# District Analysis and Review Tools (DART)

# User Guide for
# DART for District and DART for School

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## Table of Contents

# Introduction

The Department of Elementary and Secondary Education provides a framework for both accountability and assistance for the 400 districts in the Commonwealth of Massachusetts. As part of that system, the Department seeks to make the data it receives from districts available to policymakers, parents, the public and the Department to use in assessing effectiveness and monitoring improvement in teaching and learning. From the vast amount of data available, reports offering comparisons and trends for a limited number of indicators can be a good starting point for self-assessment, inquiry, or district and school review. The Department has been developing a suite of tools called the District Analysis and Review Tools (DART) to provide such reports.

DARTs provide a snapshot of school and district trends in various kinds of data and allow users to:
- Look at trends over several years
- View school and district data in charts that are easy to interpret
- Evaluate and reflect on districts and schools and their progress
- Find comparable districts and schools based on demographic characteristics
- Make comparisons with a similar district(s) that has shown promising trends.

**DART for Districts** and **DART for Schools** provide data and trends charts on a wide range of indicators suggested by a number of stakeholder groups around the state. Taken together, these indicators offer a snapshot of a district's overall effectiveness across key areas including  curriculum and instruction, leadership and governance, human resources, professional development, student support, and finance and asset management.

**DART Detail** tools support targeted inquiries in specific areas.
- *DART Detail: Staffing and Finance* provides reports on finance and staffing data with trends and district comparisons. They include some data that has not previously been publicly available.
- *DART Detail: English Language Learners* provides detailed information on English language learners in districts and their schools, including some data that has not previously been publicly available.

# Overview of DART Tools

DART tools are Excel files on the Department's website at http://www.doe.mass.edu/apa/dart/ (see below for detailed instructions on downloading and using them.)

**DART Tools**

| DART Tool | Data included | Comparisons | Years |
|---|---|---|---|
| *DART for Districts* | Selected indicators on curriculum and instruction, leadership and governance, human resources, professional development, student support, and finance and asset management<br><br>Included: all districts | Compare two districts and the state | 5 years |
| *DART for Schools* | Selected indicators on curriculum and instruction, leadership and governance, human resources, professional development, student support<br><br>Included: all schools and single school districts | Compare two schools and the state | 5 years |
| *DART Detail: Staffing and Finance* | Overview reports—enrollment, performance, staff and finance highlights | One district<br>Compare eight districts | 5 years<br>1 year |
| | Staffing FTEs and student/staff ratios by category for all staff, by program area and by subject for teachers, by category for special education | Compare four districts and the state | 3 years |
| | Finance data for per pupil expenditures, dollar expenditures, state aid, out-of-district, revolving funds, Chapter 70 program, tax levies<br><br>Included: municipal and regional districts* | One district<br>Compare four districts and the state | 5 years<br>3 years |
| *DART Detail: Success After High School* | Selected indicators on high school indicators, high school performance, programs of study, postsecondary education outcomes, and career development education.<br><br>Included: all schools containing grades 9 to 12 | Compare two schools and the state | 5 years |
| *DART Detail: English Language Learners* | Selected indicators specific to English language learner students and programming, including enrollment and demographics, curriculum and assessment, English language proficiency (MEPA), staffing, and federal grants.<br><br>Included: all districts, including single school districts | Compare ten districts and the state, and all schools in one | Most recent 5 years |

*\* Because comparable financial data is not available for charter schools, this DART does not include these districts, and the DART state-wide finance comparisons do not include charter data.*

# How to access DART in School/District Profiles

## Step 1: School/District Profiles

Go to http://profiles.doe.mass.edu to access School/District Profiles
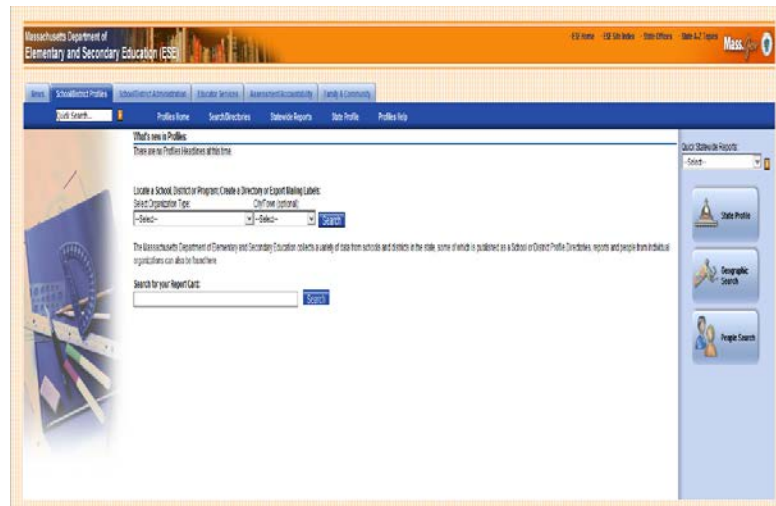


## Step 2: Select your organization

1) Click on the 'Select Organization Type' for a list of organization type
2) Select 'Public School District' or 'Public School'
3) Click the 'Search' button
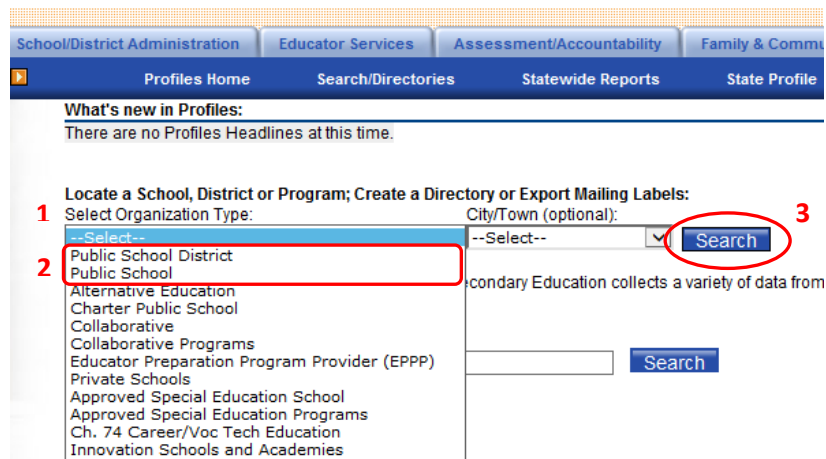
## Step 3:  Search for your organization
Click the link of your organization



## Step 4:  Go to *Analysis – DART* tab
1) You will be directed to the 'General' information tab.
2) Click on the *Analysis – DART* to access DART overview page.
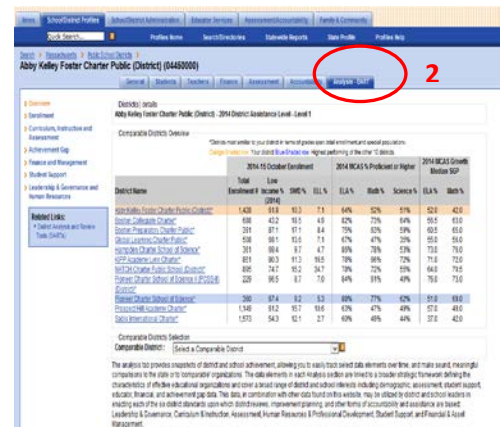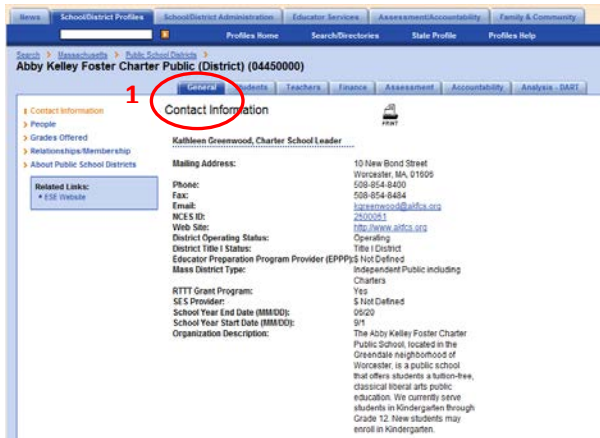
## Navigating *Analysis - DART*

You can access various reports by clicking on the link located in the left panel. The orange link indicates the selected report.
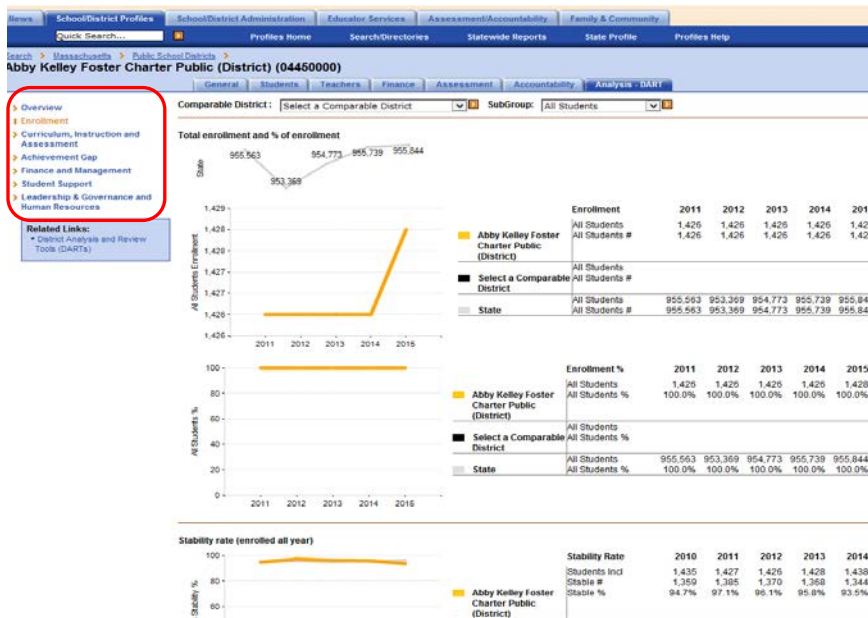


## Selecting a comparable district or school

### Option 1

Click on a 'Comparable District' listed in the overview table. You will be directed to the Enrollment page.
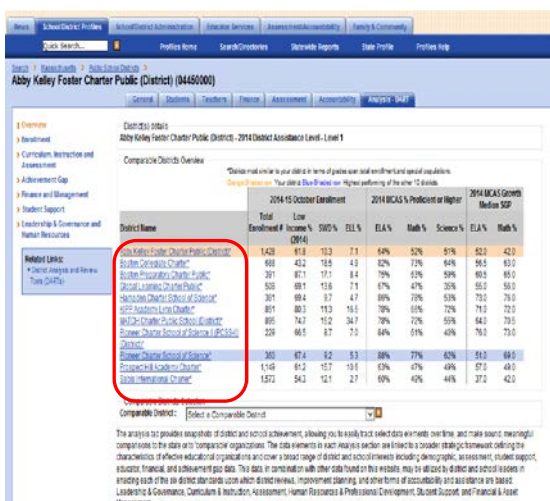


### Option 2

1. Click on the 'Comparable District' drop down for a list of district.
2. Click on the orange arrow to populate data for the comparable district.
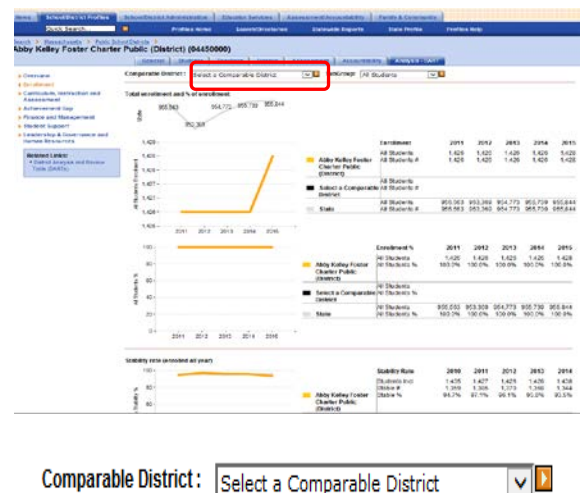
DART reports are designed to be as clear as possible. When charts are provided, the selected district is represented by an orange line, the Commonwealth by a gray line, and a comparable district by a dark charcoal line.
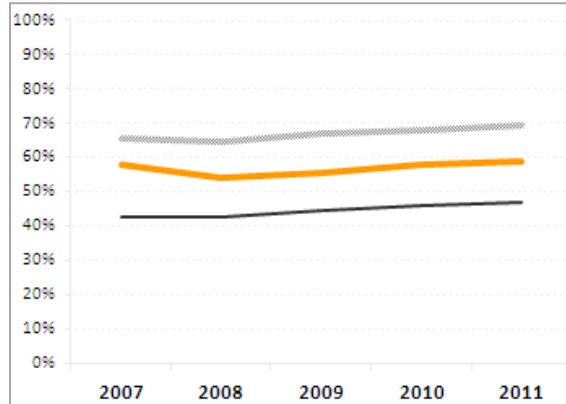


## Use the RSS Feed for Updates

You can sign up for notification of DART updates by subscribing to our RSS feed. On the DART home page there is an RSS icon just above the title bar. Click on the icon, then select the DART RSS feed from the list. When you click on it, you will be invited to subscribe.

# Comparing Similar Districts and Schools

While districts often compare themselves to neighbors, it may be useful to see whether similar districts or schools are struggling or succeeding in a variety of areas—districts from around the state may be relevant. When the user selects a district, DART tools generate a list of ten comparable districts based on enrollment characteristics. Districts are compared within their grade-span group (K-12, elementary, secondary, vocational-technical/agricultural.) You are not limited to these districts in selecting a comparison district.

An internal ESE study showed that the percentage of low income students enrolled was by far the strongest predictor of district and school performance, and this variable is weighted strongly in the algorithm of the comparison model. The other four variables included in the algorithm are total enrollment (size), percentage of English Language Learner students enrolled, percentage of special education students enrolled, and district or school type (e.g., elementary school, middle school.)

**District Comparison Methodology Details**

Update:  Because of the recent change to the low income collection, we used the 2013-14 low income data in the comparison methodology.

To build the components of the comparison methodology, all districts in the Commonwealth are assigned percentile ranks (1 to 99) for total enrollment, percentage of low income students, percentage of ELL students, and percentage of students with disabilities. Higher percentile ranks (closer to 99) indicate that the district enrolls more students or higher percentages of low income students, ELL students, or students with disabilities relative to districts with lower percentiles (closer to 1).

Districts are also categorized by district type: elementary, high school, or K–12. In order to simplify the definition of district types, districts that serve elementary and middle school grades are classified as elementary districts, and districts that serve middle and high school grades are classified as high school districts.

The comparison methodology matches districts by district type and minimizes the total absolute difference in enrollment, low income, ELL, and students with disabilities percentiles from the selected district. The formula sums the absolute differences between percentiles from the selected district and identifies the 10 districts with the smallest total differences. To reflect the strong correlation of low income status with district performance, minimizing low income differences is weighted more than minimizing differences in enrollment, ELL, or students with disabilities.

Each district has a fixed comparison group in any given year, but the next year's enrollment data may generate a slightly different group. Among districts, comparison groups are not static; districts comparable to your selected district will have their own comparison groups that may not completely overlap.

**School Comparison Methodology Details**

Update:  Because of the recent change to the low income collection, we used the 2013-14 low income data in the comparison methodology.

The school comparison methodology works the same way as the district one. To build the components of the comparison methodology, all operating schools are assigned percentile ranks (1 to 99) for total

enrollment, percentage of low income students, percentage of ELL students, and percentage of students with disabilities. Higher percentile ranks (closer to 99) indicate that the district enrolls more students or higher percentages of low income students, ELL students, or students with disabilities relative to districts with lower percentiles (closer to 1).

Schools are also categorized by type: early elementary, elementary, elementary middle, middle, middle high, and high schools; vocational schools; and alternative and public day schools. This is the same school categorization method that is used by ESE's data reporting unit.

The comparison methodology matches schools by type and minimizes the total absolute difference in enrollment, low income, ELL, and students with disabilities percentiles from the selected school. The formula sums the absolute differences between percentiles from the selected school and identifies the 10 schools with the smallest total differences. To reflect the strong correlation of low income status with district performance, minimizing low income differences is weighted more than minimizing differences in enrollment, ELL, or students with disabilities.

Like the district comparison, each school has a fixed comparison group in any given year, but the next year's enrollment data may generate a slightly different group. Among schools, comparison groups are not static; schools comparable to your selected school will have their own comparison groups that may not completely overlap.

**Wealth-based Comparison Methodology**

Finance analysts sometimes select comparison districts using a tool provided by ESE's School Finance Office. Its methodology uses enrollment and wealth measures (property valuation and household income) to select comparable districts. The most current wealth comparison tool available is in the 2008 per pupil expenditures file, and a link to this file is provided on the Home page of the *Staffing and Finance* DART.

# Considerations in Using DART Data

**Remember: DARTs are a snapshot.**

The DARTs provide a gauge of the overall condition of a district or school, but do not have all available information. They should be treated as a good starting point for exploring the data and identifying areas of focus for further inquiry. The ESE website, especially School and District Profiles, provides additional detail and should be referenced for deeper analysis. Local data is a powerful addition tool for inquiry.

DART charts, when available, allow visual comparisons between local and state trends, but observed differences may not be statistically or educationally meaningful. For instance, annual change of about 2.5 points in CPI is potentially meaningful, but 10 SGP percentile points meets the same threshold. Users are cautioned to view the data provided in DARTs as a starting point for further investigation of relative differences and data outliers.

**DART files do not automatically update.**

About three times a year, new data become available and the DART excel files are updated and posted to the website. This means that files previously downloaded to local computers may not be current; they will *not* automatically update. Check the website periodically and download the newest files.

**Considerations for Data Analysis**

Districts put great effort into providing a lot of data to the Department, which is used for district self-assessment, Department reviews, legislative and grants reporting, public posting, and research. The data supports analysis and decision-making, but it is not perfect. Some healthy skepticism is appropriate when, for instance, there is a real outlier in the data. The data collection process is subject to difficulties of several kinds, including simple keying errors. Other factors that affect data include:

- Without being in error, district staff may interpret the Department's codes differently, so comparison at the detail level may make less sense than comparison at the subtotal level.

- When the Department requires a new data collection (e.g., EPIMS, course schedules), data is more inconsistent for the first year or two.

- Department coding is not perfectly aligned across different areas (e.g., staffing and finance.)

Ultimately, if data raises questions relevant to a decision-making process it is wise to follow up with other districts directly or to contact the Department for further information.

# Contents of the DART (for Districts or Schools)

Stakeholder groups from around the Commonwealth were asked which data elements were most indicative of success. The current list of indicators that comprise the DART is a product of those important discussions and efforts. The stakeholders pointed to an array of high impact data elements from a wide variety of sources that touch upon many of the challenges that face Massachusetts school districts.

The data elements cover a broad range of district and school information including demographics, assessment data, post-secondary data, educator data, and financial data. The data indicators, which are linked to a broader strategic framework defining the characteristics of effective districts, demonstrate trends in district performance and feed into public reporting, district self-improvement, and the district accountability system. The data elements align with the ESE District Standards which include 1) leadership and governance, 2) curriculum and instruction, 3) assessment, 4) human resources and professional development, 5) student support, and 6) financial and asset management. These standards were created based on the premise that school effectiveness depends upon effective district systems of support.[1] Therefore, for each standard there exists a list of indicators that exemplify ways in which districts can support and promote excellence in schools. The DART is one tool that may be used to support the self-evaluation process for whole districts as well as individual schools, as it contains a powerful set of data elements that, taken as a whole, provide an indication of the overall condition of a district or school.

The following section includes brief descriptions of each indicator as well as important considerations for examining the data. Note that some descriptive information is summarized from the Massachusetts Department of Elementary and Secondary Education website, and users should refer to the website links listed in the footnotes for further information.

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[1] Regional Educational Laboratory for the Northeast & Islands: REL-NEI. (2009). *District and state supports to improve student and school achievement* (Unpublished Document). Funded in part by the Institute of Education Sciences, U.S. Department of Education, under contract #ED-06-CO-0025, in response to a request by the Massachusetts Department of Elementary and Secondary Education.

# District or School Context

Users may filter these graphs by the following groups: All Students, Low Income, Students with Disabilities, English Language Learner, First Language Not English (FLNE), African American, Asian, Hispanic/Latino, Multi-Race/Non-Hispanic/Latino, Native American, Native Hawaiian, and White.

## Enrollment (both total number and percentage)
Source: Student Information Management System (SIMS)

The enrollment indicator displays two line graphs. The first line graph and table provide information on the total number of students enrolled in a district or school, while the second line graph and table provide information on the percentage of students enrolled in a selected subgroup. Lines in the upward direction indicate a positive enrollment change; downward lines indicate a negative enrollment change. The state enrollment numbers are provided in a small line graph above to put the district and school enrollment changes into context.

Note that due to the wide variations across the state in terms of enrollment, the scale of the graph will change depending on how large or small the selected districts or schools are.

Sharp rises or drops in enrollment from year to year may suggest shifts in systemic district or school practices and/or myriad other contextual factors (e.g., economic climate impact, immigration trends, etc.).

Due to some districts using a district wide eligibility for free and reduced price lunch, low income will be treated differently starting in 2015. Results are forthcoming.

## Stability rate (enrolled all year)
Source: SIMS

Mobility refers to the rates of students transferring into or out of a school or district. The DART displays the *stability rate,* which answers the question "Of the students who started the year with us, how many stayed the entire school year?" To measure this, we compare the student enrollment in a district or school from the October 1st SIMS data collection, to the student enrollment throughout the full school year, as reported in the March and End of Year SIMS data collections. Specifically, the numerator includes each student who was enrolled in any public school or district in all three SIMS data collections. Each student is counted only once. The denominator includes each student reported as enrolled in a public school in the October 1st SIMS data collection. The final calculation also excludes students who are reported as having less than the standard days in membership, according to their grade level. For more information on mobility, see the mobility page on the ESE website.[2]

The stability rate is useful for general audiences because the measure is intuitive. Of the students who started the year, the stability rate is simply the percentage of students who stayed for the whole year. A limitation, however, is that the district stability rate does not tell you anything about mobility of students from school to school within the district or stability of the student population in the district

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[2] http://www.doe.mass.edu/infoservices/reports/mobility/

from one year to the next.

## Percentage of kindergarten students enrolled in full-day kindergarten
Source: SIMS

The line graph displays the percentage of kindergarten students who attend full-day kindergarten each year. The accompanying table displays total student enrollment in kindergarten classes and the proportion of those children who attend full-day kindergarten programming.

Studies show that full-day kindergarten, as compared to half-day Kindergarten, provides an array of benefits to children in the short- and long-term, including increased school readiness, a trend toward higher academic achievement, higher attendance over time, faster literacy and language development, and other socio-emotional and behavioral benefits[3]. When evaluating this indicator, it is important to consider that implementation of full-day kindergarten programs may be limited due to restricted capacity, physical space, or financial constraints.

## Percentage of school-aged residents enrolled in public school
Source: School Attending Children report

The percentage of school-aged residents enrolled in district public schools is noted in the table and displayed in the line graph. The table also lists the total number of school-aged residents reported by the district as well as the total number of students enrolled in public schools (excluding charter schools in that district) across all grades. Note that this indicator is not displayed for regional districts.

This data element may be an indication of how much demand there is for the public schools in a given municipality. However, many other factors can influence this number, such as geography, residents' ability to afford private schools, etc. This data element is only available for "All Students"

# Curriculum and Instruction; Assessment

Users may filter this graph by any of the tested grades, as well as the following groups: All Students, High Needs, Low Income, Non-Low Income, Students with Disabilities, English Language Learner, African American, Asian, Hispanic, and White.

## Percentage of students scoring proficient or higher in ELA and mathematics
Source: Massachusetts Comprehensive Assessment System (MCAS)

The four MCAS Performance Levels for those taking the standard MCAS are *Warning/Failing*, *Needs Improvement*, *Proficient*, and *Above Proficient/Advanced*.[4]

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[3] WestEd. (2005). *Policy Brief: Full day kindergarten: Expanding learning opportunities.* Funded by the Institute of Education Sciences, U.S. Department of Education, under contract #ED-01-CO-0012.

[4] For the MCAS-Alt, the Performance Levels are *Portfolio Incomplete*, *Awareness*, *Emerging*, and *Progressing*.

The line graph displays the trends in the percentage of students whose MCAS scores reached *Proficient* or above. The element includes all students who took the MCAS or MCAS-Alt Reading test and received a corresponding proficiency level.

MCAS tests are tied to the Massachusetts curriculum frameworks, and thus they provide a good indicator of grade-level attainment in literacy and numeracy. They may be good indicators of the effectiveness of the literacy or numeracy programming in a school or district.

## Median student growth percentiles (SGP) in ELA and mathematics
Source: MCAS

A student growth percentile (SGP) is a measure of student progress that compares changes in a student's MCAS scores to changes in MCAS scores of other students with similar achievement histories. The model establishes cohorts of students with similar performance profiles by identifying all students with the same (or very similar) MCAS scores in prior years. To report student growth at the subgroup, grade, school, or district level, individual student growth percentiles are aggregated, and the median student growth percentile is reported for that group. Student growth percentiles range from 1 to 99, where higher numbers represent relatively higher growth and lower numbers represent relatively lower growth. Because student growth percentiles are normative (they describe how each student changed relative to what was normal), the medians for all districts, schools, and subgroups are centered at 50. Therefore, statewide, as many districts, schools, and subgroups will have median student growth percentiles above 50 as below, and this will be true even if achievement levels rise.[5]

The line graph displays the median SGP in ELA and mathematics for each year of available data starting from the first release in 2008. Also, the table lists the number of students included in this calculation; at least 20 students must be included for a median SGP to be reported.

Student growth percentiles describe how a school or district is changing, regardless of how well that school or district has been achieving. Median SGPs of less than 40 are unusually low, and those 60 and above are unusually high; these should be examined further. When examining year-to-year changes in median SGP, it is important to consider that differences in medians of less than 10 points are not likely to be educationally meaningful. Therefore, a difference of 10 or more median SGPs between years warrants further investigation. Also, SGP information for high schools is only available beginning in 2009 and should be interpreted differently given that it represents student growth from grade 8 to grade 10 (there is no grade 9 test).[6] Finally, SGPs are not available for grade 3, as this is the first year of MCAS test administration.

## Percentage of students averaging 2 or above on open response items
Source: MCAS

Open-response questions are included on all MCAS tests except the ELA Composition and require students to generate, rather than recognize, a response. Students create a one- or two-paragraph response in writing or a chart, table, diagram, illustration, or graph, as appropriate. Students can respond correctly using a variety of strategies and approaches. Responses to open-response questions

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[5] http://www.doe.mass.edu/mcas/growth/StateReport.doc
[6] For more information on the growth model, download the Interpretive Guide at
http://www.doe.mass.edu/mcas/growth/InterpretiveGuide.pdf

are scored using a scoring guide for each question. The [scoring guides] indicate what knowledge and skills students must demonstrate to earn 1, 2, 3, or 4 points.  Answers to open-response questions are not scored for spelling, punctuation, or grammar[7]. Note that grade 3 results are not included in the 'all grades' average because the grade 3 test has only two open response questions, each worth 2 points. Students who took the MCAS alternative assessment were also excluded from the averages.

The line graph and corresponding chart display the percentage students whose open response items on the ELA and mathematics MCAS tests averaged a score of 2 or above.  The chart also shows the exact number students included in this calculation.

The open response portion of the MCAS is an indication of students' information processing, their ability to comprehend a text, and their ability to effectively convey their thoughts through writing. However, since spelling, punctuation, and grammar are not taken into account, it is important to limit any inferences to a student's ability to convey thoughts, not a student's ability to write using all proper techniques and conventions.


## Percentage of students scoring proficient or higher in science
Source: [MCAS]

The four MCAS Performance Levels for those taking the standard MCAS are *Warning/Failing*, *Needs Improvement*, *Proficient*, and *Above Proficient/Advanced*.  Grade 10 Science, Technology/ Engineering (STE) results are reported based on students' best performance on any STE test taken in grade 9 or grade 10; only students continuously enrolled in Massachusetts public schools from fall of grade 9 through spring of grade 10 are included.

The line graph displays the trends in the percentage of students whose MCAS scores reached *Proficient* or above. The element includes all students who took the MCAS or MCAS-Alt Reading test and received a corresponding proficiency level.

MCAS tests are tied to the Massachusetts curriculum frameworks, and thus they provide a good indicator of grade-level attainment in literacy and numeracy. They may be good indicators of the effectiveness of the literacy or numeracy programming in a school or district.


## Percentage of high school graduates who completed MassCore
Source: End of Year [SIMS]

The line graph and chart display the percentage of high school graduates (with a Competency Determination) who successfully completed the Massachusetts Core Curriculum[8]. The recommended program of studies includes: four years of English, four years of Math, three years of a lab-based Science, three years of history, two years of the same foreign language, one year of an arts program and five additional "core" courses such as business education, health, and/or technology. MassCore also includes additional learning opportunities including AP classes, dual enrollment, a senior project, online courses for high school or college credit, and service or work-based learning.

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[7]http://www.doe.mass.edu/mcas/overview.html?faq=2
[8] For more information on MassCore, see [http://www.doe.mass.edu/hsreform/masscore/](http://www.doe.mass.edu/hsreform/masscore/).

This element is useful in determining whether high school graduates have completed a rigorous course-load so that they are prepared to enroll in credit-bearing coursework in college.

## Percentage of test-takers scoring 3 or above on the Advanced Placement U.S. History exam
Source: College Board

The line graph and table display the percentage of students who scored a 3 or better on the Advanced Placement (AP) U.S. History examination each year. The table includes the exact number of students whose scores fall within this range, as well as the total number of students who took the AP U.S. History examination in the school or district.

In Massachusetts, the AP U.S. History exam is one of the most frequently taken among all AP exams. Students may earn college credit for through qualifying scores (the range is from 1 to 5) on AP examinations (requirements vary by higher education institution). This data element provides an indication of the frequency with which students in a school or district are taking the AP U.S. History exam and what proportion of those students are scoring at higher levels that may earn them college credit in U.S. History.

## Percentage of juniors/seniors enrolled in at least one Advanced Placement (AP) or International Baccalaureate (IB) courses
Source: End of Year SIMS

The line graph and table display the percentage of students in grades 11 and 12 who enrolled in Advanced Placement (AP)[9] or International Baccalaureate (IB) courses.  AP coursework and tests are offered in over 30 different subject areas with a variety of opportunities in different schools.  This element may indicate a district's or school's ability or commitment to provide AP or IB programming for their student population. Note that most AP courses are offered in 11th and 12th grade as opposed to 9th and 10th grade, therefore, if this indicator were to include grades 9 and 10, then percentages would be likely to drop. The drop would be artificial because the offerings are relatively scarce in those grades.

# Curriculum and Instruction; Assessment: Achievement Gaps

The DART allows for this information to be evaluated for nine groups, including all, High Needs, Low Income, Non-Low Income, Students with Disabilities, English Language Learner, African American, Asian, Hispanic, and White in all tested grades.
Source: MCAS

Achievement gaps have been calculated to reflect differences in Composite Performance Index (CPI) scores for ELA, mathematics and science, respectively. *The graph displays the difference between the CPI for the subgroups in the selected district or school and the statewide CPI for that subgroup.* It is important to remember that the graphs compare district subgroups to the state subgroup aggregate, not the state all-students aggregate. For example, if a user selects comparisons to display for the low income subgroups, the lines will display the CPI for the district's low income population and the CPI, in the light gray line, for the *state's* low income population. Visually, the proficiency gap is represented as the shaded area between the district subgroup's line and the state subgroup's line.

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[9] http://apcentral.collegeboard.com/

While achievement gaps are helpful in framing the challenges that districts and schools face, the ultimate goal is to lead all students to proficiency. Closing the gaps between groups is important, but is secondary to the goal of having all students achieve at a proficient level, regardless of their group(s).

This graph may be useful in spotting similar districts or schools that are achieving strong results, and then starting a dialogue with them regarding their practices.

# Leadership and Governance, Human Resources, and Professional Development

## Superintendent retention rate
Source: Education Personnel Information Management System (EPIMS)

The table displays whether the superintendent remained in same position between two school years. In this case, a rate of 100% indicates that the same superintendent remained during two school years, whereas a rate of 0.0% indicates a changeover in district leadership between two school years.

This is a key component of determining leadership stability at the district level over time. This data is available starting in the 2008 school year.

## Principal retention rate
Source: EPIMS

This line graph displays the principal retention rate, or the percentage of school principals who remained in the same position between two school years.

The principal retention rate at the district level displays the percent of principals who remained a principal in the selected district from one year to the next. Therefore, a principal who moved from one school to another within a district is still considered "retained" from the district perspective. From the school perspective, that principal would not be considered "retained."

This element is a key component of determining leadership stability at the school level over time. This data is available starting in the 2008 school year.

## Teacher retention rate
Source: EPIMS

The teacher retention rate at the district level displays the percent of teachers who remained a teacher in the selected district from one year to the next. Therefore, a teacher who moved from one school to another within a district is still considered "retained" from the district perspective. From the school perspective, that teacher would not be considered "retained."

This is a key component of determining workforce stability within a district or school over time. These data are available starting in the 2008 school year.

# Student Support

## Student attendance
Source: SIMS

There are two separate measures of student attendance in this section.  These calculations include both excused and unexcused absences.

One is a measure of student attendance that is the percent of enrolled students that are absent 10 or more days per year (excused and unexcused absences).

The second measure of student attendance is the percent of students who are absent 10% or more of their total number of days that school was in session per year (excused and unexcused absences).  For example:  A student who enrolled in a school for 50 days and missed 5 days, the student is counted as absent 10% or more that year.

The state calculation has been revised to include out-of-district placement students.

Research has shown, when controlling for other factors associated with student performance, students who have higher attendance rates tend to perform better in school[10]. This element may be an indication of the climate in a school or district and could be related to the performance in that school or district.

## Percentage of students suspended out-of-school at least once
Source: End of Year SIMS and School Safety and Discipline Report (SSDR)

The measure displayed in this line graph is the percentage of enrolled students in grades PK to 12 and Special Education students beyond grade 12 who received one or more out-of-school suspensions. Students reported with out-of-school suspensions in SSDR were also included in the calculation. Note that the DART's calculation of this measure is slightly different from the figures displayed on the ESE School and District Profiles site because of two reasons: 1) In the rare instance where there were a greater number of students reported as suspended in SSDR than in SIMS, we assumed that the larger of the two numbers was the correct figure, and 2) Profiles does not include students who were suspended in grades PK and K, whereas we do use those numbers in the DART.

Discipline measures are indications of school climate and environment. However, one major limitation of this indicator lies in the fact that it is focused on the number of students and not the number of incidents or how severe those incidents were. All school suspensions are counted equally, regardless of how severe the infraction. In other words a 9-day suspension and a 1-day suspension are counted equally, because the focus is on the number of students suspended, not the duration of the suspension. Furthermore, because the measure looks at the number of students suspended and not the number of times a student was suspended, students who were suspended multiple times count equally to students who were suspended only once. This indicator is best used in conjunction with the following two discipline indicators, which do include the number of incidents (rather than the number of students).

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[10] Park, K.H., & Kerr, P.M. (1990). Determinants of academic performance: A multinomial logit approach. *Journal of Economic Education, 21,* 101-111; Romer, D. (1993). Do students go to class? Should they? *Journal of Economic Perspectives, 7,* 167-174.

## Annual dropout rate
Source: SIMS

A dropout rate is the frequency that a dropout occurs within a defined population. ESE calculates the annual dropout rate as the number of students who drop out of school over a one-year period, minus the number of returned dropouts, divided by the October 1st grade 9 through 12 enrollment, and multiplied by 100[11].

This element may be indicative of the culture within a school or district, and perhaps the district's or school's ability to intervene with at-risk students.

## 4-year cohort graduation rate
Source: SIMS

The 4-year cohort graduation rate displayed in the line graph reflects the percent of a cohort of students entering grade 9 in the same year who graduated within a four-year (or shorter) span of time, starting from the year in which they entered grade 9. To compare the annual dropout rate and cohort graduation rate calculations, see the ESE website[12].

This element may be indicative of the culture within a school or district, and perhaps the district's or school's ability to intervene with at-risk students.

## 5-year cohort graduation rate
Source: SIMS

The five-year cohort graduation displayed in the line graph reflects the percent of a cohort of students entering grade 9 in the same year who graduated within a five-year span of time, starting from the year in which they entered grade 9. This indicator adds an additional dimension to the four-year cohort graduation rate by combining the number of a cohort of students graduating on time (in four years or less) with the number of the same cohort of students who graduated one year later (i.e., within 5 years of beginning grade 9).

This element may be indicative of the culture within a school or district, and perhaps the district's or school's ability to intervene with at-risk students.

# Financial and Asset Management

## Total per pupil expenditures
Source:  End of Year Pupil and Financial Report

The total expenditures for a district include in-district costs related to administration; instructional leadership; classroom and specialist teaching services; professional development; instructional materials, equipment, and technology; guidance counseling and testing; pupil services; operations and

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[11] http://www.doe.mass.edu/infoservices/reports/dropout/
[12] http://www.doe.mass.edu/infoservices/reports/gradrates/dropoutvsgrad.html

maintenance; insurance and retirement; as well as costs for out-of-district placements. Unlike other metrics, per pupil spending also includes expenditures from all funding sources (Chapter 70 aid, local property taxes, state and federal grants, and all others). The amount of expenditures per pupil is reported in the chart and displayed in the line graph over the last five years.

Per pupil spending is a good metric for comparing district expenditures because it controls for district enrollment. Per pupil expenditures can be an indicator of a district's ability and/or commitment to fund education, but higher per pupil spending does not always translate to higher achievement or growth.

## Average teacher salaries
Source:  ESE Finance – Statistical Comparisons

The graph and table display the average teacher salary in a district for the past five years, based on total teacher salary expenditures and teacher FTEs (not headcount). Some anomalies in average teacher salary may be observed between FY07 and FY08 because ESE changed its method of calculating average teacher salary. ESE now includes the number of teacher FTEs taken directly from the Educational Personnel Information Management System (EPIMS) instead of using teacher data reported by district business officials in their End of Year Financial Report.

When comparing average teacher salaries, note that the average is affected by both a district's salary schedule (how much a teacher with a given level of credentials and experience is paid) and where most teachers are paid within the defined range. When comparing two districts with the same salary schedule, the one with more teachers in higher salary steps and lanes would have a higher average salary[13].

## In-district per pupil transportation cost
Source: End of Year Pupil and Financial Report

This line graph displays the transportation cost per pupil for in-district students over the past five years. The chart also displays the total enrollment and total transportation costs for selected districts.

When drawing conclusions from this indicator, it is important to remember the geography of each district, as well as the access to other forms of transportation (especially in urban areas). It is also worth noting that this calculation does not include transportation costs that a school or district may pay for out-of-district placements.

## Percent spending above / under foundation budget
Source: Chapter 70 District Profiles

The foundation budget is the state's estimate for how much money is needed to provide an adequate education to the students in a given school district. It is calculated using a set of assumptions about how much districts should spend per pupil across expenditure categories and for a variety of student groups, assigning higher rates to students whose resource needs are assumed to be greater, such as students

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[13] Salary schedules can be found in district contracts, located here:
http://educatorcontracts.doemass.org/contents.aspx. Also, data about age cohorts for teachers by district are available on the ESE website at http://profiles.doe.mass.edu/state_report/agestaffing.aspx.

with disabilities, vocational students, English language learners, and low income students. Rates are adjusted for inflation each year.

One way to assess the level of effort that each district is making is to compare its actual net school spending (NSS) to its foundation budget. Actual NSS captures a district's operating expenditures—essentially everything except for transportation and capital costs—which are the same elements that are included in the foundation budget. Actual NSS also separates spending from state aid, otherwise known as Chapter 70 aid, and local property taxes. The line graph shows the percent of actual net school spending *above* foundation over the past five years.

The percentage above foundation budget may indicate a district's ability and/or commitment to fund its schools above the state's estimate for what is adequate. However, the foundation budget only includes funds from state and local sources. Other sources of funding, like federal entitlement grants or private grants, are not included in the foundation budget estimate or in the calculated figure that districts spend.


## Percent actual net school spending above / under required net school spending
Source: Chapter 70 District Profiles

The Commonwealth's school finance statute, Chapter 70 of the Massachusetts General Laws, establishes an annual net school spending (NSS) requirement for each school district. Required NSS equals the sum of a district's Chapter 70 aid and its required local contribution, which is never less than the district's foundation budget. Districts are allowed to spend within 95 percent of their requirement in any given fiscal year, and any unspent portion is added to their requirement the following year. Failure to comply with this requirement may result in non-approval of a municipality's tax rate, enforcement action by the Attorney General, or loss of state aid[14].

When tracking compliance with NSS requirements, ESE reviews each district's actual NSS. The line graph displays the percentage of each district's actual NSS above required NSS over the past five years.

The percentage of actual NSS above required NSS may indicate a district's ability and/or commitment to fund its schools above the state's requirement. Like the foundation budget amount, the required NSS figure only includes funds from Chapter 70 aid and local property taxes. Other sources of funding, like federal entitlement grants or private grants, are not included.

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[14] http://finance1.doe.mass.edu/chapter70/compliance.html