# Selecting Outcome Measures and Setting Targets

## What Are Outcomes?

The Massachusetts Planning and Implementation Framework defines outcomes as the plan’s expected results: what they will be, how they will be measured, and when they will occur. Outcomes are the SMART goals for the district or school: specific and strategic; measurable; ambitious and action-oriented; rigorous, realistic, results-focused; timed and tracked. Outcomes measure the district’s or school’s success in achieving its vision andinclude specific targets for the improvement expected as a result of multi-year plan implementation.

While districts or schools will set both process and early evidence of change benchmarks through the annual action planning process in order to measure progress and impact of initiatives as they are implemented, it is important to set some outcomes that will track the overall impact of the strategy defined by the multi-year district plan.

### Step 1: Identifying Outcome Measures

Outcomes are a natural outgrowth of the district or school vision as defined by the multi-year plan and should be fully aligned with that vision. An effective way to begin conceptualizing outcomes for the plan as a whole is to focus on brainstorming outcomes for each strategic objective. The planning team can work in small groups, each focused on one objective, to address the question: Which outcomes are most meaningful and will best measure results for this objective? The team can then review the outcomes proposed for all objectives and address the question: What combination of outcomes will best measure success in achieving our vision?

*Criteria to Consider When Selecting Outcomes: Public Understanding and District Capacity*

As the planning team develops and reviews proposed outcomes, the team should assess them in light of the following two questions:

* Will these outcomes be clear and accessible to the public?
* Do we commit to developing the capacity to monitor and report on these outcomes?

Since outcomes measure improvement and success, it is imperative that they are framed in a way that helps make them meaningful to and easily understood by the public—and that educational leaders have the capacity to effectively monitor and report on them. The planning team should consider what is realistic and manageable when deciding upon the total number of outcomes for the plan. The team should also consider the data collection needs and requirements of proposed outcomes and evaluate these needs in light of current district or school practices and the steps that might need to be taken to strengthen these practices.

For example, as teams work to identify meaningful outcomes for the new plan and its vision, they may propose outcomes that require the district or school to collect new types of data that it currently does not collect. Or teams may propose outcomes that require the district or school to develop new practices in working with data that is already collected but not consistently monitored. Outcomes such as these require additional planning on the part of district or school leaders to ensure that the necessary data is collected and monitoring processes are in place.

The *“Planning for Success* Outcomes Worksheet,” included below, is a helpful resource for teams to use in developing outcomes and identifying data sources and issues related to these outcomes. This resource is also helpful to teams as they prepare to gather and review historical data in order to set specific targets for outcomes.

### Step 2: Setting Targets

Once the team has identified outcome measures it believes will best measure district or school success in achieving the plan and its vision, the team sets specific targets for these outcomes. Setting targets is a delicate balancing act, as the team strives to strike the right balance between what is achievable and what is ambitious—between what history may reveal and what the district or school aspires to. During the target setting process, the team must address the questions: What degree of improvement is realistic? How much improvement is enough?

To develop a sense of what may be realistic, the team should **create a data context for target setting** by reviewing and analyzing any existing data related to the outcome. Doing so ensures that targets are grounded in reality rather than in wishful thinking and enables districts or schools to set realistic yet ambitious targets to improve outcomes for their students.

In addition, teams will want to consider the various ways in which this school or district data context matters. For example, districts or schools serving large populations of disadvantaged students generally have more room for improvement than others. A history of low performance on an outcome can therefore provide opportunities for even faster rates of growth. Depending on the plan and school or district resource constraints, planning teams might opt to select different levels of improvement for different measures, setting faster rates of growth for some outcomes and slower rates for others.

When considering how much improvement is enough, teams should **be ambitious and also reassured that *all* improvement is valuable and valued**. Teams should set targets that reflect accelerated performance each year, with an eye to decreasing any gaps in performance the team observes between the district or school and the state or the district and comparable districts or schools. Whether these targets reflect a level of improvement that is statistically significant is much less important than whether these targets reflect an upward trend in improvement over time.

If the district or school has not yet collected the data necessary to measure an outcome, the team should include the outcome without a specific target and conduct the planning required to ensure the data is collected and monitored. The team may choose to indicate the timeframe in which baseline data will be collected and subsequent targets set for the plan.

**Analyzing District or School Performance:** To prepare for target setting, teams will want to review and analyze any existing district or school data for each outcome measure. They will want to review two or more years of district or school data related to the outcome, if possible, and analyze gains/losses and patterns of performance.

In addition to district or school data analysis reports, teams may want to review some of the many DESE reports available to help districts or schools compare their current performance with statewide figures for a broad set of data. Aggregate school- and district-level reports on numerous indicators are published on the state’s Profiles web page at <http://profiles.doe.mass.edu/>. The [Edwin Analytics](http://www.doe.mass.edu/edwin/analytics/) data reporting system also includes useful school- and student-level reports with data on MCAS performance and growth and post-secondary outcomes such as college enrollment.

Districts might also want to compare themselves to specific peer groups to answer the question of how schools in their district compare with schools in districts similar to their own. The state’s [District Analysis and Review Tools](http://www.mass.gov/edu/government/departments-and-boards/ese/programs/accountability/tools-and-resources/district-analysis-review-and-assistance/dart-for-districts-and-dart-for-schools.html) (DARTs) provide reports that district leaders can use to identify their peers and compare themselves across a large set of outcomes. Districts can look at measures such as student academic performance, course taking patterns, attendance, and graduation rates, among other areas. The DARTs automatically select demographic peers based on size, grade span, and demographic information and also allow districts to select their own comparisons. Using the DART, planning teams can address questions such as: How much improvement is typical for other districts with similar demographic profiles to ours? Among our peer group, what are the largest rates of improvement that have previously been attained? How does our schools’ improvement compare to peer schools?

Planning teams may also find DESE’s [Resource Allocation and District Action Reports](http://www.doe.mass.edu/research/radar/) (RADAR) useful when setting targets related to allocating the resources of people, time, and money. The RADAR suite includes three sets of reports related to district benchmarking, special education, and class size and student course-taking.

**Applying the State Context: Improvement by Massachusetts Schools**: Reviewing information about what schools in Massachusetts have historically accomplished is a valuable source of guidance for teams as they set targets for their district or school plan and consider what is possible in terms of rate of improvement. This section provides potential improvement benchmarks for four measures commonly used in district and school improvement plans for which comparable data is available statewide: student performance and growth on the MCAS, high school graduation rates, and chronic absenteeism (the share of students who were absent more than 10 percent of their days of enrollment).

For growth, graduation rates, and absenteeism, we report several potential benchmarks, in two tables.[[1]](#footnote-1)

Table A shows the average value for the measure statewide, the average change for all schools, and the average change for those schools that improved more than other schools with similar characteristics. [[2]](#footnote-2) Specifically, these schools exceeded the typical rate of improvement of schools with similar demographics and size. We refer to such schools as “beating the odds” schools. We present averages across all “beating the odds” schools, regardless of the schools’ characteristics—high or low poverty, large or small, etc.

Table B reports several statistics that illustrate the range of improvement for schools. We start by showing the improvement rate for schools at the 25th percentile of improvement: that is, for schools where 25 percent of schools improved more slowly and 75 percent improved more quickly. We also present the 50th, 75th, and 90th percentiles of school improvement to provide a sense of typical, fast, and very fast improvement on each measure.

We also provide guidance on how to use the Next Generation MCAS achievement results as a measure during the first few years of implementation of the new assessment system.

#### Setting Targets: Student Growth Percentiles

Student growth percentiles (SGPs) measure student improvement relative to their academic peers: other students who performed similarly on previous state tests. For example, a student with an SGP of 60 improved more than 60 percent of all students with similar test score histories. SGPs are combined for schools (or other groups of students) by finding the median SGP of all students in the group.[[3]](#footnote-3) DESE has gone to great lengths statistically to ensure that SGPs remain comparable across the changes in the assessment system, so they are valid measures of improvement even during the transition years.

As shown in Table 1A below, schools’ median SGPs typically remained the same over three years. But “beating the odds” schools saw median SGPs rise by 9 to 12 points, on average. For example, a school with a Grade 6 math SGP of 50 that improved at the “beating the odds” rate for that test would increase to a median SGP of 62.1 over three years.

**Table 1A: Change in medianstudent growth percentiles (SGP) over three years**

|  | **Average value in 2013–14** | **Typical change**  **over three years** | **“Beating the odds”**  **over three years** |
| --- | --- | --- | --- |
| Grade 6 ELA median SGP | 51.8 | 0.0 points | +10.3 points |
| Grade 6 math median SGP | 52.8 | 0.0 points | +12.1 points |
| Grade 10 ELA median SGP | 51.2 | +2.2 points | +11.1 points |
| Grade 10 math median SGP | 51.6 | +0.2 points | +9.8 points |

Table 1B illustrates that most schools’ median SGPs went up or down by less than about 10 points, but schools that improved at the 90th percentile reached median SGPs 16 to 18 points higher over the course of three years.

**Table 1B: Range of change in medianSGP over three years**

|  | **25th percentile** | **50th percentile** | **75th percentile** | **90th percentile** |
| --- | --- | --- | --- | --- |
| Grade 6 ELA median SGP | -8.5 points | +0.2 points | +8.7 points | +16.6 points |
| Grade 6 math median SGP | -9.8 points | -0.2 points | +10.2 points | +18.9 points |
| Grade 10 ELA median SGP | -5.0 points | +1.7 points | +9.1 points | +16.3 points |
| Grade 10 math median SGP | -7.3 points | +0.3 points | +7.3 points | +9.8 points |

#### Setting Targets: Graduation Rates

The Commonwealth’s students have graduated at higher rates every year for the last decade. Here we provide benchmarks for improvement on both the four-year and five-year cohort graduation rates.[[4]](#footnote-4) As shown in Table 2A, four-year graduation rates typically rise by several percentage points over a three-year period. Among “beating the odds” schools, graduation rates increased by an average of 6.8 percentage points over three years. At that rate, a school starting at the state’s average four-year graduation rate of 88.4 percent could see 95.2 percent of their students graduating by the end of three years.

For schools improving at the top 75th percentile, graduation rates went up by 5.3 points. The 90th percentile improvers saw graduation rates rise by 9.2 points over three years, though schools improving at these top rates typically started further behind other high schools. Five-year graduation rates followed similar patterns, though schools posted greater gains than on the four-year measure.

**Table 2A: Change in graduation rates over three years**

|  | **Average value in 2013–14** | **Typical change**  **over three years** | **“Beating the odds”**  **over three years** |
| --- | --- | --- | --- |
| Four-year graduation rates | 88.4% | +2.8 percentage points | +6.8pp |
| Five-year graduation rates | 91.2% | +2.3pp | +5.9pp |

**Table 2B: Range of change in graduation rates over three years**

|  | **25th percentile** | **50th percentile** | **75th percentile** | **90th percentile** |
| --- | --- | --- | --- | --- |
| Four-year graduation rates | -0.3pp | +1.9pp | +5.3pp | +9.2pp |
| Five-year graduation rates | -0.2pp | +1.7pp | +4.5pp | +8.0pp |

#### Setting Targets: Chronic Absenteeism

In Massachusetts, the typical student attends 95 percent of the days they are enrolled in a public school. However, in the typical school in 2013–14, 10.9 percent of all students were absent more than 10 percent of enrolled school days, which is the state’s definition of chronic absenteeism. As a school’s chronic absenteeism rate improves, it will decrease—so we would expect to see rates declining fastest for schools improving the most.

The typical school reduced its chronic absenteeism rate by 1 percentage point over three years; see Table 3A. Among schools that lowered their rates more than predicted by their characteristics, their rates decreased by 3.9 percentage points. This means that a “beating the odds” school that started at the state average of 10.9 percent chronic absenteeism rate would reduce that to 7.0 percent over three years.

As shown in Table 3B, schools at the 25th percentile for improvement in their chronic absenteeism rate actually saw increases, not decreases, in their rate, at about 1 percentage point over three years. At the higher end, schools that improved at the 75th percentile reduced their rate by 2.8 percentage points; at the 90th percentile, 5.7 percentage points.

**Table 3A: Change in chronic absenteeism rate over three years**

|  | **Average value in 2013–14** | **Typical change over three years** | **“Beating the odds”**  **over three years** |
| --- | --- | --- | --- |
| Chronic absenteeism rate | 10.9% | -1.0 percentage point | -3.9pp |

**Table 3B: Range of change in chronic absenteeism rate over three years**

|  | **25th percentile** | **50th percentile** | **75th percentile** | **90th percentile** |
| --- | --- | --- | --- | --- |
| Chronic absenteeism rate | +1.0pp | -0.8pp | -2.8pp | -5.7pp |

#### Setting Targets: Student Achievement

Improved academic outcomes, and in particular increases in the share of students meeting grade-level expectations, are core indicators of progress for any school or district. The Massachusetts Comprehensive Assessment System (MCAS) provides data that schools can use to gauge their progress on student achievement.

The switch to the next-generation MCAS assessment in 2017 for grades 3 to 8 makes it impossible to provide three-year trends for those grades. Thus, for those grades we present data on the 2018 mean scaled score by grade (see Table 4A). We also show the 25th, 50th, 75th, and 90th percentiles of one-year improvement in scaled scores from 2017 to 2018, to give a sense of the range of school improvement on the new test.

Table 4A shows that the median school improved ELA performance in elementary grades by about 3 scaled score points, depending on grade; the change in middle school grade ELA performance varied by grade. In mathematics, the median school stayed steady or declined, except in grade 3.

**Table 4A: Average scaled scores and range of change in scaled score points from 2017 to 2018**

|  | **Avg scaled score, 2018** | **25th percentile** | **50th percentile** | **75th percentile** | **90th percentile** |
| --- | --- | --- | --- | --- | --- |
| Grade 3 ELA | 502.2 | +0.0 SS pts | +3.3 SS pts | +6.6 SS pts | +9.8 SS pts |
| Grade 4 ELA | 501.8 | -0.8 | +2.7 | +6.1 | +9.5 |
| Grade 5 ELA | 501.9 | -0.2 | +3.0 | +6.7 | +9.8 |
| Grade 6 ELA | 501.0 | -1.7 | +1.5 | +5.5 | +9.0 |
| Grade 7 ELA | 497.0 | -5.5 | -2.3 | +1.1 | +4.5 |
| Grade 8 ELA | 499.1 | -3.7 | +0.0 | +3.8 | +6.9 |
| Grade 3 mathematics | 499.9 | -2.8 | +1.2 | +4.9 | +8.4 |
| Grade 4 mathematics | 497.9 | -3.6 | +0.0 | +3.7 | +7.6 |
| Grade 5 mathematics | 497.5 | -4.1 | -1.1 | +2.1 | +5.4 |
| Grade 6 mathematics | 498.6 | -3.3 | -0.4 | +2.9 | +6.3 |
| Grade 7 mathematics | 497.5 | -4.1 | -1.1 | +1.6 | +4.2 |
| Grade 8 mathematics | 498.8 | -3.9 | -0.9 | +2.2 | +5.3 |

Because the high school assessment has not yet transitioned, we provide three-year trend data similar to that for the previous three indicators in Tables 4B and 4C. The typical high school improved fairly rapidly on grade 10 ELA and mathematics proficiency and on high school science proficiency, increasing their percent proficient by between 5.6 and 8.3 percentage points. The “beating the odds” high schools increased performance even more quickly.

**Table 4B: Change in high school proficiency rates over three years**

|  | **Average value in 2013–14** | **Typical change**  **over three years** | **“Beating the odds”**  **over three years** |
| --- | --- | --- | --- |
| Grade 10 ELA proficiency | 90.7% | +8.3pp | +13.2pp |
| Grade 10 math proficiency | 80.3% | +3.2pp | +8.4pp |
| High school science proficiency | 72.2% | +5.6pp | +12.9pp |

As Table 4C shows, the fastest-improving high schools saw their proficiency rates increase by double-digit percentile points in many cases.

**Table 4C: Range of change in high school proficiency rates over three years**

|  | **25th percentile** | **50th percentile** | **75th percentile** | **90th percentile** |
| --- | --- | --- | --- | --- |
| Grade 10 ELA proficiency | +3.3pp | +7.0pp | +12.3pp | +18.1pp |
| Grade 10 math proficiency | -1.0pp | +2.7pp | +6.7pp | +12.5pp |
| High school science proficiency | +0.2pp | +3.0pp | +10.3pp | +17.5pp |

# *Planning for Success* Outcomes Worksheet

**Strategic Objective \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Instructions:** *Outcomes are the district or school SMART goals: specific and strategic; measurable; action-oriented; rigorous, realistic, results-focused; timed and tracked. Use this worksheet to draft one outcome for the specified strategic objective; then identify the data sources you will use in setting a target for this outcome. If the district or school does not currently collect data for this outcome, use this worksheet to begin planning for such data collection.*

| Outcome (SMART) | *Example: The district will increase the 4-year graduation rate for all students to (X)% by 2018.* | |
| --- | --- | --- |
| **Outcome**  (in SMART format)  *Note: Insert “X” in place of specific target until target is known* |  | |
| Does the district or school currently collect the data needed to measure this outcome? | **Yes** | **No** |
| What is the existing or proposed data source/instrument? |  | |
| Who is, or will be, responsible for collecting this data? |  | |
| When will this data be collected, with what frequency? |  | |
| What data will be used as baseline and when will it be collected? |  | |
| Who will bring existing data for the team to analyze in setting targets for this outcome? |  | |

1. We created benchmarks for improvement using school-level data because we wanted to present the full range of what’s possible across educational settings rather than mask this variation within districts. We restricted the analysis to schools with data available for at least 20 students in all six school years from 2008–2009 through 2013–14. For each measure, we average changes over three different three-year periods (2008–09 through 201­1–12, 2009–10 through 2012-13, and 2010–11 through 2013–14) to smooth out year-to-year variation. We end the analysis in 2013–14 to avoid years in which districts selected whether to take PARCC or MCAS. [↑](#footnote-ref-1)
2. The school characteristics we included in this analysis were: school enrollment, percent of students who were low income, percent who were identified for special education, and percent English language learners. [↑](#footnote-ref-2)
3. For more information about student growth percentiles, see ESE’s web page at <http://www.doe.mass.edu/mcas/growth/>. [↑](#footnote-ref-3)
4. <http://www.doe.mass.edu/infoservices/reports/gradrates/> [↑](#footnote-ref-4)