirley Regional High School | . | | Bay Path Regional Vocational Technical High School | . | | Blackstone-Millville Regional High School | . | | Bourne High School | . | | Carver High School | . | | David Prouty High School | . | | Drury High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Grafton High School | . | | Granby Junior-Senior High School | . | | Joseph Case High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Ludlow High School | . | | Melrose High School | . | | Millbury Memorial Junior/Senior High School | . | | Nashoba Valley Technical High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pathfinder Regional Vocational Technical High School | . | | Seekonk High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Taconic High School | . | | Tantasqua High School | . | | Tri-County Regional Vocational Technical High School | . | | Wahconah Regional High School | . | | Wareham High School | . | | Whitman-Hanson Regional High School | . | |

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| |  |  | | --- | --- | | **Students with disabilities** | | | ***School Name*** | ***Percentage point change*** | | Drury High School | 8.22 | | Holyoke High School | 6.94 | | Avon Middle-High School | 6.45 | | Boston Green Academy | 3.33 | | Nashoba Valley Technical High School | 1.83 | | East Bridgewater High School | 1.69 | | Millbury Memorial Junior/Senior High School | 1.45 | | Gardner High School | 1.39 | | Saugus High School | 1.23 | | Nantucket High School | 1.12 | | Wareham High School | 0.92 | | Shepherd Hill Regional High School | 0.92 | | Ludlow High School | 0.74 | | Excel High School | 0.69 | | Melrose High School | 0.69 | | Westfield High School | 0.64 | | Barnstable High School | 0.62 | | Bay Path Regional Vocational Technical High School | 0.61 | | Somerville High School | 0.52 | | Pittsfield High School | 0.48 | | Jeremiah E. Burke High School | 0.46 | | Chicopee Comprehensive High School | 0.45 | | Joseph P. Keefe Regional Technical School | 0.32 | | Tri-County Regional Vocational Technical High School | 0.31 | | New Bedford High School | 0.25 | | TechBoston Academy | 0.22 | | Whitman-Hanson Regional High School | 0.19 | | Fitchburg High School | 0.00 | | Chicopee High School | 0.00 | | Roger L. Putnam Vocational Technical Academy | 0.00 | | Joseph Case High School | 0.00 | | Franklin County Technical School | 0.00 | | Seekonk High School | 0.00 | | Pathfinder Regional Vocational Technical High School | 0.00 | | Blackstone-Millville Regional High School | 0.00 | | Grafton High School | 0.00 | | Granby Junior-Senior High School | 0.00 | | North Brookfield High School | 0.00 | | Wahconah Regional High School | 0.00 | | Auburn High School | 0.00 | | Lee Middle and High School | 0.00 | | Leicester High School | 0.00 | | Oxford High School | 0.00 | | Sutton Memorial High School | 0.00 | | Tantasqua High School | 0.00 | | Ayer Shirley Regional High School | -0.09 | | Taconic High School | -0.32 | | West Roxbury Academy | -0.91 | | Charlestown High School | -1.07 | | Carver High School | -1.23 | | Claremont Academy | -1.41 | | David Prouty High School | -1.72 | | Bartlett Junior Senior High School | -1.82 | | Urban Science Academy | -2.44 | | Bourne High School | -5.57 | |

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| |  |  | | --- | --- | | **Students who are economically disadvantaged** | | | ***School Name*** | ***Percentage point change*** | | Seekonk High School | 5.82 | | Joseph P. Keefe Regional Technical School | 1.63 | | Nashoba Valley Technical High School | 1.42 | | Grafton High School | 1.07 | | Joseph Case High School | 0.90 | | Franklin County Technical School | 0.00 | | Pathfinder Regional Vocational Technical High School | 0.00 | | Tri-County Regional Vocational Technical High School | -0.04 | | Millbury Memorial Junior/Senior High School | -0.49 | | TechBoston Academy | -0.81 | | Somerville High School | -1.09 | | Urban Science Academy | -1.40 | | Blackstone-Millville Regional High School | -1.45 | | Ayer Shirley Regional High School | -2.33 | | Carver High School | -2.54 | | David Prouty High School | -3.98 | | West Roxbury Academy | -4.20 | | Avon Middle-High School | -8.29 | | Auburn High School | . | | Barnstable High School | . | | Bartlett Junior Senior High School | . | | Bay Path Regional Vocational Technical High School | . | | Boston Green Academy | . | | Bourne High School | . | | Charlestown High School | . | | Chicopee Comprehensive High School | . | | Chicopee High School | . | | Claremont Academy | . | | Drury High School | . | | East Bridgewater High School | . | | Excel High School | . | | Fitchburg High School | . | | Gardner High School | . | | Granby Junior-Senior High School | . | | Holyoke High School | . | | Jeremiah E. Burke High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Ludlow High School | . | | Melrose High School | . | | Nantucket High School | . | | New Bedford High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pittsfield High School | . | | Roger L. Putnam Vocational Technical Academy | . | | Saugus High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Taconic High School | . | | Tantasqua High School | . | | Wahconah Regional High School | . | | Wareham High School | . | | Westfield High School | . | | Whitman-Hanson Regional High School | . | |

#### Table A.8. Percent point change in Any (ELA, math, or science) AP course passing, three years after intervention

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| |  |  | | --- | --- | | **All** | | | ***School Name*** | ***Percentage point change*** | | Sutton Memorial High School | 26.93 | | Drury High School | 20.94 | | Tantasqua High School | 18.76 | | Saugus High School | 18.72 | | Joseph Case High School | 18.35 | | Lee Middle and High School | 16.31 | | Ayer Shirley Regional High School | 15.21 | | Shepherd Hill Regional High School | 15.08 | | Auburn High School | 14.55 | | Fitchburg High School | 14.05 | | Oxford High School | 13.21 | | Wahconah Regional High School | 10.50 | | Leicester High School | 10.21 | | Seekonk High School | 10.03 | | Melrose High School | 10.02 | | Westfield High School | 9.80 | | Whitman-Hanson Regional High School | 9.64 | | Holyoke High School | 9.18 | | Franklin County Technical School | 9.03 | | Gardner High School | 8.43 | | East Bridgewater High School | 8.25 | | Avon Middle-High School | 7.86 | | Bartlett Junior Senior High School | 7.69 | | Carver High School | 7.32 | | Granby Junior-Senior High School | 6.98 | | North Brookfield High School | 6.68 | | Joseph P. Keefe Regional Technical School | 6.67 | | Bay Path Regional Vocational Technical High School | 6.17 | | Blackstone-Millville Regional High School | 6.14 | | Taconic High School | 6.04 | | Ludlow High School | 6.03 | | Millbury Memorial Junior/Senior High School | 6.00 | | Jeremiah E. Burke High School | 5.88 | | New Bedford High School | 5.50 | | Nashoba Valley Technical High School | 5.45 | | Pathfinder Regional Vocational Technical High School | 5.25 | | Barnstable High School | 4.73 | | Roger L. Putnam Vocational Technical Academy | 4.34 | | Wareham High School | 3.92 | | Bourne High School | 3.77 | | Chicopee High School | 3.66 | | Tri-County Regional Vocational Technical High School | 2.35 | | Boston Green Academy | 1.79 | | Chicopee Comprehensive High School | 1.58 | | Excel High School | 1.58 | | Grafton High School | 1.28 | | Somerville High School | 1.22 | | Charlestown High School | 1.09 | | TechBoston Academy | 0.75 | | Nantucket High School | 0.45 | | Claremont Academy | 0.07 | | Urban Science Academy | -1.12 | | David Prouty High School | -1.36 | | Pittsfield High School | -3.41 | | West Roxbury Academy | -10.84 | |

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| |  |  | | --- | --- | | **African American / Black** | | | ***School Name*** | ***Percentage point change*** | | Drury High School | 42.86 | | Ayer Shirley Regional High School | 31.82 | | Fitchburg High School | 25.65 | | Ludlow High School | 17.65 | | Melrose High School | 13.97 | | Westfield High School | 8.82 | | Bartlett Junior Senior High School | 8.79 | | Taconic High School | 7.88 | | Boston Green Academy | 7.43 | | Holyoke High School | 6.47 | | Roger L. Putnam Vocational Technical Academy | 5.78 | | Nantucket High School | 5.76 | | Chicopee Comprehensive High School | 5.26 | | Joseph P. Keefe Regional Technical School | 5.13 | | Gardner High School | 5.00 | | Chicopee High School | 4.77 | | Saugus High School | 4.14 | | Jeremiah E. Burke High School | 4.08 | | Pittsfield High School | 3.68 | | Avon Middle-High School | 3.49 | | New Bedford High School | 2.84 | | TechBoston Academy | 2.08 | | Somerville High School | 1.45 | | Wareham High School | 1.36 | | Barnstable High School | 1.34 | | Excel High School | 0.38 | | Charlestown High School | 0.26 | | Claremont Academy | 0.23 | | Urban Science Academy | -2.63 | | Whitman-Hanson Regional High School | -3.57 | | West Roxbury Academy | -11.97 | | Grafton High School | -14.29 | | Auburn High School | . | | Bay Path Regional Vocational Technical High School | . | | Blackstone-Millville Regional High School | . | | Bourne High School | . | | Carver High School | . | | David Prouty High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Granby Junior-Senior High School | . | | Joseph Case High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Millbury Memorial Junior/Senior High School | . | | Nashoba Valley Technical High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pathfinder Regional Vocational Technical High School | . | | Seekonk High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Tantasqua High School | . | | Tri-County Regional Vocational Technical High School | . | | Wahconah Regional High School | . | |

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| |  |  | | --- | --- | | **Hispanic/Latino** | | | ***School Name*** | ***Percentage point change*** | | Drury High School | 19.12 | | Ayer Shirley Regional High School | 17.01 | | David Prouty High School | 14.25 | | Whitman-Hanson Regional High School | 11.54 | | Saugus High School | 11.03 | | Bartlett Junior Senior High School | 10.58 | | Shepherd Hill Regional High School | 10.20 | | Fitchburg High School | 9.95 | | Lee Middle and High School | 9.52 | | Wahconah Regional High School | 9.09 | | Ludlow High School | 8.69 | | Avon Middle-High School | 8.33 | | Holyoke High School | 7.95 | | Taconic High School | 7.92 | | Jeremiah E. Burke High School | 7.72 | | Auburn High School | 7.08 | | Nashoba Valley Technical High School | 6.01 | | Westfield High School | 5.76 | | Wareham High School | 5.57 | | Tantasqua High School | 5.29 | | Leicester High School | 4.81 | | Joseph P. Keefe Regional Technical School | 4.36 | | Gardner High School | 4.24 | | Blackstone-Millville Regional High School | 4.17 | | Chicopee High School | 3.59 | | Roger L. Putnam Vocational Technical Academy | 2.82 | | Pathfinder Regional Vocational Technical High School | 2.70 | | New Bedford High School | 2.51 | | Excel High School | 2.32 | | Chicopee Comprehensive High School | 1.70 | | Melrose High School | 1.21 | | Tri-County Regional Vocational Technical High School | 1.18 | | Claremont Academy | 0.90 | | Somerville High School | 0.27 | | TechBoston Academy | 0.21 | | Joseph Case High School | 0.00 | | Seekonk High School | 0.00 | | Bay Path Regional Vocational Technical High School | -0.22 | | Charlestown High School | -0.63 | | Pittsfield High School | -0.70 | | Urban Science Academy | -2.08 | | Nantucket High School | -2.81 | | Barnstable High School | -3.02 | | Oxford High School | -4.10 | | Grafton High School | -4.64 | | Bourne High School | -5.26 | | Boston Green Academy | -5.86 | | Millbury Memorial Junior/Senior High School | -6.98 | | West Roxbury Academy | -10.45 | | Carver High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Granby Junior-Senior High School | . | | North Brookfield High School | . | | Sutton Memorial High School | . | |

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| |  |  | | --- | --- | | **English language learners** | | | ***School Name*** | ***Percentage point change*** | | Holyoke High School | 15.12 | | Chicopee Comprehensive High School | 5.00 | | Urban Science Academy | 4.44 | | Claremont Academy | 2.63 | | Jeremiah E. Burke High School | 1.94 | | TechBoston Academy | 1.92 | | Charlestown High School | 0.90 | | New Bedford High School | 0.47 | | Somerville High School | 0.11 | | Barnstable High School | 0.00 | | Bartlett Junior Senior High School | 0.00 | | Chicopee High School | 0.00 | | Gardner High School | 0.00 | | Joseph P. Keefe Regional Technical School | 0.00 | | Nantucket High School | 0.00 | | Roger L. Putnam Vocational Technical Academy | 0.00 | | Saugus High School | 0.00 | | West Roxbury Academy | 0.00 | | Westfield High School | 0.00 | | Fitchburg High School | -0.76 | | Pittsfield High School | -1.15 | | Excel High School | -1.63 | | Boston Green Academy | -2.18 | | Auburn High School | . | | Avon Middle-High School | . | | Ayer Shirley Regional High School | . | | Bay Path Regional Vocational Technical High School | . | | Blackstone-Millville Regional High School | . | | Bourne High School | . | | Carver High School | . | | David Prouty High School | . | | Drury High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Grafton High School | . | | Granby Junior-Senior High School | . | | Joseph Case High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Ludlow High School | . | | Melrose High School | . | | Millbury Memorial Junior/Senior High School | . | | Nashoba Valley Technical High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pathfinder Regional Vocational Technical High School | . | | Seekonk High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Taconic High School | . | | Tantasqua High School | . | | Tri-County Regional Vocational Technical High School | . | | Wahconah Regional High School | . | | Wareham High School | . | | Whitman-Hanson Regional High School | . | |

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| |  |  | | --- | --- | | **Students with disabilities** | | | ***School Name*** | ***Percentage point change*** | | Drury High School | 9.59 | | Avon Middle-High School | 6.45 | | Granby Junior-Senior High School | 6.25 | | North Brookfield High School | 5.26 | | Nantucket High School | 3.37 | | Boston Green Academy | 3.33 | | Franklin County Technical School | 3.25 | | Holyoke High School | 2.96 | | Nashoba Valley Technical High School | 2.70 | | Saugus High School | 2.47 | | Wareham High School | 1.83 | | Wahconah Regional High School | 1.72 | | East Bridgewater High School | 1.69 | | Somerville High School | 1.51 | | Millbury Memorial Junior/Senior High School | 1.45 | | Taconic High School | 1.41 | | Pittsfield High School | 1.39 | | Gardner High School | 1.39 | | Barnstable High School | 1.23 | | TechBoston Academy | 1.18 | | Tri-County Regional Vocational Technical High School | 0.93 | | Fitchburg High School | 0.87 | | Melrose High School | 0.73 | | Excel High School | 0.69 | | Westfield High School | 0.64 | | Bay Path Regional Vocational Technical High School | 0.61 | | Chicopee High School | 0.56 | | Pathfinder Regional Vocational Technical High School | 0.53 | | New Bedford High School | 0.49 | | Jeremiah E. Burke High School | 0.46 | | Chicopee Comprehensive High School | 0.45 | | Roger L. Putnam Vocational Technical Academy | 0.45 | | Joseph P. Keefe Regional Technical School | 0.32 | | Ludlow High School | 0.12 | | Charlestown High School | 0.00 | | Auburn High School | 0.00 | | Blackstone-Millville Regional High School | 0.00 | | Grafton High School | 0.00 | | Joseph Case High School | 0.00 | | Lee Middle and High School | 0.00 | | Leicester High School | 0.00 | | Oxford High School | 0.00 | | Seekonk High School | 0.00 | | Sutton Memorial High School | 0.00 | | Tantasqua High School | 0.00 | | Ayer Shirley Regional High School | -0.09 | | Whitman-Hanson Regional High School | -0.19 | | West Roxbury Academy | -0.91 | | Carver High School | -1.23 | | Shepherd Hill Regional High School | -1.23 | | Claremont Academy | -1.41 | | Bourne High School | -2.06 | | Urban Science Academy | -3.25 | | David Prouty High School | -3.45 | | Bartlett Junior Senior High School | -3.64 | |

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| |  |  | | --- | --- | | **Students who are economically disadvantaged** | | | ***School Name*** | ***Percentage point change*** | | Joseph Case High School | 17.65 | | Seekonk High School | 9.40 | | Franklin County Technical School | 8.89 | | Carver High School | 6.42 | | Grafton High School | 4.68 | | Ayer Shirley Regional High School | 4.32 | | Pathfinder Regional Vocational Technical High School | 4.13 | | Blackstone-Millville Regional High School | 3.06 | | Avon Middle-High School | 2.32 | | Joseph P. Keefe Regional Technical School | 2.29 | | Millbury Memorial Junior/Senior High School | 1.96 | | Tri-County Regional Vocational Technical High School | 0.90 | | TechBoston Academy | 0.27 | | Nashoba Valley Technical High School | -2.13 | | David Prouty High School | -2.80 | | Somerville High School | -4.54 | | Urban Science Academy | -5.16 | | West Roxbury Academy | -9.92 | | Auburn High School | . | | Barnstable High School | . | | Bartlett Junior Senior High School | . | | Bay Path Regional Vocational Technical High School | . | | Boston Green Academy | . | | Bourne High School | . | | Charlestown High School | . | | Chicopee Comprehensive High School | . | | Chicopee High School | . | | Claremont Academy | . | | Drury High School | . | | East Bridgewater High School | . | | Excel High School | . | | Fitchburg High School | . | | Gardner High School | . | | Granby Junior-Senior High School | . | | Holyoke High School | . | | Jeremiah E. Burke High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Ludlow High School | . | | Melrose High School | . | | Nantucket High School | . | | New Bedford High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pittsfield High School | . | | Roger L. Putnam Vocational Technical Academy | . | | Saugus High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Taconic High School | . | | Tantasqua High School | . | | Wahconah Regional High School | . | | Wareham High School | . | | Westfield High School | . | | Whitman-Hanson Regional High School | . | |

#### Table A.9. Percent point change in AP Science course passing, three years after intervention

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| |  |  | | --- | --- | | **All** | | | ***School Name*** | ***Percentage point change*** | | Sutton Memorial High School | 12.21 | | Melrose High School | 11.70 | | Gardner High School | 11.32 | | Drury High School | 10.86 | | Oxford High School | 10.46 | | Tantasqua High School | 9.94 | | Saugus High School | 9.68 | | Fitchburg High School | 9.12 | | North Brookfield High School | 8.78 | | Auburn High School | 8.15 | | Seekonk High School | 7.44 | | Westfield High School | 7.29 | | Holyoke High School | 7.15 | | Shepherd Hill Regional High School | 6.76 | | Whitman-Hanson Regional High School | 6.71 | | Wahconah Regional High School | 5.29 | | Lee Middle and High School | 5.15 | | Nashoba Valley Technical High School | 4.69 | | East Bridgewater High School | 4.62 | | Leicester High School | 3.82 | | Bourne High School | 3.78 | | Granby Junior-Senior High School | 3.28 | | Joseph P. Keefe Regional Technical School | 2.80 | | Barnstable High School | 2.80 | | Blackstone-Millville Regional High School | 2.51 | | Joseph Case High School | 2.29 | | Bay Path Regional Vocational Technical High School | 2.06 | | Nantucket High School | 1.93 | | Carver High School | 1.87 | | Somerville High School | 1.70 | | New Bedford High School | 1.69 | | Millbury Memorial Junior/Senior High School | 1.64 | | Ludlow High School | 1.61 | | Ayer Shirley Regional High School | 1.58 | | Chicopee Comprehensive High School | 1.47 | | Bartlett Junior Senior High School | 1.07 | | Excel High School | 0.99 | | Wareham High School | 0.84 | | Claremont Academy | 0.77 | | Roger L. Putnam Vocational Technical Academy | 0.43 | | Tri-County Regional Vocational Technical High School | 0.07 | | Jeremiah E. Burke High School | 0.06 | | Chicopee High School | 0.01 | | Franklin County Technical School | 0.00 | | Pathfinder Regional Vocational Technical High School | 0.00 | | Charlestown High School | -0.43 | | Grafton High School | -1.15 | | Taconic High School | -1.20 | | David Prouty High School | -1.62 | | TechBoston Academy | -1.78 | | Urban Science Academy | -2.20 | | Pittsfield High School | -3.15 | | Boston Green Academy | -3.28 | | Avon Middle-High School | -3.34 | | West Roxbury Academy | -4.75 | |
| |  |  | | --- | --- | | **African American / Black** | | | ***School Name*** | ***Percentage point change*** | | Drury High School | 21.43 | | Ludlow High School | 17.65 | | Ayer Shirley Regional High School | 13.64 | | Fitchburg High School | 9.54 | | Claremont Academy | 7.84 | | Melrose High School | 6.49 | | Westfield High School | 5.88 | | Chicopee High School | 5.41 | | Gardner High School | 5.00 | | Pittsfield High School | 4.38 | | Holyoke High School | 4.35 | | Taconic High School | 3.44 | | Chicopee Comprehensive High School | 2.63 | | Joseph P. Keefe Regional Technical School | 2.56 | | Saugus High School | 2.07 | | Somerville High School | 1.32 | | New Bedford High School | 1.20 | | Excel High School | 1.04 | | TechBoston Academy | 1.02 | | Roger L. Putnam Vocational Technical Academy | 0.36 | | Wareham High School | 0.00 | | Nantucket High School | -0.15 | | Jeremiah E. Burke High School | -0.33 | | Barnstable High School | -0.55 | | Boston Green Academy | -1.92 | | Charlestown High School | -2.43 | | Avon Middle-High School | -3.49 | | Whitman-Hanson Regional High School | -3.57 | | Urban Science Academy | -4.36 | | Bartlett Junior Senior High School | -4.55 | | West Roxbury Academy | -5.98 | | Grafton High School | -7.14 | | Auburn High School | . | | Bay Path Regional Vocational Technical High School | . | | Blackstone-Millville Regional High School | . | | Bourne High School | . | | Carver High School | . | | David Prouty High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Granby Junior-Senior High School | . | | Joseph Case High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Millbury Memorial Junior/Senior High School | . | | Nashoba Valley Technical High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pathfinder Regional Vocational Technical High School | . | | Seekonk High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Tantasqua High School | . | | Tri-County Regional Vocational Technical High School | . | | Wahconah Regional High School | . | |

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| |  |  | | --- | --- | | **Hispanic/Latino** | | | ***School Name*** | ***Percentage point change*** | | Drury High School | 15.00 | | Melrose High School | 8.89 | | Tantasqua High School | 8.43 | | Shepherd Hill Regional High School | 6.35 | | Holyoke High School | 6.02 | | Westfield High School | 5.04 | | Fitchburg High School | 4.93 | | Saugus High School | 4.92 | | Wahconah Regional High School | 4.55 | | Whitman-Hanson Regional High School | 3.85 | | Gardner High School | 3.57 | | Pittsfield High School | 3.03 | | Ludlow High School | 2.72 | | David Prouty High School | 2.71 | | Auburn High School | 2.63 | | Joseph P. Keefe Regional Technical School | 2.49 | | Taconic High School | 2.08 | | Wareham High School | 1.62 | | Bartlett Junior Senior High School | 1.43 | | Bay Path Regional Vocational Technical High School | 1.33 | | Ayer Shirley Regional High School | 1.22 | | Chicopee Comprehensive High School | 1.06 | | Chicopee High School | 1.02 | | Jeremiah E. Burke High School | 0.68 | | Somerville High School | 0.42 | | Excel High School | 0.32 | | Roger L. Putnam Vocational Technical Academy | 0.25 | | New Bedford High School | 0.13 | | Seekonk High School | 0.00 | | Lee Middle and High School | 0.00 | | Blackstone-Millville Regional High School | 0.00 | | Joseph Case High School | 0.00 | | Tri-County Regional Vocational Technical High School | 0.00 | | Pathfinder Regional Vocational Technical High School | 0.00 | | Claremont Academy | -0.22 | | Barnstable High School | -0.37 | | Charlestown High School | -0.52 | | Urban Science Academy | -0.90 | | Millbury Memorial Junior/Senior High School | -1.32 | | Nantucket High School | -1.52 | | Nashoba Valley Technical High School | -2.56 | | Leicester High School | -2.59 | | Oxford High School | -3.33 | | TechBoston Academy | -3.64 | | West Roxbury Academy | -3.64 | | Bourne High School | -5.26 | | Boston Green Academy | -5.42 | | Grafton High School | -8.09 | | Avon Middle-High School | -16.67 | | Carver High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Granby Junior-Senior High School | . | | North Brookfield High School | . | | Sutton Memorial High School | . | |

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| |  |  | | --- | --- | | **English language learners** | | | ***School Name*** | ***Percentage point change*** | | Holyoke High School | 15.12 | | Claremont Academy | 4.99 | | Chicopee Comprehensive High School | 2.86 | | TechBoston Academy | 1.28 | | Jeremiah E. Burke High School | 1.28 | | Charlestown High School | 0.72 | | New Bedford High School | 0.47 | | Excel High School | 0.33 | | Somerville High School | 0.11 | | Joseph P. Keefe Regional Technical School | 0.00 | | Urban Science Academy | 0.00 | | West Roxbury Academy | 0.00 | | Nantucket High School | 0.00 | | Boston Green Academy | 0.00 | | Saugus High School | 0.00 | | Gardner High School | 0.00 | | Barnstable High School | 0.00 | | Fitchburg High School | 0.00 | | Westfield High School | 0.00 | | Chicopee High School | 0.00 | | Roger L. Putnam Vocational Technical Academy | 0.00 | | Bartlett Junior Senior High School | 0.00 | | Pittsfield High School | -2.70 | | Auburn High School | . | | Avon Middle-High School | . | | Ayer Shirley Regional High School | . | | Bay Path Regional Vocational Technical High School | . | | Blackstone-Millville Regional High School | . | | Bourne High School | . | | Carver High School | . | | David Prouty High School | . | | Drury High School | . | | East Bridgewater High School | . | | Franklin County Technical School | . | | Grafton High School | . | | Granby Junior-Senior High School | . | | Joseph Case High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Ludlow High School | . | | Melrose High School | . | | Millbury Memorial Junior/Senior High School | . | | Nashoba Valley Technical High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pathfinder Regional Vocational Technical High School | . | | Seekonk High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Taconic High School | . | | Tantasqua High School | . | | Tri-County Regional Vocational Technical High School | . | | Wahconah Regional High School | . | | Wareham High School | . | | Whitman-Hanson Regional High School | . | |

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| |  |  | | --- | --- | | **Students with disabilities** | | | ***School Name*** | ***Percentage point change*** | | Avon Middle-High School | 6.45 | | Drury High School | 4.11 | | Holyoke High School | 3.47 | | Nashoba Valley Technical High School | 1.83 | | East Bridgewater High School | 1.69 | | Millbury Memorial Junior/Senior High School | 1.45 | | Gardner High School | 1.39 | | Saugus High School | 1.23 | | Wareham High School | 0.92 | | Pittsfield High School | 0.92 | | Ludlow High School | 0.74 | | Excel High School | 0.69 | | Melrose High School | 0.69 | | Westfield High School | 0.64 | | Bay Path Regional Vocational Technical High School | 0.61 | | Somerville High School | 0.52 | | Jeremiah E. Burke High School | 0.46 | | Joseph P. Keefe Regional Technical School | 0.32 | | Tri-County Regional Vocational Technical High School | 0.31 | | New Bedford High School | 0.25 | | Whitman-Hanson Regional High School | 0.19 | | Chicopee Comprehensive High School | 0.00 | | Charlestown High School | 0.00 | | West Roxbury Academy | 0.00 | | Nantucket High School | 0.00 | | Boston Green Academy | 0.00 | | Barnstable High School | 0.00 | | Fitchburg High School | 0.00 | | Chicopee High School | 0.00 | | Roger L. Putnam Vocational Technical Academy | 0.00 | | Joseph Case High School | 0.00 | | Seekonk High School | 0.00 | | Franklin County Technical School | 0.00 | | Grafton High School | 0.00 | | Pathfinder Regional Vocational Technical High School | 0.00 | | Blackstone-Millville Regional High School | 0.00 | | Granby Junior-Senior High School | 0.00 | | North Brookfield High School | 0.00 | | Wahconah Regional High School | 0.00 | | Auburn High School | 0.00 | | Lee Middle and High School | 0.00 | | Leicester High School | 0.00 | | Oxford High School | 0.00 | | Sutton Memorial High School | 0.00 | | Tantasqua High School | 0.00 | | Shepherd Hill Regional High School | 0.00 | | Ayer Shirley Regional High School | -0.09 | | Taconic High School | -0.48 | | TechBoston Academy | -0.75 | | Carver High School | -1.23 | | Claremont Academy | -1.41 | | David Prouty High School | -1.72 | | Bartlett Junior Senior High School | -1.82 | | Bourne High School | -2.06 | | Urban Science Academy | -2.44 | |

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| |  |  | | --- | --- | | **Students who are economically disadvantaged** | | | ***School Name*** | ***Percentage point change*** | | Seekonk High School | 5.82 | | Grafton High School | 3.57 | | Joseph P. Keefe Regional Technical School | 1.31 | | Joseph Case High School | 0.90 | | Nashoba Valley Technical High School | 0.71 | | Franklin County Technical School | 0.00 | | Pathfinder Regional Vocational Technical High School | 0.00 | | Tri-County Regional Vocational Technical High School | -0.04 | | Millbury Memorial Junior/Senior High School | -0.49 | | Blackstone-Millville Regional High School | -1.45 | | TechBoston Academy | -1.96 | | Somerville High School | -2.35 | | David Prouty High School | -2.96 | | West Roxbury Academy | -3.44 | | Ayer Shirley Regional High School | -3.45 | | Carver High School | -5.52 | | Urban Science Academy | -6.60 | | Avon Middle-High School | -8.29 | | Auburn High School | . | | Barnstable High School | . | | Bartlett Junior Senior High School | . | | Bay Path Regional Vocational Technical High School | . | | Boston Green Academy | . | | Bourne High School | . | | Charlestown High School | . | | Chicopee Comprehensive High School | . | | Chicopee High School | . | | Claremont Academy | . | | Drury High School | . | | East Bridgewater High School | . | | Excel High School | . | | Fitchburg High School | . | | Gardner High School | . | | Granby Junior-Senior High School | . | | Holyoke High School | . | | Jeremiah E. Burke High School | . | | Lee Middle and High School | . | | Leicester High School | . | | Ludlow High School | . | | Melrose High School | . | | Nantucket High School | . | | New Bedford High School | . | | North Brookfield High School | . | | Oxford High School | . | | Pittsfield High School | . | | Roger L. Putnam Vocational Technical Academy | . | | Saugus High School | . | | Shepherd Hill Regional High School | . | | Sutton Memorial High School | . | | Taconic High School | . | | Tantasqua High School | . | | Wahconah Regional High School | . | | Wareham High School | . | | Westfield High School | . | | Whitman-Hanson Regional High School | . | |

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#### Appendix B: Assessing changes in Any AP course or AP Science course taking or passing for priority student groups—Scatterplots

This appendix contains scatterplots to assess changes in AP course taking and passing for Any (ELA, Math, or Science) AP course as well as for AP Science for priority student groups.

There is one figure for each of Any (ELA, Math, or Science) AP Course Taking, AP Science Course Taking, Any (ELA, Math, or Science) AP Passing, AP Science Course Passing. Each figure contains panels for 1 year and 3 years after intervention, by four characteristics—School Size, Percentage of priority group, Urban, Suburban, or Rural, and Percent Takers(Passers) Before Intervention.

[Table B.1. School key](#_Table_B.1._School)

[Figure B.1.1. All students, Any (ELA, Math, or Science) AP course taking](#_Figure_B.1.1._All)

[Figure B.1.2. All students, AP Science course taking](#_Figure_B.1.2._All)

[Figure B.2.1. All students, Any (ELA, Math, or Science) AP course passing](#_Figure_B.2.1._All)

[Figure B.2.2. All students, AP Science course passing](#_Figure_B.2.2._All)

[Figure B.3.1. African American / Black students, Any (ELA, Math, or Science) AP course taking](#_Figure_B.3.1._African)

[Figure B.3.2. African American / Black students, AP Science course taking](#_Figure_B.3.2._African)

[Figure B.4.1. African American / Black students, Any (ELA, Math, or Science) AP course passing](#_Figure_B.4.1._African)

[Figure B.4.2. African American / Black students, AP Science course passing](#_Figure_B.4.2._African)

[Figure B.5.1. Hispanic/Latino, Any (ELA, Math, or Science) AP course taking](#_Figure_B.5.1._Hispanic/Latino,)

[Figure B.5.2. Hispanic/Latino, AP Science course taking](#_Figure_B.5.2._Hispanic/Latino,)

[Figure B.6.1. Hispanic/Latino, Any (ELA, Math, or Science) AP course passing](#_Figure_B.6.1._Hispanic/Latino,)

[Figure B.6.2. Hispanic/Latino, AP Science course passing](#_Figure_B.6.2._Hispanic/Latino,)

[Figure B.7.1. English language learners, Any (ELA, Math, or Science) AP course taking](#_Figure_B.7.1._English)

[Figure B.7.2. English language learners, AP Science course taking](#_Figure_B.7.2._English)

[Figure B.8.1. English language learners, Any (ELA, Math, or Science) AP course passing](#_Figure_B.8.1._English)

[Figure B.8.2. English language learners, AP Science course passing](#_Figure_B.8.2._English)

[Figure B.9.1. Students with disabilities, Any (ELA, Math, or Science) AP course taking](#_Figure_B.9.1._Students)

[Figure B.9.2. Students with disabilities, AP Science course taking](#_Figure_B.9.2._Students)

[Figure B.10.1. Students with disabilities, Any (ELA, Math, or Science) AP course passing](#_Figure_B.10.1._Students)

[Figure B.10.2. Students with disabilities, AP Science course passing](#_Figure_B.10.2._Students)

[Figure B.11.1. Students who are economically disadvantaged, Any (ELA, Math, or Science) AP course taking](#_Figure_B.11.1._Students)

[Figure B.11.2. Students who are economically disadvantaged, AP Science course taking](#_Figure_B.11.2._Students)

[Figure B.12.1. Students who are economically disadvantaged, Any (ELA, Math, or Science) AP course passing](#_Figure_B.12.1._Students)

[Figure B.12.2. Students who are economically disadvantaged, AP Science course passing](#_Figure_B.12.2._Students)

#### Table B.1. School key

| **School Name** | **Number ID** | **School Code** |
| --- | --- | --- |
| Auburn High School | 1 | 00170505 |
| Avon Middle-High School | 2 | 00180510 |
| Ayer Shirley Regional High School | 3 | 06160505 |
| Barnstable High School | 4 | 00200505 |
| Bartlett Junior Senior High School | 5 | 03160505 |
| Bay Path Regional Vocational Technical High School | 6 | 08760605 |
| Blackstone-Millville Regional High School | 7 | 06220505 |
| Boston Green Academy | 8 | 04110305 |
| Bourne High School | 9 | 00360505 |
| Carver High School | 10 | 00520405 |
| Charlestown High School | 11 | 00350515 |
| Chicopee Comprehensive High School | 12 | 00610510 |
| Chicopee High School | 13 | 00610505 |
| Claremont Academy | 14 | 03480350 |
| David Prouty High School | 15 | 07670505 |
| Drury High School | 16 | 02090505 |
| East Bridgewater High School | 17 | 00830505 |
| Excel High School | 18 | 00350522 |
| Fitchburg High School | 19 | 00970505 |
| Franklin County Technical School | 20 | 08180605 |
| Gardner High School | 21 | 01030505 |
| Grafton High School | 22 | 01100505 |
| Granby Junior-Senior High School | 23 | 01110505 |
| Holyoke High School | 24 | 01370505 |
| Jeremiah E. Burke High School | 25 | 00350525 |
| Joseph Case High School | 26 | 02920505 |
| Joseph P. Keefe Regional Technical School | 27 | 08290605 |
| Lee Middle and High School | 28 | 01500505 |
| Leicester High School | 29 | 01510505 |
| Ludlow High School | 30 | 01610505 |
| Melrose High School | 31 | 01780505 |
| Millbury Memorial Junior/Senior High School | 32 | 01860505 |
| Nantucket High School | 33 | 01970505 |
| Nashoba Valley Technical High School | 34 | 08520605 |
| New Bedford High School | 35 | 02010505 |
| North Brookfield High School | 36 | 02150505 |
| Oxford High School | 37 | 02260505 |
| **School Name** | **Number ID** | **School Code** |
| Pathfinder Regional Vocational Technical High School | 38 | 08600605 |
| Pittsfield High School | 39 | 02360505 |
| Roger L. Putnam Vocational Technical Academy | 40 | 02810620 |
| Saugus High School | 41 | 02620505 |
| Seekonk High School | 42 | 02650505 |
| Shepherd Hill Regional High School | 43 | 06580505 |
| Somerville High School | 44 | 02740505 |
| Sutton Memorial High School | 45 | 02900510 |
| Taconic High School | 46 | 02360510 |
| Tantasqua High School | 47 | 07700505 |
| TechBoston Academy | 48 | 00350657 |
| Tri-County Regional Vocational Technical High School | 49 | 08780605 |
| Urban Science Academy | 50 | 00350579 |
| Wahconah Regional High School | 51 | 06350505 |
| Wareham High School | 52 | 03100505 |
| West Roxbury Academy | 53 | 00350658 |
| Westfield High School | 54 | 03250505 |
| Whitman-Hanson Regional High School | 55 | 07800505 |

#### Figure B.1.1. All students, Any (ELA, Math, or Science) AP course taking

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| A – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―All Students, by School Size | B – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―All Students, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―All Students, by Urban, Suburban, or Rural | D – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―All Students, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| E – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―All Students, by Percent Takers Before Intervention | F – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―All Students, by Percent Takers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change |

#### Figure B.1.2. All students, AP Science course taking

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| A – Change in Percent of AP Science Course Takers―One Year After Intervention―All Students, by School Size | B – Change in Percent of AP Science Course Takers―Three Years After Intervention―All Students, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of AP Science Course Takers―One Year After Intervention―All Students, by Urban, Suburban, or Rural | D – Change in Percent of AP Science Course Takers―Three Years After Intervention―All Students, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| E – Change in Percent of AP Science Course Takers―One Year After Intervention―All Students, by Percent Takers Before Intervention | F – Change in Percent of AP Science Course Takers―Three Years After Intervention―All Students, by Percent Takers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change |

#### Figure B.2.1. All students, Any (ELA, Math, or Science) AP course passing

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| A – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―All Students, by School Size | B – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―All Students, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |
| C – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―All Students, by Urban, Suburban, or Rural | D – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―All Students, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| E – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―All Students, by Percent Passers Before Intervention | F – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―All Students, by Percent Passers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change |

#### Figure B.2.2. All students, AP Science course passing

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| A – Change in Percent of AP Science Course Passers―One Year After Intervention―All Students, by School Size | B – Change in Percent of AP Science Course Passers―Three Years After Intervention―All Students, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―All Students, by Urban, Suburban, or Rural | D – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―All Students, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| E – Change in Percent of AP Science Course Passers―One Year After Intervention―All Students, by Percent Passers Before Intervention | F – Change in Percent of AP Science Course Passers―Three Years After Intervention―All Students, by Percent Passers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change |

#### Figure B.3.1. African American / Black students, Any (ELA, Math, or Science) AP course taking

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| A – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―African American / Black, by School Size | B – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―African American / Black, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―African American / Black, by Percentage African American / Black | D – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―African American / Black, by Percentage African American / Black |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change |

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| E – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―African American / Black, by Urban, Suburban, or Rural | F – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―African American / Black, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―African American / Black, by Percent Takers Before Intervention | H – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―African American / Black, by Percent Takers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change |

#### Figure B.3.2. African American / Black students, AP Science course taking

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| --- | --- |
| A – Change in Percent of AP Science Course Takers―One Year After Intervention―African American / Black, by School Size | B – Change in Percent of AP Science Course Takers―Three Years After Intervention―African American / Black, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of AP Science Course Takers―One Year After Intervention―African American / Black, by Percentage African American / Black | D – Change in Percent of AP Science Course Takers―Three Years After Intervention―African American / Black, by Percentage African American / Black |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change |

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| E – Change in Percent of AP Science Course Takers―One Year After Intervention―African American / Black, by Urban, Suburban, or Rural | F – Change in Percent of AP Science Course Takers―Three Years After Intervention―African American / Black, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of AP Science Course Takers―One Year After Intervention―African American / Black, by Percent Takers Before Intervention | H – Change in Percent of AP Science Course Takers―Three Years After Intervention―African American / Black, by Percent Takers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change |

#### Figure B.4.1. African American / Black students, Any (ELA, Math, or Science) AP course passing

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| A – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―African American / Black, by School Size | | B – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―African American / Black, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |
| C – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―African American / Black, by Percentage African American / Black | D – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―African American / Black, by Percentage African American / Black | |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | |

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| E – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―African American / Black, by Urban, Suburban, or Rural | F – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―African American / Black, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―African American / Black, by Percent Passers Before Intervention | H – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―African American / Black, by Percent Passers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change |

#### Figure B.4.2. African American / Black students, AP Science course passing

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| A – Change in Percent of AP Science Course Passers―One Year After Intervention―African American / Black, by School Size | | B – Change in Percent of AP Science Course Passers―Three Years After Intervention―African American / Black, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |
| C – Change in Percent of AP Science Course Passers―One Year After Intervention―African American / Black, by Percentage African American / Black | D – Change in Percent of AP Science Course Passers―Three Years After Intervention―African American / Black, by Percentage African American / Black | |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | |

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| E – Change in Percent of AP Science Course Passers―One Year After Intervention―African American / Black, by Urban, Suburban, or Rural | F – Change in Percent of AP Science Course Passers―Three Years After Intervention―African American / Black, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of AP Science Course Passers―One Year After Intervention―African American / Black, by Percent Passers Before Intervention | H – Change in Percent of AP Science Course Passers―Three Years After Intervention―African American / Black, by Percent Passers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change |

#### Figure B.5.1. Hispanic/Latino, Any (ELA, Math, or Science) AP course taking

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| A – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―Hispanic/Latino, by School Size | B – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―Hispanic/Latino, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―Hispanic/Latino, by Percentage Hispanic/Latino | D – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―Hispanic/Latino, by Percentage Hispanic/Latino |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change |

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| E – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―Hispanic/Latino, by Urban, Suburban, or Rural | F – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―Hispanic/Latino, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―Hispanic/Latino, by Percent Takers Before Intervention | H – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―Hispanic/Latino, by Percent Takers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change |

#### Figure B.5.2. Hispanic/Latino, AP Science course taking

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| A – Change in Percent of AP Science Course Takers―One Year After Intervention―Hispanic/Latino, by School Size | B – Change in Percent of AP Science Course Takers―Three Years After Intervention―Hispanic/Latino, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of AP Science Course Takers―One Year After Intervention―Hispanic/Latino, by Percentage Hispanic/Latino | D – Change in Percent of AP Science Course Takers―Three Years After Intervention―Hispanic/Latino, by Percentage Hispanic/Latino |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change |

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| E – Change in Percent of AP Science Course Takers―One Year After Intervention―Hispanic/Latino, by Urban, Suburban, or Rural | F – Change in Percent of AP Science Course Takers―Three Years After Intervention―Hispanic/Latino, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of AP Science Course Takers―One Year After Intervention―Hispanic/Latino, by Percent Takers Before Intervention | H – Change in Percent of AP Science Course Takers―Three Years After Intervention―Hispanic/Latino, by Percent Takers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change |

#### Figure B.6.1. Hispanic/Latino, Any (ELA, Math, or Science) AP course passing

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| A – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―Hispanic/Latino, by School Size | B – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―Hispanic/Latino, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―Hispanic/Latino, by Percentage Hispanic/Latino | D – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―Hispanic/Latino, by Percentage Hispanic/Latino |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change |

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| E – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―Hispanic/Latino, by Urban, Suburban, or Rural | F – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―Hispanic/Latino, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―Hispanic/Latino, by Percent Passers Before Intervention | H – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―Hispanic/Latino, by Percent Passers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change |

#### Figure B.6.2. Hispanic/Latino, AP Science course passing

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| A – Change in Percent of AP Science Course Passers―One Year After Intervention―Hispanic/Latino, by School Size | B – Change in Percent of AP Science Course Passers―Three Years After Intervention―Hispanic/Latino, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of AP Science Course Passers―One Year After Intervention―Hispanic/Latino, by Percentage Hispanic/Latino | D – Change in Percent of AP Science Course Passers―Three Years After Intervention―Hispanic/Latino, by Percentage Hispanic/Latino |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change |

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| E – Change in Percent of AP Science Course Passers―One Year After Intervention―Hispanic/Latino, by Urban, Suburban, or Rural | F – Change in Percent of AP Science Course Passers―Three Years After Intervention―Hispanic/Latino, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of AP Science Course Passers―One Year After Intervention―Hispanic/Latino, by Percent Passers Before Intervention | H – Change in Percent of AP Science Course Passers―Three Years After Intervention―Hispanic/Latino, by Percent Passers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change |

#### Figure B.7.1. English language learners, Any (ELA, Math, or Science) AP course taking

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| A – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―English Language Learners, by School Size | B – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―English Language Learners, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―English Language Learners, by Percentage English Language Learners | D – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―English Language Learners, by Percentage English Language Learners |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change |

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| E – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―English Language Learners, by Urban, Suburban, or Rural | F – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―English Language Learners, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―English Language Learners, by Percent Takers Before Intervention | H – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―English Language Learners, by Percent Takers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change |

#### Figure B.7.2. English language learners, AP Science course taking

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| A – Change in Percent of AP Science Course Takers―One Year After Intervention―English Language Learners, by School Size | B – Change in Percent of AP Science Course Takers―Three Years After Intervention―English Language Learners, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of AP Science Course Takers―One Year After Intervention―English Language Learners, by Percentage English Language Learners | D – Change in Percent of AP Science Course Takers―Three Years After Intervention―English Language Learners, by Percentage English Language Learners |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change |

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| E – Change in Percent of AP Science Course Takers―One Year After Intervention―English Language Learners, by Urban, Suburban, or Rural | F – Change in Percent of AP Science Course Takers―Three Years After Intervention―English Language Learners, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of AP Science Course Takers―One Year After Intervention―English Language Learners, by Percent Takers Before Intervention | H – Change in Percent of AP Science Course Takers―Three Years After Intervention―English Language Learners, by Percent Takers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change |

#### Figure B.8.1. English language learners, Any (ELA, Math, or Science) AP course passing

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| A – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―English Language Learners, by School Size | B – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―English Language Learners, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―English Language Learners, by Percentage English Language Learners | D – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―English Language Learners, by Percentage English Language Learners |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change |

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| E – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―English Language Learners, by Urban, Suburban, or Rural | F – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―English Language Learners, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―English Language Learners, by Percent Passers Before Intervention | H – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―English Language Learners, by Percent Passers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change |

#### Figure B.8.2. English language learners, AP Science course passing

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| A – Change in Percent of AP Science Course Passers―One Year After Intervention―English Language Learners, by School Size | B – Change in Percent of AP Science Course Passers―Three Years After Intervention―English Language Learners, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of AP Science Course Passers―One Year After Intervention―English Language Learners, by Percentage English Language Learners | D – Change in Percent of AP Science Course Passers―Three Years After Intervention―English Language Learners, by Percentage English Language Learners |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change |

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| E – Change in Percent of AP Science Course Passers―One Year After Intervention―English Language Learners, by Urban, Suburban, or Rural | F – Change in Percent of AP Science Course Passers―Three Years After Intervention―English Language Learners, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of AP Science Course Passers―One Year After Intervention―English Language Learners, by Percent Passers Before Intervention | H – Change in Percent of AP Science Course Passers―One Year After Intervention―English Language Learners, by Percent Passers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change |

#### Figure B.9.1. Students with disabilities, Any (ELA, Math, or Science) AP course taking

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| A – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―Students with Disabilities, by School Size | B – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―Students with Disabilities, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of Any ELA, Math, or Science) AP Course Takers―One Year After Intervention―Students with Disabilities, by Percentage Students with Disabilities | D – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―Students with Disabilities, by Percentage Students with Disabilities |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change |

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| E – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―Students with Disabilities, by Urban, Suburban, or Rural | F – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―Students with Disabilities, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―Students with Disabilities, by Percent Takers Before Intervention | H – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―Students with Disabilities, by Percent Takers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change |

#### Figure B.9.2. Students with disabilities, AP Science course taking

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| A – Change in Percent of AP Science Course Takers―One Year After Intervention―Students with Disabilities, by School Size | B – Change in Percent of AP Science Course Takers―Three Years After Intervention―Students with Disabilities, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of AP Science Course Takers―One Year After Intervention―Students with Disabilities, by Percentage Students with Disabilities | D – Change in Percent of AP Science Course Takers―Three Years After Intervention―Students with Disabilities, by Percentage Students with Disabilities |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change |

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| E – Change in Percent of AP Science Course Takers―One Year After Intervention―Students with Disabilities, by Urban, Suburban, or Rural | F – Change in Percent of AP Science Course Takers―Three Years After Intervention―Students with Disabilities, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of AP Science Course Takers―One Year After Intervention―Students with Disabilities, by Percent Takers Before Intervention | H – Change in Percent of AP Science Course Takers―Three Years After Intervention―Students with Disabilities, by Percent Takers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change |

#### Figure B.10.1. Students with disabilities, Any (ELA, Math, or Science) AP course passing

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| A – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―Students with Disabilities, by School Size | B – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―Students with Disabilities, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―Students with Disabilities, by Percentage Students with Disabilities | D – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―Students with Disabilities, by Percentage Students with Disabilities |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change |

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| E – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―Students with Disabilities, by Urban, Suburban, or Rural | F – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―Students with Disabilities, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―Students with Disabilities, by Percent Passers Before Intervention | H – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―Students with Disabilities, by Percent Passers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change |

#### Figure B.10.2. Students with disabilities, AP Science course passing

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| A – Change in Percent of AP Science Course Passers―One Year After Intervention―Students with Disabilities, by School Size | B – Change in Percent of AP Science Course Passers―Three Years After Intervention―Students with Disabilities, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―Students with Disabilities, by Percentage Students with Disabilities | D – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―Students with Disabilities, by Percentage Students with Disabilities |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change |

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| E – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―Students with Disabilities, by Urban, Suburban, or Rural | F – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―Students with Disabilities, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―Students with Disabilities, by Percent Passers Before Intervention | H – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―Students with Disabilities, by Percent Passers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change |

#### Figure B.11.1. Students who are economically disadvantaged, Any (ELA, Math, or Science) AP course taking

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| A – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―ECODIS, by School Size | B – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―ECODIS, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―ECODIS, by Percentage ECODIS | D – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―ECODIS, by Percentage ECODIS |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change |

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| E – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―ECODIS, by Urban, Suburban, or Rural | F – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―ECODIS, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―One Year After Intervention―ECODIS, by Percent Takers Before Intervention | H – Change in Percent of Any (ELA, Math, or Science) AP Course Takers―Three Years After Intervention―ECODIS, by Percent Takers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change |

#### Figure B.11.2. Students who are economically disadvantaged, AP Science course taking

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| --- | --- |
| A – Change in Percent of AP Science Course Takers―One Year After Intervention―ECODIS, by School Size | B – Change in Percent of AP Science Course Takers―Three Years After Intervention―ECODIS, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of AP Science Course Takers―One Year After Intervention―ECODIS, by Percentage ECODIS | D – Change in Percent of AP Science Course Takers―Three Years After Intervention―ECODIS, by Percentage ECODIS |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change |

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| E – Change in Percent of AP Science Course Takers―One Year After Intervention―ECODIS, by Urban, Suburban, or Rural | F – Change in Percent of AP Science Course Takers―Three Years After Intervention―ECODIS, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of AP Science Course Takers―One Year After Intervention―ECODIS, by Percent Takers Before Intervention | H – Change in Percent of AP Science Course Takers―Three Years After Intervention―ECODIS, by Percent Takers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent takers before intervention on x-axis.  Percentage point change |

#### Figure B.12.1. Students who are economically disadvantaged, Any (ELA, Math, or Science) AP course passing

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| A – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―ECODIS, by School Size | B – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―ECODIS, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―ECODIS, by Percentage ECODIS | D – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―ECODIS, by Percentage ECODIS |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change |

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| E – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―ECODIS, by Urban, Suburban, or Rural | F – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―ECODIS, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―One Year After Intervention―ECODIS, by Percent Passers Before Intervention | H – Change in Percent of Any (ELA, Math, or Science) AP Course Passers―Three Years After Intervention―ECODIS, by Percent Passers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change |

#### Figure B.12.2. Students who are economically disadvantaged, AP Science course passing

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| A – Change in Percent of AP Science Course Passers―One Year After Intervention―ECODIS, by School Size | B – Change in Percent of AP Science Course Passers―Three Years After Intervention―ECODIS, by School Size |
| Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and school size on x-axis.  Percentage point change |

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| C – Change in Percent of AP Science Course Passers―One Year After Intervention―ECODIS, by Percentage ECODIS | D – Change in Percent of AP Science Course Passers―Three Years After Intervention―ECODIS, by Percentage ECODIS |
| Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change | Scatterplot showing percentage point change on y-axis and percent of students who are in the student group of interest  Percentage point change |

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| E – Change in Percent of AP Science Course Passers―One Year After Intervention―ECODIS, by Urban, Suburban, or Rural | F – Change in Percent of AP Science Course Passers―Three Years After Intervention―ECODIS, by Urban, Suburban, or Rural |
| Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and urban, suburban, or rural designation on x-axis.  Percentage point change |

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| G – Change in Percent of AP Science Course Passers―One Year After Intervention―ECODIS, by Percent Passers Before Intervention | H – Change in Percent of AP Science Course Passers―Three Years After Intervention―ECODIS, by Percent Passers Before Intervention |
| Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change | Scatterplot showing percentage point change on y-axis and percent passers before intervention on x-axis.  Percentage point change |

1. Program goals 1 and 2, as stated in the logic model, specify both AP STEM and English courses and exams. The current evaluation focuses only on AP STEM and English courses. [↑](#footnote-ref-1)
2. Analysis summarized in the Year 8 report were subject to limitations and results should be interpreted with caution. Please see the Year 8 report for further details. [↑](#footnote-ref-2)
3. Year 8 key findings have been reordered to prioritize those most relevant to the current research questions, with a focus on historically marginalized students. [↑](#footnote-ref-3)
4. Taking (or passing) one ELA, math, or science AP course was counted as taking (or passing) one AP course. [↑](#footnote-ref-4)
5. Increasing participation and performance in English Laguage Arts (ELA) AP courses and AP exams is not a stated goal of the project. However, increasing participation and performance in ELA AP courses and exams is frequently reflected as a goal of the program in practice. [↑](#footnote-ref-5)
6. The Year 8 evaluation resulted in a total of five reports addressing AP course availability, AP course taking and passing (descriptive and analysis), and AP exam taking and passing (descriptive and analysis). [↑](#footnote-ref-6)
7. For this report, analysis was restricted to only AP course taking and passing. [↑](#footnote-ref-7)
8. Data from the 2019–20 school year were not included because the necessary data was not available. [↑](#footnote-ref-8)
9. To be considered a course passer, a student must have (1) completed the course, (2) earned credit, and (3) received a passing letter or numeric grade within the course. [↑](#footnote-ref-9)
10. AP course passing rates are calculated based on the number of students enrolled in the school rather than the number of students enrolled in the AP course, since the objective of the analysis was to determine if the *overall rate of AP course passing* had changed more at participating schools than at similar non-participating schools, and not to determine if the *rate of passing among course takers* had changed more at participating schools than at similar non-participating schools. [↑](#footnote-ref-10)
11. <https://nces.ed.gov/programs/maped/LocaleLookup/> [↑](#footnote-ref-11)
12. For reporting student demographic information, a minimum N of 6 students is required by DESE. See DESE (2020, November). *Researcher’s guide to Massachusetts state education data*, Office of Planning and Research, <https://www.doe.mass.edu/research/researchers-guide.docx>, p. 13. [↑](#footnote-ref-12)
13. Similar results can be seen in Figure 3, with percentage point changes calculated three years after starting intervention. [↑](#footnote-ref-13)
14. Percentage point change values of less than one percentage point have been considered close to zero for the purposes of this descriptive analyses. [↑](#footnote-ref-14)
15. Avon Middle-High, Melrose High, Boston Green Academy, Claremont Academy, and Grafton High [↑](#footnote-ref-15)
16. Urban Science Academy, West Roxbury Academy, Whitman-Hansen Regional High School [↑](#footnote-ref-16)
17. Somerville High and Urban Science Academy [↑](#footnote-ref-17)
18. Grafton High [↑](#footnote-ref-18)
19. Avon Middle-High, Ayer Shirley Regional High, Chicopee Comprehensive High, Holyoke High, Nashoba Valley Technical High, Taconic High [↑](#footnote-ref-19)
20. David Prouty High, Grafton High School, Leicester High, TechBoston Academy, West Roxbury Academy [↑](#footnote-ref-20)
21. Boston Green Academy, Claremont Academy [↑](#footnote-ref-21)
22. Eight scatterplots were not completed for the “all students” student group and student group size relative to school size. [↑](#footnote-ref-22)