Achievement Gap Reduction
What is an achievement gap?

- The difference in student performance between a focal group and a reference group
  - Focal group – the group of interest
  - Reference group – the target group
- An achievement gap reduction would be a decrease in the achievement gap from one year to the next
- The goal of measuring achievement gap reduction is to focus on increasing the achievement of the focal group – schools’ lowest achieving students
Who are we comparing?

• Focal group – school’s high-need students
  – The lowest 25% of students in the score distribution

• Reference group – statewide benchmark
  – The state’s mean performance
  – Ambitious, yet attainable goal
  – Currently, only 2.5% of schools’ focal groups (across all subject areas) meet this target
  – Eliminates the ability to improve on this measure by decreasing the achievement of higher achieving students
What are we comparing?

• Standardized scale scores – z scores
  – Enables the comparison of scores across grades and subject areas
  – Includes CRCT and EOCT scores
  – Retests will be included, with the higher of the main and retest scores being utilized
What are z scores?

- **x** is a student’s scale score and **μ** and **σ** are the state mean and standard deviation, respectively, for that grade/subject/EOCT.
- **z** represents the distance between the student’s score and the state mean in standardized units.
- **z** scores have a mean of 0 and a standard deviation of 1, with 99.7% of scores falling between -3 and 3.
What are z scores?

- z scores can be compared across grades and subjects
- A baseline year will be utilized
  - The state means and standard deviations from a baseline year (2011) will be used to calculate z scores for 2010, 2011, and subsequent years
  - Ensures that the scale score to z score conversions remain the same each year and are unaffected by changes in the overall score distribution
What are the groups’ scores?

• Focal group – the mean z score of the school’s high-need students
• Reference group – the mean z score for the state – 0
  – 0 will be the benchmark for all subjects and for all years
  – Enables meaningful comparisons of the magnitude of gaps across subjects
  – Ensures that the gap measure will detect real changes in the academic achievement of students in the focal group in each school with respect to the statewide target (because the target isn’t moving)
What is being calculated?

- **Gap size**
  - State benchmark (0) – mean z score for the school’s high-need students
  - Negative scores and scores close to 0 are good
    - They represent a focal group performing better than or close to the state mean
- **Gap change**
  - Gap size for this year – gap size for last year
  - Negative scores are good
    - They represent a reduction in the gap from last year to this year
How are points assigned?

<table>
<thead>
<tr>
<th>Gap Size</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 or greater</td>
<td>1</td>
</tr>
<tr>
<td>1.2 – 1.49</td>
<td>2</td>
</tr>
<tr>
<td>0.9 – 1.19</td>
<td>3</td>
</tr>
<tr>
<td>Less than 0.9</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gap Change</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.05 or greater</td>
<td>1</td>
</tr>
<tr>
<td>-0.04 – 0.04</td>
<td>2</td>
</tr>
<tr>
<td>-0.15 – -0.05</td>
<td>3</td>
</tr>
<tr>
<td>Less than -0.15</td>
<td>4</td>
</tr>
</tbody>
</table>

• For each subject, schools receive a gap size and a gap change score based on the above rubrics

• The final subject score is the greater of the two scores
  – Provides an opportunity for schools to earn points by either having a small or non-existent current year gap or by decreasing the size of the gap from last year to this year

• The final overall score is the average of the subject scores
### Example

<table>
<thead>
<tr>
<th></th>
<th>Gap Size</th>
<th></th>
<th></th>
<th>Final Subject Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Magnitude</td>
<td>Points</td>
<td>Gap Change</td>
<td>Magnitude</td>
</tr>
<tr>
<td>Reading</td>
<td>0.91</td>
<td>3</td>
<td>-0.16</td>
<td>4</td>
</tr>
<tr>
<td>ELA</td>
<td>0.96</td>
<td>3</td>
<td>0.02</td>
<td>2</td>
</tr>
<tr>
<td>Math</td>
<td>0.73</td>
<td>4</td>
<td>-0.13</td>
<td>3</td>
</tr>
<tr>
<td>Science</td>
<td>0.68</td>
<td>4</td>
<td>0.01</td>
<td>2</td>
</tr>
<tr>
<td>Social Studies</td>
<td>0.81</td>
<td>4</td>
<td>-0.19</td>
<td>4</td>
</tr>
<tr>
<td>Final Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>