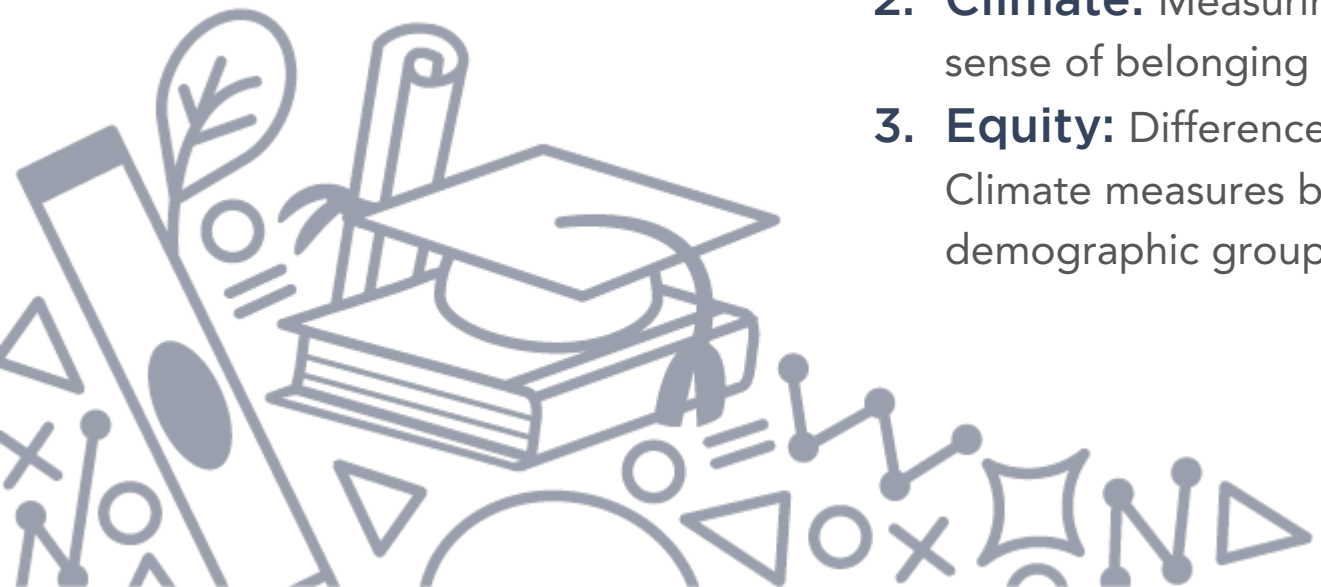
2024 School Performance Rating Technical Guide

Rating components & measures

The MSF School Performance Rating is comprised of 3 components: academics, climate & equity

These roll up into a single school rating. Each component is calculated from different measures that indicate a school's quality in that area. Traditional high schools, alternative high schools, & K-8's feature different academic & equity measures.*



1. **Academics:** Number of students on grade level &/or on track for college
2. **Climate:** Measuring students' and staff's sense of belonging
3. **Equity:** Difference in the Academic and Climate measures between different demographic groups within a school

Rating components & measures

Component	K8 Measures	HS Measures	Alternative HS Measures
Academic 60%	• MCA Math & Reading proficiency • MCA Math & Reading progress	• ACT Composite Score • 4-yr graduation rate • College continuation	• 7-year graduation rate • % in College or Working Full Time • Credit Accumulation
Climate 20%	• Teacher retention • Consistent attendance	• Teacher retention • Consistent attendance	N/A
Equity 20%	• Intra-school MCA proficiency gaps • Intra-school MCA progress gaps • Intra-school attendance gaps • % of teachers of color relative to students of color	• Intra-school graduation gaps • Intra-school college continuation gaps • Intra-school attendance gaps • % of teachers of color relative to students of color	N/A

See Appendix B for measure definitions

Ratings Calculations - Curving Data

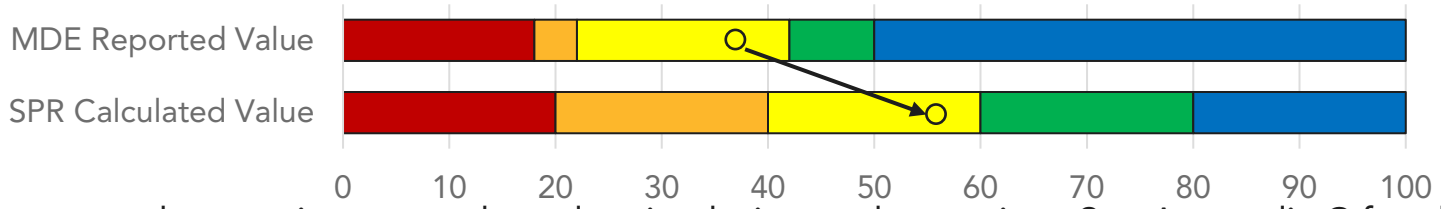
Each measure is divided into 5 color-coded categories, split by 4 cut points. Those cut points are curved to fit an even distribution on a 0 to 100 scale. This allows for comparison across measures.

Example: Reading Proficiency	Red	Orange	Yellow	Green	Blue
MDE Reported Value	≤18%	≤22% to >18%	≤42% to >22%	≤42% to >50%	>50%
SPR Calculated Value	≤20%	≤20% to 40>%	≤40% to >60%	≤60% to >80%	>80%

Example:

Reading Proficiency is split into 5 categories. It is then curved to fit a 20/40/60/80 distribution using the formula $y = 0.006882x^3 - 0.731027x^2 + 25.954613x - 250.46875$, where x is the MDE Reported value and y is the SPR Calculated (curved) value.

A school with a Reading Progress rate of 37% would be given a curved value of 58%, awarding them a Yellow rating.



Each measure has a unique curve based on its designated cut points. See Appendix C for all equations.

Ratings Calculations - Weighting

To arrive on component ratings, a weighted average of the measures within the component is calculated.

Example:

Sunnyside Elementary has calculated the following measures in the Academic component.

	Weight	MDE Reported Value	SPR Calculated Value	Color
Math Proficiency	13%	38%	66%	Green
Reading Proficiency	13%	37%	58%	Yellow
Math Progress	37%	66%	89%	Blue
Reading Progress	37%	42%	29%	Orange
Academic Rating (Weighted Avg)	-	-	60%	Green

This same technique is used to award an Overall Rating. That is, the three components contribute to a weighted average, the result of which is the Overall Rating.

Appendix A

Measure cut points & weighting

Academic component cut points & weighting – K-8 (60%)

Measure & Weight	Blue	Green	Yellow	Orange	Red
MCA Math Proficiency (37%)	>45%	≤45% to >33%	≤33% to >17%	≤17% to >9%	≤9%
MCA Reading Proficiency (37%)	>50%	≤50% to >42%	≤42% to >22%	≤22% to >18%	≤18%
MCAS Math Progress (13%)	>60%	≤60% to >47%	≤47% to >38%	≤38% to 30>%	≤30%
MCA Reading Progress (13%)	>67%	≤67% to >54%	≤54% to >47%	≤47% to >38%	≤38%

Academic component cut points & weighting – high school (60%)

Measure & points	Blue	Green	Yellow	Orange	Red
ACT (25%)	>21	≤21 to >18	≤18 to >15	≤15 to >14	≤14
4-yr grad rate (33%)	>90%	≤90% to >80%	≤80% to >70%	≤70% to >50%	≤50%
College persistence (42%)	>84%	≤84% to >75%	≤75% to >65%	≤65% to >55%	≤55%

Academic component cut points & weighting – alternative high school

Measure & points	Blue	Green	Yellow	Orange	Red
College or Working Full Time (25%)	>56%	≤56% to >42%	≤42% to >30%	≤30% to >15%	≤15%
7-yr grad rate (40%)	>84%	≤84% to >67%	≤67% to >47%	≤47% to >34%	≤34%
Credit Accumulation (20%)	>75%	≤75% to >60%	≤60% to >42%	≤42% to >25%	≤25%

Climate component cut points & weighting - K-8 schools (20%)

Measure & weight	Blue	Green	Yellow	Orange	Red
Teacher retention (50%)	>88%	≤88% to >80%	≤80% to >70%	≤70% to >60%	≤60%
Consistent attendance (50%)	>90%	≤90% to >80%	≤80% to >66%	≤66% to >45%	≤45%

Climate component cut points & weighting - high school (20%)

Measure & weight	Blue	Green	Yellow	Orange	Red
Teacher retention (50%)	>88%	≤88% to >80%	≤80% to >70%	≤70% to >60%	≤60%
Consistent attendance (50%)	>83%	≤83% to >60%	≤60% to >45%	≤45% to >30%	≤30%

Equity component cut points & weighting – K-8 schools (20%)

Measure & weight	Blue	Green	Yellow	Orange	Red
Proficiency gap – math (10%)	<23%	≥23% to <40%	≥40% to <55%	≥55% to <70%	≥70%
Proficiency gap – reading (10%)	<23%	≥23% to <40%	≥40% to <55%	≥55% to <70%	≥70%
Progress gap – math (15%)	<7%	≥7% to <15%	≥15% to <30%	≥30% to <40%	≥40%
Progress gap – reading (15%)	<7%	≥7% to <15%	≥15% to <30%	≥30% to <40%	≥40%
Consistent attendance gap (20%)	<2.5%	≥2.5% to <7%	≥7% to <14%	≥14% to <20%	≥20%
Teachers of color to students of color ratio (30%)	>1:2	≤1:2 to >1:2.5	≤1:2.5 to >1:3.3	≤1:3.3 to >1:5.7	≤1:5.7

Equity component cut points & weighting – high school (20%)

Measure & weight	Blue	Green	Yellow	Orange	Red
4-year grad gap – (25%)	<2.5%	≥2.5% to <6%	≥6% to <15%	≥15% to <20%	≥20%
College persistence gap (25%)	<4%	≥4% to <7%	≥7% to <12%	≥12% to <15%	≥15%
Consistent attendance gap (20%)	<4%	≥4% to <9%	≥9% to <16%	≥16% to <24%	≥24%
Teachers of color to students of color ratio (30%)	>1:2	≤1:2 to >1:2.5	≤1:2.5 to >1:3.3	≤1:3.3 to >1:5.7	≤1:5.7

Appendix B

Data definitions

(Data from MDE, unless noted)

Academic component definitions – K-8 schools

Measure	Definition
MCA Proficiency	% of students proficient on the MCA (including MTAS)
MCA Progress	% of students making progress, as defined by MDE

Academic component definitions – high schools

Measure	Definition
ACT	Average ACT composite score
4-year graduation rate	The percent of students that graduated within the traditional 4-year timeframe. Thus, students that enter a school in 9th grade graduate in 4 years. Students that enter in 10th grade graduate in 3 years. Students that transfer to another school are removed from the cohort. Students that drop out are attributed to the school in which they spent the most time, unless they drop out within less than one academic year of entering a school.
College persistence	% of high school graduates enrolled or graduated into their 2nd academic year of college (SLEDS)

Academic component definitions – alternative high schools

Measure	Definition
College or Working Full Time	The percent of graduates that are enrolled in college or working 35+ hours a week one year after graduating high school (SLEDS)
7-year graduation rate	The percent of students that graduated within a 7-year timeframe. Thus, students that enter a school in 9th grade graduate in 7 years. Students that enter in 10th grade graduate in 6 years. Students that transfer to another school are removed from the cohort. Students that drop out are attributed to the school in which they spent the most time, unless they drop out within less than one academic year of entering a school.
Credit Accumulation	Of those that are enrolled at least 95 days, the percent of students that accrue 5+ credits, or 1 academic year's equivalent

Climate component definitions

Measure	Definition
Teacher retention	% of teachers employed from the previous year that are also employed in the current year (PESLB)
Consistent attendance	% of students attending school 90% of the days or more, defined by MDE

Equity component definitions – K-8 schools

Measure	Definition
Proficiency gap	Calculation of average & range of proficiency % by student groups (student groups as defined by ESSA)*
Growth gap	Calculation of average & range of progress % by student groups (student groups as defined by ESSA)*
Consistent attendance gap	Calculation of average & range of consistent attendance % by student groups (student groups as defined by ESSA)*
Teachers of color to students of color ratio	Ratio of the % of teachers of color to the % of students of color

*See Appendix C for more details

Equity component definitions – high schools

Measure	Definition
4-year grad gap	Calculation of average & range of 4-year graduation % by student groups (student groups as defined by ESSA)*
College persistence gap	Calculation of average & range of % of HS graduates starting college & persisting or graduating as of 2nd academic year
Consistent attendance gap	Calculation of average & range of consistent attendance % by student groups (student groups as defined by ESSA)*
Teachers of color to students of color ratio	Ratio of the % of teachers of color to the % of students of color

*See Appendix C for more details

Appendix C

Gap Calculations

Gap calculations

- For "Calculation of average & range of [measure] % by student groups," we apply the coefficient of variation, or "CV." The formula is a statistical measure of the relative range of data points in a data series around the mean (average). To learn more about the value of this calculation, please watch this video.
- CV provides a normed way to compare schools' data averages & ranges. The smaller the CV, the more similar the experiences of the students at the school. If the CV is larger, student experiences are more inconsistent.
- For each measure, GMS calculated the average & range of the student groups at their school. Student groups (with at least 20 students) are reported and provided by MDE. Groups are set based on the demographics categories captured in reporting; they include race, socio-economics, SPED status & ELL status. For more information on the ESSA groups & calculations, go to MDE ESSA accountability.

Gap calculations (sample)

Sample for proficiency

Measure	Definition	School 1	School 2	School 3
Mean (X)	Average	55	55	38
Standard Deviation (SD)	Variance from the mean	7	5	3.4
Coefficient of Variation	SD/X	13%	9%	9%

In this sample, schools 1 & 2 have the same average proficiency but the range of scores are bigger at school 1 (meaning there's greater difference between the different groups of students). In school 2, student groups are performing more equitably.

In school 3, students are performing as equitably as in school 2; however, their average achievement is much lower.

Appendix D

Curve Equations

Curve Equations (K8)

Component	Measure	Equation
Academic	MCA Math Proficiency	$y = 0.00186\ x^3 - 0.16183\ x^2 + 5.734747x - 19.860491$
	MCA Reading Proficiency	$y = 0.006882\ x^3 - 0.731027\ x^2 + 25.954613x - 250.46875$
	MCA Math Progress	$y = 87.203798 * \ln(x) - 276.649636$
	MCA Reading Progress	$y = 107.961776 * \ln(x) - 373.24823$
Climate	Teacher Retention	$y = 0.000992\ x^3 - 0.208333\ x^2 + 16.484127x - 433.333333$
	Consistent Attendance	$y = 0.000227\ x^3 - 0.029705\ x^2 + 2.129252x - 36.326531$
Equity	MCA Math/Reading Proficiency Gap	$y = - 1.280788 + 110.197044$
	MCA Math/Reading Progress Gap	$y = -0.002345\ x^3 + 0.172675x^2 - 5.410013x + 110.213439$
	Consistent Attendance Gap	$y = -0.00998\ x^3 + 0.372565 - 7.257737 + 95.971758$
	Teachers of color to students of color ratio	$y = 0.44833 * x^{1.324978}$

Curve Equations (HS)

Component	Measure	Equation
Academic	4 Year Graduation Rate	$y = 3.459037 * e^{0.035162x}$
	College Continuation	$y = 2.060542\ x - 93.722783$
	ACT	$y = 0.47619\ x^3 - 25.714286\ x^2 + 465.238095x - 2760$
Climate	Teacher Retention	$y = 0.000992\ x^3 - 0.208333\ x^2 + 16.484127x - 433.333333$
	Consistent Attendance	$y = 59.566734 * \ln(x) - 184.112826$
Equity	4 Year Graduation Gap	$y = -0.02322 + 0.825034 - 11.397732\ x + 103.70068$
	Consistent Attendance Gap	$y = -0.003571x^3 + 0.19881x^2 - 6.109524\ x + 101.485714$
	Teachers of color to students of color ratio	$y = 0.44833 * x^{1.324978}$

Curve Equations (Alt HS)

Component	Measure	Equation
Academic	7 Year Graduation Rate	$y = 0.000422\ x^3 - 0.078733\ x^2 + 5.822792x - 103.535211$
	College or Working Full Time	$y = 1.124373 * x^{1.059097}$
	Credit Accumulation	$y = 0.000172\ x^3 - 0.023715\ x^2 + 2.173771 - 22.210339$