

Methodology, business rules, and data components used in the April, 2017 implementation of the Washington State Achievement Index

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Overview of 2016 Achievement Index

The information described here will be applied to data over three years, 2013-14, 2014-15 and 2015-16 data to create the 2016 Washington Achievement Index. Beginning with the 2014-15 school year, students in Washington State were assessed using the Smarter Balanced Assessment system.

The Washington Achievement Index will use three *performance indicators*: Proficiency, Growth and Career and College Readiness. The composite Achievement Index will be the 3-year average of the three most recent annual Achievement Index values. An annual component of the Index will be calculated, and the Index will be the mean of the three annual components.

The Proficiency indicator rating will be a combination of proficiency in ELA (or reading and writing in previous years), mathematics, and science. Subjects will be weighted equally to calculate the Proficiency Indicator. The Growth indicator rating will be a combination of median student growth percentiles (MSGPs) in ELA (or reading in previous years) and mathematics, weighted equally. The Index for elementary and middle schools weights the Growth indicator at 60% and the Proficiency indicator at 40%. For high schools, the weighting is conditional.

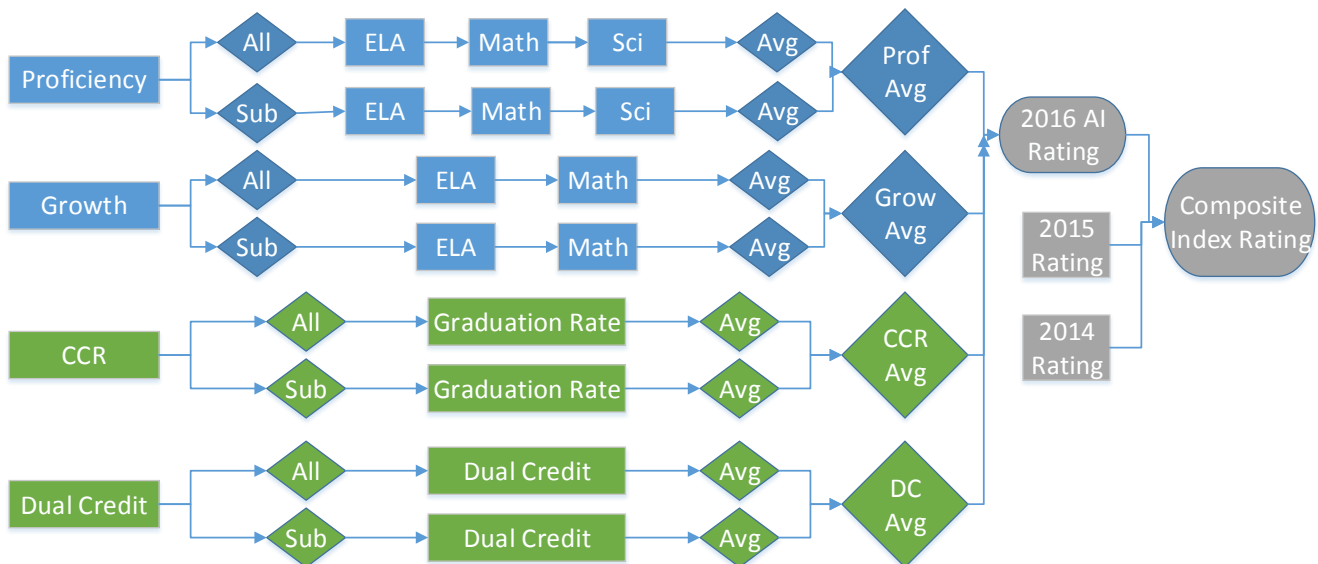
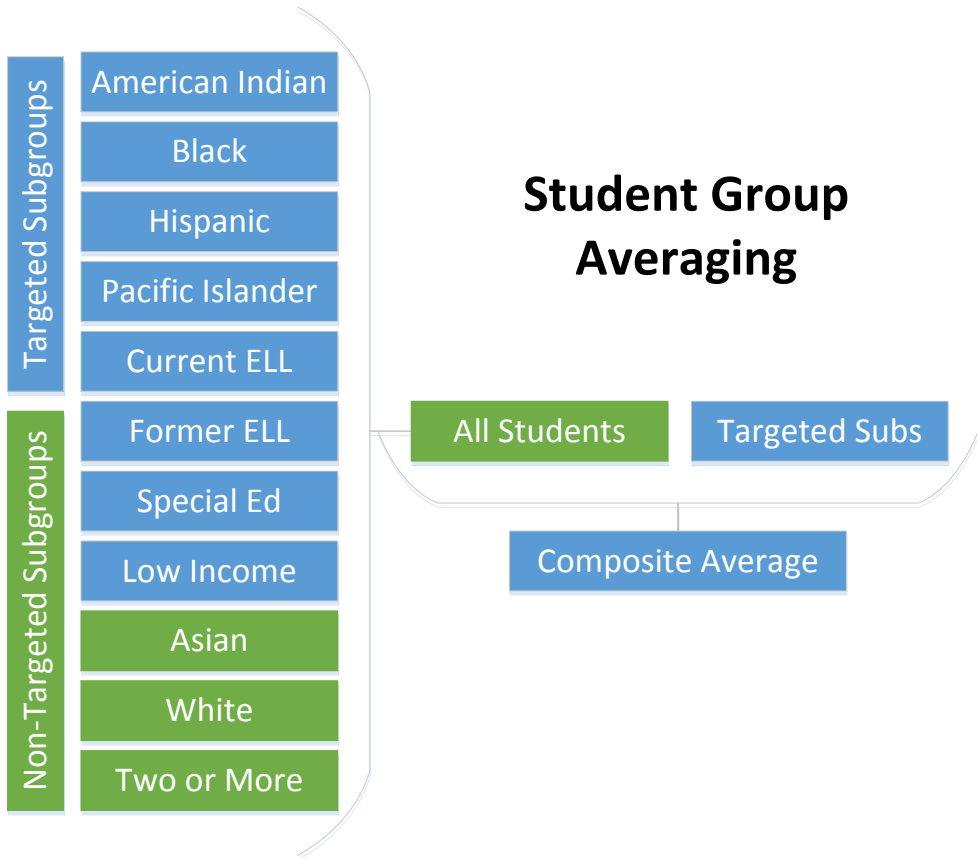


Table 1: Summary of Performance Indicators and Weighting

Performance Indicator	Elementary & Middle Schools	High Schools
<p>Proficiency. Percent of students meeting or exceeding state standards in ELA (or reading and writing in previous years), mathematics, and science as measured by the Smarter Balanced Assessment (SBA) system and Washington Comprehensive Assessment Program (WCAP). The content areas are equally weighted. This indicator will include performance for all students group and targeted subgroups for continuously enrolled students.</p> <p>A school must have at least reading and math to calculate a proficiency score.</p>	40%	**
<p>Student Growth. Median student growth percentiles (SGPs) using the methodology employed in the growth model developed by the National Centre for the Improvement of Educational Assessment. Growth in ELA (or reading previously) and Mathematics will be included for the All Students group and targeted subgroups for continuously enrolled students. A school must have at least ELA (or reading previously) and math SGP values to calculate a growth score.</p>	60%	**
<p>Career and College Readiness.</p> <p>a. The Adjusted 5-year Cohort Graduation Rates for All Students and targeted subgroups.</p>	Not applicable	**

b. The percent of students earning high school credit in a dual credit program* or earning a state or nationally recognized industry certification for all students group and targeted subgroups.		
<p>Notes:</p> <p>*Dual credit includes Advanced Placement, International Baccalaureate, Running Start, College in the High School, Tech Prep, and other courses intended to give students advanced credit toward career pathways or degrees. The data presented include schools serving grade 12 students.</p> <p>**High school weighting is conditional upon the year and ratings present:</p> <p>AI_2016=Prof_Index_2016 48% + Grad_Index_2016 48% + DC_Index_2016 4%</p> <p>AI_2016=Prof_Index_2016 50% + Grad_Index_2016 50%.</p> <p>AI_2016=Prof_Index_2016 32% + Growth_Index_2016 32% + Grad_Index_2016 32% + DC_Index_2016 4%</p> <p>AI_2016=mean(Prof_Index_2016,Growth_Index_2016,Grad_Index_2016).</p> <p>AI_2015=mean(Prof_Index_2015,Growth_Index_2015,Grad_Index_2015).</p> <p>AI_2014=mean(Prof_Index_2014,Growth_Index_2014,Grad_Index_2014).</p>		

Each performance indicator (Proficiency, Growth, and Career and College Readiness) will be reported by each (sub)group currently used in our state for federal accountability: All Students, American Indian/Alaskan Native, Asian, Black, Hispanic, Pacific Islander, White, Two or More Races, English Language Learner (Current ELL), Special Education, and Low Income. In addition, the subgroup of Former English Language Learner (Former ELL) is also reported and included in the Index calculation. Performance Indicator Ratings for the All Students group and targeted subgroups are the only ratings used when calculating the annual and composite achievement index. Targeted subgroups include all subgroups with the exception of White, Asian, and Two or More Races. The state-wide performance of the White, Asian, and Two or More Races subgroups consistently matched or exceeded the All Students group; therefore, they were not included as targeted subgroups.



Scores for the American Indian/Alaskan Native, Black, Hispanic, Pacific Islander, Current ELL, Former ELL, Special Education, and Low Income subgroups will be averaged into a targeted subgroup component score. The mean of the targeted subgroup component score and the All Students component score is included when determining the overall performance indicator rating.

Table 2: Index value assignment for performance indicators

<p>1. Proficiency Indicator is based on a rating of the percent of students meeting standard in ELA, mathematics, and science (content areas equally weighted) for All Students group and targeted subgroups for continuously enrolled students.</p>			
% Met Standard	Rating	% Met Standard	Rating
▪ 90.0 – 100%	10	▪ 40.0 - 49.9%	5
▪ 80.0 - 89.9%	9	▪ 30.0 – 39.9%	4
▪ 70.0 - 79.9%	8	▪ 20.0 – 29.9%	3
▪ 60.0 - 69.9%	7	▪ 10.0 – 19.9%	2
▪ 50.0 - 59.9%	6	▪ 0 – 9.9%	1
<p>2. Growth Indicator is based on a 10-point rating of the median growth percentile in ELA and mathematics for All Students group and targeted subgroups for continuously enrolled students.</p>			
Median SGP	Rating	Median SGP	Rating
▪ ≥ 70	10	▪ 45.0 – 49.99	5
▪ 65.0 – 69.99	9	▪ 40.0 – 44.99	4
▪ 60.0 – 64.99	8	▪ 35.0 – 39.99	3
▪ 55.0 – 59.99	7	▪ 30.0 – 34.99	2
▪ 50.0 – 54.99	6	▪ <30	1
<p>3. Career and College Readiness Indicator is based on the Adjusted 5-year Cohort Graduation Rate for the All Students group and targeted subgroups. This indicator applies only to schools that graduate students.</p>			
Graduation Rate	Rating	Graduation Rate	Rating
▪ ≥ 95%	10	▪ 70.0 - 74.9%	5
▪ 90.0 - 94.9%	9	▪ 65.0 - 69.9%	4
▪ 85.0 - 89.9%	8	▪ 60.0 - 64.9%	3
▪ 80.0 - 84.9%	7	▪ 55.0 - 59.9%	2
▪ 75.0 - 79.9%	6	▪ <55%	1
<p>4. Dual Credit Indicator is based on a rating of the percent of students enrolled in dual credit programs. The Dual Credit Indicator is part of the Career and College Readiness calculations.</p>			
% Enrollment	Rating	% Enrollment	Rating
▪ 90.0 - 100%	10	▪ 40.0 - 49.9%	5
▪ 80.0 - 89.9%	9	▪ 30.0 – 39.9%	4
▪ 70.0 - 79.9%	8	▪ 20.0 – 29.9%	3
▪ 60.0 - 69.9%	7	▪ 10.0 – 19.9%	2
▪ 50.0 - 59.9%	6	▪ 0 – 9.9%	1

Data Sources for 2016 Achievement Index

- **School identification and demographic fields:** School demographics were updated with the 2016 Demographics by School file from the OSPI Report Card, Data Files link. <http://reportcard.ospi.k12.wa.us/DataDownload.aspx>
 Note: Title-I status and Title-I eligible status are provided from the OSPI office of Special Programs and Federal Accountability.
- **Proficiency:** Data provided by OSPI-Student Information.
- **Median Student growth Percentiles:** Data provided by OSPI-Student Information.

- **Adjusted 5-Year Cohort Graduation Rate:** Data provided by OSPI-Student Information.
- **Dual Credit participation:** Data provided by OSPI-Student Information.

Business Rule Highlights

In the 2016 Achievement Index master data file, there are a combination of business rules and implementation decisions/formulas. This section presents an overview of the business rules as applied to the All Students group and targeted subgroups.

Minimum N rule: A minimum sample size of 20 students is applied to all performance indicators.

- Proficiency: Minimum N is applied per content area per school. Content areas are ELA (or reading and writing in previous years), mathematics, and science.
- Student Growth: Minimum N is applied per content area per school. Student growth is only calculated in ELA (or reading in previous years) and math. For 2014 growth was calculated for all grades, while in 2015 and 2016, growth was calculated for only grades 3-8.
- Graduation Rate: Minimum N is applied per graduation cohort (year) per school on the adjusted 5-year graduation rate data using the adjusted cohort numbers as the N.
- Dual Credit Rate: Minimum N is applied per school.

Performance Indicator Index value assignment: In the Achievement Index methodology, each of the performance indicators are indexed with a 10-point value. The values are assigned as per Table 2 earlier in this document.

Annual performance indicators. The following points are implemented in each of the three years of data.

- Proficiency: A school must have at least ELA (or reading in previous years) and math results to calculate the proficiency performance indicator for the All-students group or any targeted subgroup.
- A school is not required to have any targeted-subgroup data to be included in the index calculations as long as they meet the following business rules.
- Student growth: a school must have ELA (or reading in previous years) and math MSGP values in order to calculate the Student Growth performance indicator for either the All-students group or any targeted subgroup. For 2014 growth was calculated for all grades, while in 2015 and 2016, growth was calculated for only grades 3-8.
- Graduation Rate: a school must have at least the All Students rating for this performance indicator to be used.
- A High School must have 2 performance indicators to calculate an Annual Achievement Index. An elementary or middle school must have 1 of 2 performance indicators to calculate an annual Achievement Index.

Implementation Details- Application of Business Rules

Variable Naming: The columns contained in the Achievement Index file use the following naming

- First 2 characters: Content area for proficiency. Abbreviated as “ELA-“ for English language arts, “R-“ for reading, “M-“ for math, “W-“ for writing, and “S-“ for science.
- The second component represents the performance indicator. “MetPcnt-“ for proficiency percentage meeting or exceeding standard, “MGP-“ for Median Growth Percentile, “Grad-“ for graduation rate and “DC-“ for Dual Credit.
- The third component represents the year. These are “2014-“, “2015-“, and “2016-“. E.g. the 2013-14 academic year is commonly referred to as “2014 MSP data” so this component would be “-2014”.
- The fourth component, if present, represents the subgroup abbreviation. For example “-LowIncome” for the low income subgroup and “-Paclsl” for Pacific Islander.

For Example

“M-MetPCNT-2014-ALL”: the variable name for Math proficiency for the 2014 MSP/EOC data for the “All-students” subgroup”.

“MGP-Math-2014-FormerELL”: the variable name for median student growth percentile for 2014 for the Former-ELL subgroup.

Yearly Calculations

- 2014 data/calculations: Columns Q – CP
- 2015 data data/calculations: Columns CQ – FT
- 2016 data/calculations: Columns FU – IX

In the yearly calculations (e.g. columns FU – IX for 2016), the structure of the columns:

- Proficiency:
 - 33 columns for All-students and targeted subgroups, ordered as ELA, Math, and Science.
 - Overall Proficiency Index combining All Students and targeted subgroups. This is column HA for 2016 and is **highlighted yellow**.
- Student Growth:
 - 23 columns for school growth for All Students and targeted subgroups.
 - 1 columns for the overall student growth component average. This is column HX for 2016 and is **highlighted yellow**.
- Graduation Rate:
 - 9 columns for graduation rate for All-students and targeted subgroups.
 - 1 column for the overall graduation rate component average. This is column II for 2016 and is **highlighted yellow**.
- Dual Credit Participation:
 - 12 columns for dual credit participation for All Students and targeted subgroups.
 - 1 column for the overall dual credit participation. This is column IW for 2016 and is **highlighted yellow**.
- Annual Achievement Index:
 - 1 column
 - Note that due to the weighting differences with schools that serve grade 12 students noted above, there are two formulas applied depending on whether the school serves grade 12 students or not. Column IX is the final annual achievement index for 2016 and is **highlighted yellow**.