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ACCOUNTABILITY INDEX
TECHNICAL GUIDE
JULY 2012

Calculating School Accountability Scores

This document explains how to calculate:

- School accountability report card overall score
- School accountability report card priority scores
- School accountability report card accountability expectations deductions

You can replicate the calculations used to arrive at a school's accountability scores using data from the Technical Report Card and this document.

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Building the Overall Accountability Score

Wisconsin's new school accountability system uses multiple measures across four priority areas and expectations of student engagement to build a 0-to-100-point score for each school. This document connects the data on the Technical Report Card to the school score; it assumes the user is familiar with Wisconsin's approved federal Elementary and Secondary Education Act (ESEA) waiver (available at <http://dpi.wi.gov/oea/acct/accountability.html>) and the Technical Report Card.

Individual accountability scores are calculated for Student Achievement, Student Growth, Closing Gaps, and On-Track and Postsecondary Readiness, along with potential deductions for schools missing established targets for student engagement indicators. Combining all of these numbers is a bit more complicated than simply adding them together, for one very important reason—Wisconsin has schools of many different sizes, grade levels, and student populations.

Background

The Wisconsin Department of Public Instruction (DPI) bases the process of building an overall school accountability score on three important principles:

1. **We cannot calculate every priority area score for every school.** For example, Student Growth requires the state to have WKCE test scores for consecutive grades in the same school; because Wisconsin only tests high school students in 10th grade, traditional high schools (grades 9-12) are excluded. Every component of the index requires there be at least 20 students with data to calculate a score.
2. **A school should not be advantaged or disadvantaged by the presence or lack of a priority area or component.** Simply adding or averaging the priority areas would create a bias for high schools, which are generally not measured on Student Growth, increasing their scores compared to elementary and middle schools.
3. **The majority of Wisconsin schools have very high rates of attendance and high school graduation, both components of the On-Track and Postsecondary Readiness area.** There is very little overall statewide variation in these measures—performance gaps are driven by a “long tail” of few schools with low rates.

We use two solutions to build a score that follows these principles:

1. **Student Growth and Closing Gaps scores are aligned with Student Achievement.** Aligning scores to a common scale avoids creating a bias between these priority areas.
2. **On-Track and Postsecondary Readiness scores have a fixed weight no matter how many other priority area scores are calculated.** Fixing the weight of this priority area allows us to account for the narrow overall range of high attendance and graduation rates.

The process for combining priority scores and student engagement indicator (red flag) deductions into an overall accountability score is:

- First, take the average of the Student Achievement, Student Growth, and Closing Gaps scores calculated for a school.
- Next, multiply that average by a number that depends on which components of On-Track and Postsecondary Readiness are calculated for a school:
 - If there is an attendance or graduation score (out of 80 points) and scores for the other components (out of 20 points) then the average is multiplied by 3.
 - If there is only an attendance or graduation score (out of 80 points) then the average is multiplied by 3.2.
- Add the multiplied average of Student Achievement, Student Growth, and Closing Gaps to the On-Track and Postsecondary Readiness score, and divide the sum by 4.
- Finally, subtract any Student engagement indicator (red flag) deductions from the result to arrive at the overall accountability score. Each red flag results in a five point deduction.

The overall accountability score determines which accountability rating category and level of support a school falls into:

<i>Accountability Rating Category</i>	<i>Accountability Score Range</i>	
	<i>Minimum</i>	<i>Maximum</i>
Significantly Exceeds Expectations	83	100
Exceeds Expectations	73	82.9
Meets Expectations	63	72.9
Meets Few Expectations	53	62.9
Fails to Meet Expectations	0	52.9

<i>Accountability Rating Category</i>	<i>Level of Support</i>
Significantly Exceeds Expectations	Rewards and Replication
Exceeds Expectations	Rewards and Replication
Meets Expectations	Local Improvement Efforts
Meets Few Expectations	State Support
Fails to Meet Expectations	State Support

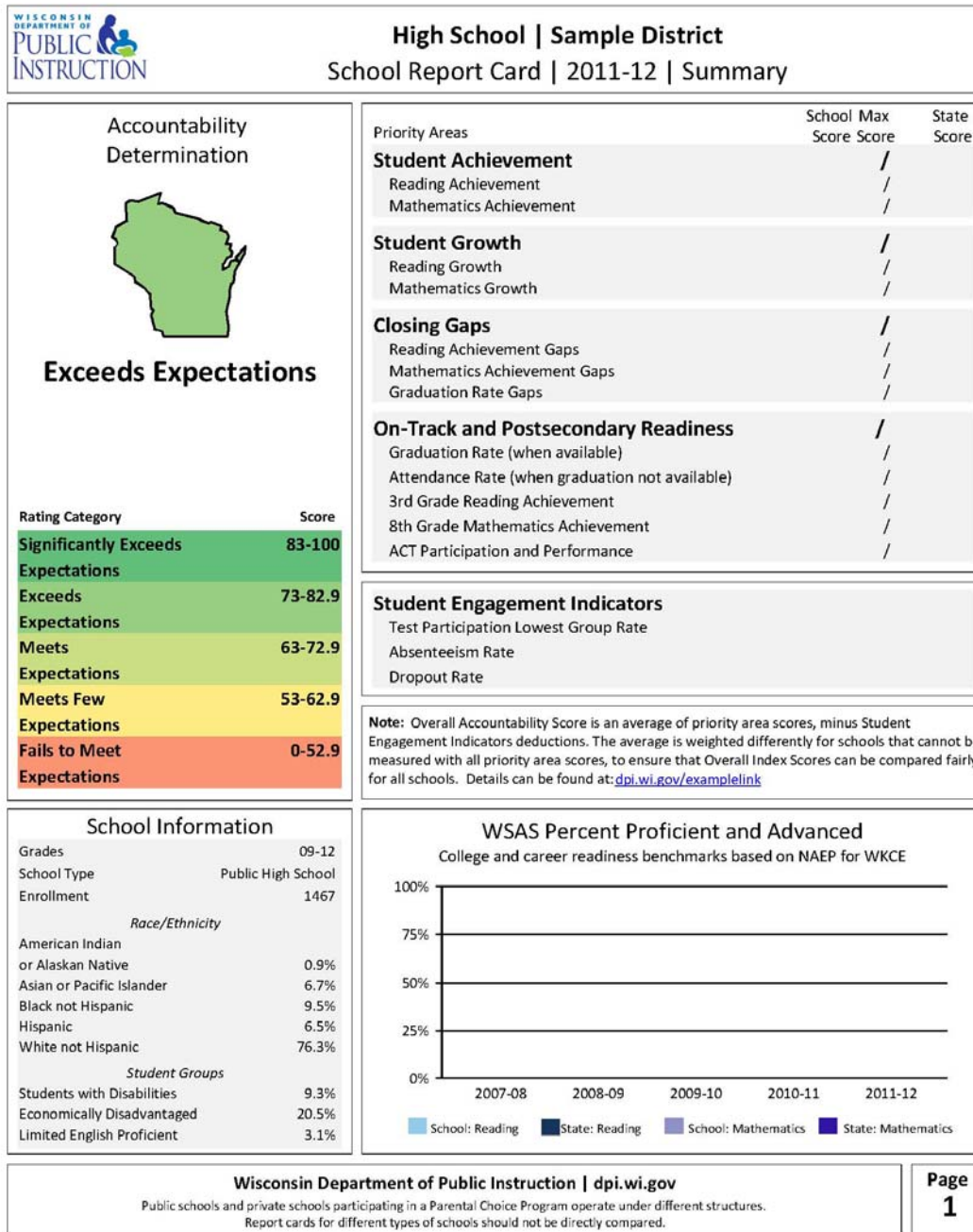
Global Notes

- The accountability index has four priority areas and an area on student engagement. Within each area, individual components are calculated. (Example: Student Achievement is a priority area; Reading Achievement and Mathematics Achievement are its two components.)
- All scores are calculated and reported to one-tenth of a point.
- All calculations are rounded to the third decimal point (0.001).
- DPI uses a “cell size,” the minimum number of students needed to calculate a data component, of 20 students. In most cases, the cell size is applied to only the current year of data. In the 3rd Grade Reading and 8th Grade Mathematics Achievement components of the On-Track and Postsecondary Readiness priority area, the cell size is applied to the two most recent years of data.
- Sample report cards will not match data shown here.

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Reading the Report Card

Overall accountability score, priority area scores, and red flag deductions are shown on page 1 of the report card. Note that the below example does not contain any data other than school and district name, accountability determination, and school information.



Walkthrough #1

Sample Elementary has the following priority area scores:

<i>Priority Area or Component</i>	<i>Score/Possible</i>
Student Achievement	71.7 / 100
Student Growth	59.0 / 100
Closing Gaps	62.4 / 100
On-Track and Postsecondary Readiness	
Attendance	77.6 / 80
3 rd Grade Reading	15.5 / 20
Student Engagement Indicators (red flags)	No deductions

Step 1: Combine Student Achievement, Student Growth, and Closing Gaps

$$\text{Average} = \frac{\text{Student Achievement Score} + \text{Student Growth Score} + \text{Closing Gaps Score}}{3}$$

This school has scores calculated for all three of these priority areas.

$$\text{Average} \times 3 = \frac{71.7 + 59.0 + 62.4}{3} \times 3 = \mathbf{193.1}$$

Step 2: Combine Result with On-Track/Postsecondary Scores

$$\text{Base Score} = \frac{(\text{Average} \times 3) + \text{Attendance Score} + \text{Other On-Track/Postsecondary Scores}}{4}$$

$$\text{Base Score} = \frac{193.1 + 77.6 + 15.5}{4} = \mathbf{71.6}$$

Step 3: Apply Student Engagement Indicator (red flag) Deductions

$$\text{Overall Score} = \text{Base Score} - \text{Deductions}$$

$$\text{Overall Score} = 71.6 - 0 = \mathbf{71.6}$$

Sample Elementary's accountability score is 71.6, putting it into the **Meets Expectations** category.

Walkthrough #2

Example High School has the following priority area scores:

<i>Priority Area or Component</i>	<i>Score/Possible</i>
Student Achievement	56.9 / 100
Closing Gaps	70.2 / 100
On-Track and Postsecondary Readiness	
Graduation	68.8 / 80
ACT Participation/Performance	9.6 / 20
Student Engagement Indicators (red flags)	-5 for Test Participation

It does not have a Student Growth score because there is only one tested grade, 10th, in the school.

Step 1: Combine Student Achievement, Student Growth, and Closing Gaps

$$\text{Average} = \frac{\text{Student Achievement Score} + \text{Closing Gaps Score}}{2}$$

$$\text{Average} \times 3 = \frac{56.9 + 70.2}{2} \times 3 = \mathbf{190.7}$$

Step 2: Combine Result with On-Track/Postsecondary Scores

$$\text{Base Score} = \frac{(\text{Average} \times 3) + \text{Graduation Score} + \text{Other On-Track/Postsecondary Scores}}{4}$$

$$\text{Base Score} = \frac{190.7 + 68.8 + 9.6}{4} = \mathbf{67.3}$$

Step 3: Apply Student Engagement Indicator (red flag) Deductions

$$\text{Overall Score} = \text{Base Score} - \text{Deductions}$$

$$\text{Overall Score} = 67.3 - 5 = \mathbf{62.3}$$

Example High's accountability score is 62.3, putting it into the **Meets Few Expectations** category.

Walkthrough #3

Rural Intermediate has the following priority area scores:

<i>Priority Area or Component</i>	<i>Score/Possible</i>
Student Achievement	86.2 / 100
Student Growth	54.0 / 100
On-Track and Postsecondary Readiness Attendance	77.9 / 80
Student Engagement Indicators (red flags)	No deductions

It does not have a Closing Gaps score because it is too small to have student groups with at least 20 students. It does not have any On-Track/Postsecondary scores beyond attendance because it is a grades 4-6 school (and thus has no 3rd grade reading or 8th grade mathematics data).

Step 1: Combine Student Achievement, Student Growth, and Closing Gaps

$$\text{Average} = \frac{\text{Student Achievement Score} + \text{Student Growth Score}}{2}$$

$$\text{Average} \times 3.2 = \frac{86.2 + 54.0}{2} \times 3.2 = \mathbf{224.3}$$

Step 2: Combine Result with On-Track/Postsecondary Scores

$$\text{Base Score} = \frac{(\text{Average} \times 3.2) + \text{Attendance Score}}{4}$$

$$\text{Base Score} = \frac{224.3 + 77.9}{4} = \mathbf{75.6}$$

Step 3: Apply Student Engagement Indicator (red flag) Deductions

$$\text{Overall Score} = \text{Base Score} - \text{Deductions}$$

$$\text{Overall Score} = 75.6 - 0 = \mathbf{75.6}$$

Rural Intermediate's accountability score is 75.6, putting it into the **Exceeds Expectations** category.

Accountability Score Worksheet

Introduction

This worksheet requires that you have calculated scores found in the Technical Report Card for each of the four priority areas that apply to your school:

- Student Achievement: score out of 100 points
- Student Growth: score out of 100 points
- Closing Gaps: score out of 100 points
- On-Track and Postsecondary Readiness: score out of 100 points
 - Attendance or Graduation: Score out of 80 points
 - 3rd Grade Reading, 8th Grade Mathematics, ACT Participation/Performance: Total out of 20 points

It also requires that you have data on which Student Engagement Indicators (red flag) deductions, if any, are applied to your school.

Instructions

Work through the worksheet using data you have already calculated for the school. Once you have calculated the overall accountability score, use it to determine the accountability rating category and level of support:

<i>Accountability Rating Category</i>	<i>Accountability Score Range</i>	
	<i>Minimum</i>	<i>Maximum</i>
Significantly Exceeds Expectations	83	100
Exceeds Expectations	73	82.9
Meets Expectations	63	72.9
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<i>Accountability Rating Category</i>	<i>Level of Support</i>
Significantly Exceeds Expectations	Rewards and Replication
Exceeds Expectations	Rewards and Replication
Meets Expectations	Local Improvement Efforts
Meets Few Expectations	State Support
Fails to Meet Expectations	State Support

Overall Accountability Score Worksheet

Step 1: Combine Student Achievement, Student Growth, and Closing Gaps

Leave a box blank if there is no score to enter.

(1a) Enter the Student Achievement score, if applicable	1a		
(1b) Enter the Student Growth score, if applicable	1b		
(1c) Enter the Closing Gaps score, if applicable	1c		
(1d) Add boxes 1a through 1c		1d	
(1e) How many boxes in 1a through 1c have scores?		1e	
Average: (1f) Divide box 1d by box 1e			1f

Step 2: Combine Result with On-Track/Postsecondary Scores

Leave a box blank if there is no score to enter.

(2a) Enter the Attendance or Graduation score	2a		
(2b) Enter the 3 rd Grade Reading score, if applicable	2b		
(2c) Enter the 8 th Grade Mathematics score, if applicable	2c		
(2d) Enter the ACT Participation/Performance score, if applicable	2d		
(2e) Add boxes 2a through 2d	2e		
(2f) Enter the average from box 1f in Step 1		2f	
(2g) Is there at least one score in boxes 2b through 2d?		2g	<input type="checkbox"/> Yes <input type="checkbox"/> No
(2h) If box 2g is "Yes," enter 3; if "No," enter 3.2		2h	
(2i) Multiply box 2f by box 2h		2i	
(2j) Enter the value in box 2e			2j
(2k) Enter the value in box 2i			2k
(2l) Add boxes 2j and 2k			2l
Base Accountability Score: (2m) Divide box 2l by 4			2m

Step 3: Apply Red Flag Deductions

(3a) Enter the base accountability score from box 2k in step 2			3a
(3b) Did the school fall below its test participation goal?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If "No," enter -5	3b
(3c) Did the school's dropout rate exceed the goal?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If "No," enter -5	3c
(3d) Did the school's absenteeism rate exceed the goal?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If "No," enter -5	3d
Overall Accountability Score: (3e) Add boxes 3a through 3d			3e

Calculating a Student Achievement Score

The Student Achievement priority area is designed to show **how well the students in a school have learned the knowledge and skills they are supposed to develop**. DPI uses assessment data over the past three years to build a score, with more recent years having more effect on the score. Student Achievement is a points-based measure that gives credit for achievement across multiple levels.

Background

The simplest way to measure student achievement with assessment results, as mandated in the federal No Child Left Behind Act of 2001, is by the percentage of students scoring at or above the proficient level. The definition of “proficient” for the Wisconsin Knowledge and Concepts Examination (WKCE) was originally developed in 1997 through a detailed process involving educators and testing professionals; a similar process was used in 2007 for the Wisconsin Alternate Assessment for Students with Disabilities (WAA-SwD). Wisconsin has achieved high statewide proficiency rates under that definition for many years, but other assessments found different results. For example, the 2010-11 National Assessment of Educational Progress (NAEP) found 47 percent of Wisconsin 4th graders scoring proficient in mathematics, whereas the WKCE and WAA-SwD found 79 percent proficient.

As part of developing this accountability system, DPI is setting college and career readiness benchmarks based on NAEP cut scores, thus moving to higher proficiency standards. We could not make a similar change with the WAA-SwD because that test is constructed differently, but the new Dynamic Learning Maps assessment to be introduced in a few years will reflect these higher expectations.

One of the consequences of this decision is that many students we formerly considered proficient are now scoring at lower achievement levels. To ensure schools are treated fairly, the Student Achievement measure allows students to earn points for their school based on their achievement level:

- Basic level: **0.5 points**
- Proficient level: **1 point**
- Advanced level: **1.5 points**

It also incorporates three years of data to **“smooth out the bumps” in year-to-year results**, weighting the most recent years more heavily.

Reading the Report Card

The tables in the student achievement section show the count of students scoring at each performance level over the last three years. Consider the following data on reading achievement for a sample school, which we will use throughout this walkthrough:

Performance Level	Points Multiplier	2009-10			2010-11			2011-12		
		Students		Points	Students		Points	Students		Points
		Count	Percent		Count	Percent		Count	Percent	
Advanced	1.5	22	16.3%	33	22	17.2%	33	21	16.9%	31.5
Proficient	1	35	25.9%	35	34	26.6%	34	41	33.1%	41
Basic	0.5	37	27.4%	18.5	38	29.7%	19	33	26.6%	16.5
Minimal Performance/ Not Tested	0	41	30.4%	0	34	26.6%	0	29	23.4%	0
Total Enrolled	-	135	100.0%	86.5	128	100.0%	86	124	100.0%	89

This table shows that 135 students were enrolled at this school in 2009-10, with 22 scoring Advanced, 35 scoring Proficient, 37 scoring Basic, and 41 scoring Minimal Performance or not tested. Counts for 2010-11 and 2011-12 are similarly displayed. This table also shows percent of students scoring in each performance category in 2009-10, with 16.3% scoring Advanced, 25.9% scoring Proficient, 27.4% scoring Basic, and 30.4% scoring Minimal Performance or not tested. Percentages for 2010-11 and 2011-12 are similarly displayed. Points and points multipliers for each performance level are also displayed.

Walkthrough

This walkthrough guides the user through determination of a Student Achievement score in a single content area, reading. To determine an overall student achievement score, the process is repeated for the other subject (mathematics in this case) and the two content area scores are added.

Throughout this walkthrough we use three terms to describe the year of data used in each step:

- “Prior Year Two” means the left-most school year shown on the report card. In this example, it refers to 2009-10.
- “Prior Year One” means the center school year shown on the report card. In this example, it refers to 2010-11.
- “Current Year” means the right-most school year shown on the report card. In this example, it refers to 2011-12.

Step 1: Assign and Total Points

The first step is to assign points for student achievement. Students scoring Advanced are assigned 1.5 points each; the students scoring Proficient, 1 point; and students scoring Basic, 0.5 points. Students scoring Minimal Performance or not tested are assigned zero points. These point values can be combined for the students in the school by using them as a multiplier:

Performance Level	Points Multiplier	2009-10			2010-11			2011-12		
		Students		Points	Students		Points	Students		Points
		Count	Percent		Count	Percent		Count	Percent	
Advanced	1.5	22	16.3%	33	22	17.2%	33	21	16.9%	31.5
Proficient	1	35	25.9%	35	34	26.6%	34	41	33.1%	41
Basic	0.5	37	27.4%	18.5	38	29.7%	19	33	26.6%	16.5
Minimal Performance/ Not Tested	0	41	30.4%	0	34	26.6%	0	29	23.4%	0
Total Enrolled	-	135	100.0%	86.5	128	100.0%	86	124	100.0%	89

Calculation

$$\text{Prior Year Two Points} = (22 \times 1.5) + (35 \times 1) + (37 \times 0.5) = 86.5$$

$$\text{Prior Year One Points} = (22 \times 1.5) + (34 \times 1) + (38 \times 0.5) = 86$$

$$\text{Current Year Points} = (21 \times 1.5) + (41 \times 1) + (33 \times 0.5) = 89$$

Step 2: Determine Average Points by Enrollment

Next, divide each year's total points by the average enrollment across all three years.

Performance Level	Points Multiplier	2009-10			2010-11			2011-12		
		Students		Points	Students		Points	Students		Points
		Count	Percent		Count	Percent		Count	Percent	
Advanced	1.5	22	16.3%	33	22	17.2%	33	21	16.9%	31.5
Proficient	1	35	25.9%	35	34	26.6%	34	41	33.1%	41
Basic	0.5	37	27.4%	18.5	38	29.7%	19	33	26.6%	16.5
Minimal Performance/ Not Tested	0	41	30.4%	0	34	26.6%	0	29	23.4%	0
Total Enrolled	-	135	100.0%	86.5	128	100.0%	86	124	100.0%	89

Formula

$$\text{Average Enrollment} = \frac{\text{Prior Year Two Enrollment} + \text{Prior Year One Enrollment} + \text{Current Year Enrollment}}{3}$$

$$\text{Prior Year Two Average} = \frac{\text{Prior Year Two Points}}{\text{Average Enrollment}}$$

$$\text{Prior Year One Average} = \frac{\text{Prior Year One Points}}{\text{Average Enrollment}}$$

$$\text{Current Year Average} = \frac{\text{Current Year Points}}{\text{Average Enrollment}}$$

Calculation

$$\text{Average Enrollment} = \frac{135 + 128 + 124}{3} = 129$$

$$\text{Prior Year Two Average} = \frac{86.5}{129} = \mathbf{0.671}$$

$$\text{Prior Year One Average} = \frac{86}{129} = \mathbf{0.667}$$

$$\text{Current Year Average} = \frac{89}{129} = \mathbf{0.690}$$

Step 3: Weight Averages by Year

In step three we first weight the values from step two by multiplying the current year's value by 1.5, the prior year's value by 1.25, and the second prior year's value by 1.0. Next, we add these values. Finally, we divide the sum by 3.75, which is the total of the three year weights.

If a school has test data available for only prior year one and the current year, the most current year will be assigned a weight of 1.5, while prior year one is assigned a weight of 1.0 and the divisor becomes 2.5 rather than 3.75. If a school only has test data for the current year, then only that single year of data is used to calculate the proficiency rate and there is no weighting.

Formula

$$\text{Weighted Points} = \frac{\text{Prior Year Two Average} + (\text{Prior Year One Average} \times 1.25) + (\text{Current Year Average} \times 1.5)}{3.75}$$

Calculation

$$\text{Weighted Points} = \frac{0.671 + (0.667 \times 1.25) + (0.690 \times 1.5)}{3.75} = \mathbf{0.677}$$

Step 4: Put Score on a 50-Point Scale

The reading achievement score is calculated by multiplying the total points from step 3 by 50. The same process is repeated to produce a mathematics achievement score and the two scores are added to produce an achievement score on a 0-100 point scale.

Calculation

$$\text{Reading Achievement Score} = 0.677 \times 50 = \mathbf{33.9}$$

Student Achievement Score Worksheet

Introduction

This worksheet has two parts, one for reading and one for mathematics. Both parts require you to copy data from the Student Achievement detail on **page 2** of the Technical Report Card. Be sure to **use the counts, not the percentages**. Note that the score calculated here may not exactly match the report card due to rounding. Here is a key to the data needed to complete the worksheet:

Performance Level	Points Multiplier	2009-10			2010-11			2011-12		
		Students		Points	Students		Points	Students		Points
		Count	Percent		Count	Percent		Count	Percent	
Advanced	1.5	A 22	16.3%	33	D 22	17.2%	33	G 21	16.9%	31.5
Proficient	1	B 35	25.9%	35	E 34	26.6%	34	H 41	33.1%	41
Basic	0.5	C 37	27.4%	18.5	F 38	29.7%	19	I 33	26.6%	16.5
Minimal Performance/ Not Tested	0	41	30.4%	0	34	26.6%	0	29	23.4%	0
Total Enrolled	-	J 135	100.0%	86.5	K 128	100.0%	86	L 124	100.0%	89

Letters shown on the key are used to help identify data on the worksheet. Note: Although the key shows an example for reading achievement, the same components are used in the calculation for mathematics achievement as well.

Instructions

Work through the individual reading and mathematics worksheets step by step, entering data from the school report card where appropriate. When both are complete, add both subject scores to determine the school's total Student Achievement score:

Reading Achievement Score: _____ out of 50 points

Mathematics Achievement Score: + _____ out of 50 points

Total Student Achievement Score: _____ out of 100 points

Reading Achievement Worksheet

Step 1: Assign and Total Points

Prior Year Two Points

(1a) Advanced students (A)	<input type="text"/>	$\times 1.5 =$	<input type="text"/>	1a
(1b) Proficient students (B)	<input type="text"/>	$\times 1 =$	<input type="text"/>	1b
(1c) Basic students (C)	<input type="text"/>	$\times 0.5 =$	<input type="text"/>	1c
Total points: (1d) Add boxes 1a through 1c				<input type="text"/>

Prior Year Points

(1e) Advanced students (D)	<input type="text"/>	$\times 1.5 =$	<input type="text"/>	1e
(1f) Proficient students (E)	<input type="text"/>	$\times 1 =$	<input type="text"/>	1f
(1g) Basic students (F)	<input type="text"/>	$\times 0.5 =$	<input type="text"/>	1g
Total points: (1h) Add boxes 1e through 1g				<input type="text"/>

Current Year Points

(1i) Advanced students (G)	<input type="text"/>	$\times 1.5 =$	<input type="text"/>	1i
(1j) Proficient students (H)	<input type="text"/>	$\times 1 =$	<input type="text"/>	1j
(1k) Basic students (I)	<input type="text"/>	$\times 0.5 =$	<input type="text"/>	1k
Total points: (1l) Add boxes 1i through 1k				<input type="text"/>

Step 2: Determine Average Points by Enrollment

Average Enrollment

(2a) Enrollment in prior year two (J)	<input type="text"/>	2a
(2b) Enrollment in prior year one (K)	<input type="text"/>	2b
(2c) Enrollment in current year (L)	<input type="text"/>	2c
(2d) Add boxes 2a through 2c	<input type="text"/>	
Average Enrollment: (2e) Divide box 2d by 3	<input type="text"/>	

Prior Year Two Average

(2f) Enter total points from box 1d	<input type="text"/>	2f
(2g) Enter average enrollment from box 2e	<input type="text"/>	2g
Prior Year Two Average: (2h) Divide box 2f by box 2g	<input type="text"/>	

Prior Year One Adjusted Points

(2i) Enter total points from box 1h	<input type="text"/>	2i
(2j) Enter average enrollment from box 2e	<input type="text"/>	2j
Prior Year One Average: (2k) Divide box 2i by box 2j	<input type="text"/>	

Current Year Adjusted Points

(2l) Enter total points from box 1l	<input type="text"/>	2l
(2m) Enter average enrollment from box 2e	<input type="text"/>	2m
Current Year Average: (2n) Divide box 2l by box 2m	<input type="text"/>	

Step 3: Weight Averages by Year

If all three years of data are available:

- (3a) Enter prior year two average from box 2h
- (3b) Enter prior year one average from box 2k
- (3c) Enter current year average from box 2n

	$\times 1.5 =$	3a	
	$\times 1.25 =$	3b	
	$\times 1 =$	3c	
(3d) Add boxes 3a through 3c			3d
(3e) Divide box 3d by 3.75			3e

If only two years of data are available:

- (3f) Enter prior year one average from box 2k
- (3g) Enter current year average from box 2n

	$\times 1.5 =$	3f	
	$\times 1 =$	3g	
(3h) Add boxes 3f and 3g			3h
(3i) Divide box 3h by 2.5			3i

If only one year of data is available:

- (3j) Enter current year average from box 2n

	$\times 1 =$	3j
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Step 4: Put Score on a 50-Point Scale

- (4a) Enter whichever of boxes 3e, 3i, or 3j contains a value

4a

- (4b) Is box 4a greater than 1?

4b Yes No

- (4c) If box 4b is "Yes," enter 1; if "No," enter the value in box 4a

4c

- Reading Achievement Score: (4d) Multiply box 4c by 50

4d

Mathematics Achievement Worksheet

Step 1: Assign and Total Points

Prior Year Two Points

- (1a) Advanced students (A)
- (1b) Proficient students (B)
- (1c) Basic students (C)

	$\times 1.5 =$	1a	
	$\times 1 =$	1b	
	$\times 0.5 =$	1c	
Total points: (1d) Add boxes 1a through 1c			1d

Prior Year Points

- (1e) Advanced students (D)
- (1f) Proficient students (E)
- (1g) Basic students (F)

	$\times 1.5 =$	1e	
	$\times 1 =$	1f	
	$\times 0.5 =$	1g	
Total points: (1h) Add boxes 1e through 1g			1h

Current Year Points

- (1i) Advanced students (G)
- (1j) Proficient students (H)
- (1k) Basic students (I)

	$\times 1.5 =$	1i	
	$\times 1 =$	1j	
	$\times 0.5 =$	1k	
Total points: (1l) Add boxes 1i through 1k			1l

Step 2: Determine Average Points by Enrollment

Average Enrollment

(2a) Enrollment in prior year two (J)	2a	
(2b) Enrollment in prior year one (K)	2b	
(2c) Enrollment in current year (L)	2c	
(2d) Add boxes 2a through 2c		2d
Average Enrollment: (2e) Divide box 2d by 3		2e

Prior Year Two Average

(2f) Enter total points from box 1d	2f	
(2g) Enter average enrollment from box 2e	2g	
Prior Year Two Average: (2h) Divide box 2f by box 2g		2h

Prior Year One Adjusted Points

(2i) Enter total points from box 1h	2i	
(2j) Enter average enrollment from box 2e	2j	
Prior Year One Average: (2k) Divide box 2i by box 2j		2k

Current Year Adjusted Points

(2l) Enter total points from box 1l	2l	
(2m) Enter average enrollment from box 2e	2m	
Current Year Average: (2n) Divide box 2l by box 2m		2n

Step 3: Weight Averages by Year

If all three years of data are available:

(3a) Enter prior year two average from box 2h		$\times 1.5 =$	3a
(3b) Enter prior year one average from box 2k		$\times 1.25 =$	3b
(3c) Enter current year average from box 2n		$\times 1 =$	3c
(3d) Add boxes 3a through 3c			3d
(3e) Divide box 3d by 3.75			3e

If only two years of data are available:

(3f) Enter prior year one average from box 2k		$\times 1.5 =$	3f
(3g) Enter current year average from box 2n		$\times 1 =$	3g
(3h) Add boxes 3f and 3g			3h
(3i) Divide box 3h by 2.5			3i

If only one year of data is available:

(3j) Enter current year average from box 2n		$\times 1 =$	3j
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Step 4: Put Score on a 50-Point Scale

(4a) Enter whichever of boxes 3e, 3i, or 3j contains a value	4a
(4b) Is box 4a greater than 1?	4b <input type="checkbox"/> Yes <input type="checkbox"/> No
(4c) If box 4b is "Yes," enter 1; if "No," enter the value in box 4a	4c
Mathematics Achievement Score: (4d) Multiply box 4c by 50	4d

Calculating a Student Growth Score

The Student Growth priority area uses a measurement tool to evaluate schools on **student progress toward higher achievement levels** and **student decline below proficiency**. This tool allows us to set growth targets for nearly every student in Wisconsin and compare their actual growth to those targets. This measure is designed so that students farthest behind their peers can earn the most credit by making high levels of growth, and schools are not penalized for high levels of achievement.

Background

At the foundation of the Student Growth score is a growth measure called **Student Growth Percentiles (SGPs)**. While the mathematics behind SGPs are complex, the concept is fairly straightforward. When we look at one student's WKCE scores over time, we find many other students with similar scores over time and compare his or her performance to those peers. An SGP is a percentile rank that **characterizes one student's change in WKCE scores from last year to this year, compared to other students with similar score histories**. SGPs allow us to describe an individual student's growth across the full range of achievement levels, rather than focusing on growth to one specific level. Wisconsin schools already use student reports that describe past growth and the range of expected growth in the next year.

SGPs also allow us to **project student growth over time to specific achievement levels**. For example, we can project the SGP a student would need to grow to the Advanced level within the next three years, and then compare the actual SGP to that projection. In the Student Growth measure used in the report card projections to the Basic, Proficient, and Advanced levels. (This projection is different than what has been shown on student-level SGP reports.) For every student with growth data, a growth trajectory is set for each level based on the lowest of its projections over one, two, or three years—the trajectory describes the growth each student needs to grow to that level within three years. We **compare each student's SGP to their achievement level trajectories** and then **combine those comparisons** for all the students in a school with growth data.

Reading the Report Card

The four-by-four grids shown in the Student Growth detail summarize all of the SGP-to-trajectory comparisons for students in a school. Consider the following data on reading growth for a sample school, which we will use throughout the walkthrough:

Sample Elementary – Reading Growth

Reading Growth Score is based on the 172 students tested in fall 2010 with data for growth to fall 2011.

Starting Level		Growth/Decline Trajectory			
		Min. Perf.	Basic	Proficient	Advanced
Minimal Performance	33	10	16	6	1
	19.2%	5.8%	9.3%	3.5%	0.6%
Basic	66	6	46	11	3
	38.4%	3.5%	26.7%	6.4%	1.7%
Proficient	60	<i>1</i>	<i>16</i>	34	9
	34.9%	<i>0.6%</i>	<i>9.3%</i>	19.8%	5.2%
Advanced	13	<i>0</i>	<i>0</i>	7	6
	7.6%	<i>0.0%</i>	<i>0.0%</i>	4.1%	3.5%

The introductory note tells us there are 172 students at Sample Elementary with WKCE growth data from fall 2010 to fall 2011 to calculate SGPs and achievement trajectories over the next three years. On the left, under “Starting Level,” those students are grouped by their fall 2010 achievement level. To the right, they are grouped further based on whether or not they met the achievement trajectory for a particular level (or under Minimal Performance, whether they fell below the Basic trajectory).

Example (shown with the bold border): 66 students started at the Basic level in fall 2010. Of those, 11 met the Proficient trajectory (but did not meet the Advanced trajectory).

The layout of the table reflects how these comparisons are used to calculate a school’s Student Growth score. The green/bold highlighted cells show students whose growth put them on a trajectory toward a higher achievement level, and the red/italic highlighted cells show those whose decline put them on a trajectory below Proficient.

Walkthrough

This walkthrough guides the user through determination of a growth score in a single subject, reading, for Sample Elementary. To determine an overall Student Growth score, the process is repeated for mathematics and the two subject scores are added.

Step 1: Assign Growth and Decline Points

The first step is to assign points for each student's SGP-to-trajectory comparison. We use two basic principles to assign points:

1. Students earn +1 point for each level they are on a trajectory to grow toward.
2. Students earn -1 point if they are on a trajectory to decline below Proficient.

These principles can be combined to create a value table showing how many points a student can earn for each combination of starting level and trajectory met:

Starting Level	Growth/Decline Trajectory			
	Min. Perf.	Basic	Proficient	Advanced
Min Perf	0	+1	+2	+3
Basic	0	0	+1	+2
Proficient	-1	-1	0	+1
Advanced	-1	-1	0	0

By applying the value table to our sample school's report card data, we can figure out how many points students earned:

Starting Level		Growth/Decline Trajectory			
		Min. Perf.	Basic	Proficient	Advanced
Minimal Performance	33 students	10 students	16 students	6 students	1 student
		0 points	+16 points	+12 points	+3 points
Basic	66 students	6 students	46 students	11 students	3 students
		0 points	0 points	+11 points	+6 points
Proficient	60 students	<i>1 student</i>	<i>16 students</i>	34 students	9 students
		<i>-1 point</i>	<i>-16 points</i>	0 points	+9 points
Advanced	13 students	<i>0 students</i>	<i>0 students</i>	7 students	6 students
		<i>0 points</i>	<i>0 points</i>	0 points	0 points

Total Growth Points: +57 points	<i>Total Decline Points: -17 points</i>
--	---

Step 2: Calculate Growth and Decline Factors

One thing to note about step 1 is that because of the way we look at student growth, certain students cannot earn points depending on their starting level—Advanced students cannot earn positive growth points since there is no higher performance level to grow to, and Minimal Performance or Basic students cannot earn negative decline points since they are already below proficient. We incorporate Advanced students into growth and Minimal Performance or Basic students into decline by calculating **growth and decline factors**, values that represent the average numbers of points earned by students who can earn points, scaled by the percentages of students who cannot.

Definitions

Note: Within definitions, an achievement level (Minimal Performance, Basic, Proficient, or Advanced) refers to the starting level in the growth detail table, not the trajectory.

$$\text{Average Growth Points} = \frac{\text{Total Growth Points}}{\text{Number Min. Perf.} + \text{Number Basic} + \text{Number Proficient}}$$

$$\text{Percent Advanced} = \frac{\text{Number Advanced}}{\text{Total Students with Growth Data}}$$

$$\text{Average Decline Points} = \frac{\text{Total Decline Points}}{\text{Number Proficient} + \text{Number Advanced}}$$

$$\text{Percent Min. Perf. or Basic} = \frac{\text{Number Min. Perf.} + \text{Number Basic}}{\text{Total Students with Growth Data}}$$

Formulas

$$\text{Growth Factor} = \text{Average Growth Points} + \text{Percent Advanced} \\ - (\text{Average Growth Points} \times \text{Percent Advanced})$$

$$\text{Decline Factor} = \text{Average Decline Points} \\ - (\text{Average Decline Points} \times \text{Percent Min. Perf. or Basic})$$

Note: The formulas are set up this way so that a school with all Advanced students receives full credit for growth (Growth Factor = 1) and a school with all Minimal Performance or Basic students receives no penalty for decline (Decline Factor = 0).

Calculation

$$\begin{aligned} \text{Average Growth Points} &= \frac{+57 \text{ points}}{33 \text{ Min. Perf. students} + 66 \text{ Basic students} + 60 \text{ Proficient students}} \\ &= 0.358 \end{aligned}$$

$$\text{Percent Advanced} = \frac{13 \text{ Advanced students}}{172 \text{ total students}} = 0.076$$

$$\text{Growth Factor} = 0.358 + 0.076 - (0.358 \times 0.076) = \mathbf{0.407}$$

$$\text{Average Decline Points} = \frac{-17 \text{ points}}{60 \text{ Proficient students} + 13 \text{ Advanced students}} = -0.233$$

$$\text{Percent Min. Perf. or Basic} = \frac{33 \text{ Min. Perf. students} + 66 \text{ Basic students}}{172 \text{ total students}} = 0.576$$

$$\text{Decline Factor} = -0.233 - (-0.233 \times 0.576) = \mathbf{-0.099}$$

Step 3: Combine Growth and Decline Factors into Total Factor

Once the growth and decline factors have been calculated, they are combined into a single value, the **total factor**. The basic formula for the total factor is:

$$\text{Total Factor} = \text{Growth Factor} + \text{Decline Factor} + 0.5$$

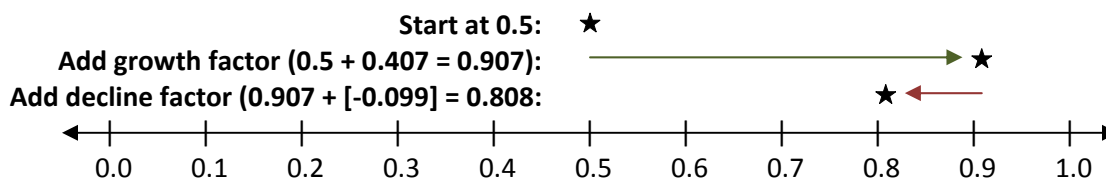
Why add the growth and decline factors to 0.5? The reason is to create a value like a rate that we can use to determine a score. This makes more sense if we illustrate the calculation for our sample school:

$$\text{Total Factor} = 0.407 + (-0.099) + 0.5 = \mathbf{0.808}$$

The total factor formula puts the school on a range between zero and one. A total factor of 0.5 represents a school where student growth and decline are balanced. As the total factor moves away from 0.5 it shows that either growth or decline is more predominant:



We can show the total factor calculation on this number line:



A total factor of 0.808 shows that our sample school has quite a bit more growth than decline.

The basic equation above can give a value for the total factor of less than zero or greater than one. Therefore, we add two conditions that restrict the final value to a zero-to-one range:

If Growth Factor + Decline Factor + 0.5 < 0, then Total Factor = 0

If Growth Factor + Decline Factor + 0.5 > 1, then Total Factor = 1

Otherwise, Total Factor = Growth Factor + Decline Factor + 0.5

Step 4: Calculate a 75% Confidence Interval

As with any measure, there is some statistical uncertainty in the calculation of a Student Growth score. One way to address this uncertainty is to calculate a **confidence interval**, a value that expresses how the number of students in our measure creates uncertainty—fewer students leads to more uncertainty. Calculating a confidence interval can be tricky because it does not work well with values close to zero or one, or for very small numbers of students. Using a confidence interval is a necessary statistical safeguard, but it adds a layer of complexity to the calculation.

N and P

A rule of thumb for confidence intervals is that the product of N (the number of items in a sample—in this case, the number of students) and P (the percentage or rate calculated) should be at least 5, and the product of N and $(1 - P)$ should also be at least 5. When either of these products is less than 5 we substitute a new value of P that meets the rule of thumb.

Example 1: $N = 20$; $P = 0.6$. $N \times P = 20 \times 0.6 = \mathbf{12}$; $N \times (1 - P) = 20 \times 0.4 = \mathbf{8}$.
We're OK!

Example 2: $N = 20$; $P = 0.1$. $N \times P = 20 \times 0.1 = \mathbf{2}$; $N \times (1 - P) = 20 \times 0.9 = \mathbf{18}$.
Fails the $N \times P$ test! Solution: $P_{New} = 5/N = 5/20 = \mathbf{0.25}$.

Example 3: $N = 20$; $P = 0.8$. $N \times P = 20 \times 0.8 = \mathbf{16}$; $N \times (1 - P) = 20 \times 0.2 = \mathbf{4}$.
Fails the $N \times (1 - P)$ test! Solution: $P_{New} = 1 - (5/N) = 1 - (5/20) = \mathbf{0.75}$.

Definitions

N = Total number of students with growth data

TF = Total Factor determined in previous step

Total Factor-CI = Total Factor used in confidence interval calculation:

If $N \times TF \geq 5$ and $N \times (1 - TF) \geq 5$, then Total Factor-CI = TF

If $N \times TF < 5$, then Total Factor-CI = $5/N$

If $N \times (1 - TF) < 5$, then Total Factor-CI = $1 - (5/N)$

Formula

$$\text{Confidence Interval} = 1.15 \times \sqrt{\frac{\text{Total Factor-CI} \times (1 - \text{Total Factor-CI})}{\text{Total number of students with growth data}}}$$

Calculation

$$N = 172; TF = 0.808$$

$$N \times TF = 172 \times 0.808 = 139; N \times (1 - TF) = 172 \times 0.192 = 33$$

Passes both tests, so Total Factor-CI = $TF = 0.808$

$$\text{Confidence Interval} = 1.15 \times \sqrt{\frac{0.808 \times 0.192}{172}} = \mathbf{0.035}$$

Note: A confidence interval is a value that is added or subtracted to create a range. In this example, the confidence interval means we are reasonably confident that the true growth score for these 172 students falls within a range from 0.773 to 0.843 (0.808 ± 0.035). As we will see in the next step, the top of this range—the most generous value we can reliably determine for the school—is used to determine the growth score.

Step 5: Determine the Student Growth Score

Now that we have the total factor and the 75 percent confidence interval, we can determine this school's Student Growth score in reading. The formula is complex in order to put Student Growth scores on a similar scale as Student Achievement. Like the WKCE, the new school accountability system includes different kinds of data, different scores that carry different meanings, and it is necessary to align components like Student Growth to a common scale.

Formula

$$\text{Growth Score} = ((\text{Total Factor} + \text{Confidence Interval}) \times 1.01] - 0.16) \times 50$$

Note: Adding the confidence interval to the total factor gives the highest reasonable value for growth within the 75 percent confidence interval. 1.01 and 0.16 are numbers that align Student Growth to the common scale based on Student Achievement scores. 50 sets the subject growth score out of 50 points.

Calculation

$$\text{Growth Score} = (((0.808 + 0.035) \times 1.01] - 0.16) \times 50 = \mathbf{34.6}$$

Sample Elementary's Student Growth score in reading is 34.6.

Student Growth Score Worksheet

Introduction

This worksheet has two parts, one for reading and one for mathematics. Both parts require you to copy data from the Student Growth detail of the Technical Report Card. Be sure to **use the counts, not the percentages**. Note that the score calculated here may not exactly match the report card due to **rounding**. Here is a key to the data needed to complete the worksheet:

Sample Elementary – Reading Growth

Reading Growth Score is based on **A** 172 students tested in fall 2010 with data for growth to fall 2011.

Starting Level	Growth/Decline Trajectory				
	Min. Perf.	Basic	Proficient	Advanced	
Minimal Performance	B 33	10	F 16	G 6	H 1
	19.2%	5.8%	9.3%	3.5%	0.6%
Basic	C 66	6	46	I 11	J 3
	38.4%	3.5%	26.7%	6.4%	1.7%
Proficient	D 60	L 1	M 16	34	K 9
	34.9%	0.6%	9.3%	19.8%	5.2%
Advanced	E 13	N 0	O 0	7	6
	7.6%	0.0%	0.0%	4.1%	3.5%

Letters shown on the key are used to help identify data on the worksheet. Note: Although the key shows an example for reading growth, the same components are used for mathematics growth as well.

Instructions

Work through the individual reading and mathematics worksheets step by step, entering data from the Technical Report Card where appropriate. When both are complete, add both content area scores to determine the school's total Student Growth score:

Reading Growth Score: _____ out of 50 points

Mathematics Growth Score: + _____ out of 50 points

Total Student Growth Score: _____ out of 100 points

Reading Growth Score

Step 1: Assign Growth and Decline Points

Growth Points

(1a) Min. Perf. toward Advanced students (H)	<input type="text"/>	$\times 3 =$	<input type="text"/>	1a
(1b) Min. Perf. toward Proficient students (G)	<input type="text"/>	$\times 2 =$	<input type="text"/>	1b
(1c) Basic toward Advanced students (J)	<input type="text"/>	$\times 2 =$	<input type="text"/>	1c
(1d) Min. Perf. toward Basic students (F)	<input type="text"/>	$\times 1 =$	<input type="text"/>	1d
(1e) Basic toward Proficient students (I)	<input type="text"/>	$\times 1 =$	<input type="text"/>	1e
(1f) Proficient toward Advanced students (K)	<input type="text"/>	$\times 1 =$	<input type="text"/>	1f
Total Growth Points: (1g) Add boxes 1a through 1f				<input type="text"/>

Decline Points

(1h) Proficient toward Min. Perf. students (L)	<input type="text"/>	$\times -1 =$	<input type="text"/>	1h
(1i) Proficient toward Basic students (M)	<input type="text"/>	$\times -1 =$	<input type="text"/>	1i
(1j) Advanced toward Min. Perf. students (N)	<input type="text"/>	$\times -1 =$	<input type="text"/>	1j
(1k) Advanced toward Basic students (O)	<input type="text"/>	$\times -1 =$	<input type="text"/>	1k
Total Decline Points: (1l) Add boxes 1h through 1k (will be a negative number)				<input type="text"/>

Step 2: Calculate Growth and Decline Factors

Growth Factor

(2a) Number of Min. Perf. students (B)	<input type="text"/>	2a
(2b) Number of Basic students (C)	<input type="text"/>	2b
(2c) Number of Proficient students (D)	<input type="text"/>	2c
(2d) Enter Total Growth Points from box 1g	<input type="text"/>	2d
(2e) Add boxes 2a through 2c	<input type="text"/>	2e
Average Growth Points: (2f) Box 2d \div box 2e		<input type="text"/>
(2g) Number of Advanced students (E)	<input type="text"/>	2g
(2h) Total students with growth data (A)	<input type="text"/>	2h
Percent Advanced: (2i) Box 2g \div box 2h		<input type="text"/>
Growth Factor: (2j) Box 2f + box 2i - (box 2f \times box 2i)		<input type="text"/>

Decline Factor

(2k) Number of Proficient students (D)	<input type="text"/>	2k
(2l) Number of Advanced students (E)	<input type="text"/>	2l
(2m) Enter Total Decline Points from box 1l	<input type="text"/>	2m
(2n) Add boxes 2k and 2l	<input type="text"/>	2n
Average Decline Points: (2o) Box 2m \div box 2n (will be a negative number)		<input type="text"/>
(2p) Number of Min. Perf. students (B)	<input type="text"/>	2p
(2q) Number of Basic students (C)	<input type="text"/>	2q
(2r) Add boxes 2p and 2q	<input type="text"/>	2r
(2s) Total students with growth data (A)	<input type="text"/>	2s
Percent Min. Perf. or Basic: (2t) Box 2r \div box 2s		<input type="text"/>
Decline Factor: (2u) Box 2o - (box 2o \times box 2t) (will be a negative number)		<input type="text"/>

Step 3: Combine Growth and Decline Factors into Total Factor

(3a) Enter Growth Factor from box 2j	3a	
(3b) Enter Decline Factor from box 2u	3b	
(3c) Box 3a + box 3b + 0.5	3c	
(3d) Is box 3c less than zero?	3d	<input type="checkbox"/> Yes <input type="checkbox"/> No
(3e) If 3d is 'Yes,' enter 0	3e	
(3f) Is box 3c greater than one?	3f	<input type="checkbox"/> Yes <input type="checkbox"/> No
(3g) If box 3f is 'Yes,' enter 1	3g	
(3h) If boxes 3d and 3f are 'No,' enter box 3c	3h	
Total Factor: (3i) Enter whichever one of boxes 3e, 3g, or 3h contains a value		3i

Step 4: Calculate a 75% Confidence Interval

(4a) Total students with growth data (A)	4a	
(4b) Enter Total Factor from box 3c	4b	
(4c) Multiply box 4a by box 4b	4c	
(4d) Is box 4c less than 5?	4d	<input type="checkbox"/> Yes <input type="checkbox"/> No
(4e) If 4d is 'Yes,' enter $5 \div \text{box 4a}$	4e	
(4f) Enter 1 minus box 4b	4f	
(4g) Multiply box 4a by box 4f	4g	
(4h) Is box 4g less than 5?	4h	<input type="checkbox"/> Yes <input type="checkbox"/> No
(4i) If 4h is 'Yes,' enter $5 \div \text{box 4f}$	4i	
(4j) If both 4d and 4h are 'No,' enter Total Factor from box 3c	4j	
(4k) Enter whichever one of boxes 4e, 4i, or 4j contains a value	4k	
(4l) Enter 1 minus box 4k	4l	
(4m) Multiply box 4k by box 4l	4m	
(4n) Divide box 4m by box 4a	4n	
(4o) Take the square root of box 4n	4o	
Confidence Interval: (4p) Multiply box 4o by 1.15		4p

Step 5: Determine the Reading Growth Score

(5a) Enter the Total Factor from box 3c	5a	
(5b) Enter the Confidence Interval from box 4p	5b	
(5c) Add boxes 5a and 5b	5c	
(5d) Multiply box 5c by 1.01	5d	
(5e) Enter box 5d minus 0.16	5e	
Reading Growth Score: (5f) Multiply box 5e by 50		5f

Mathematics Growth Score

Step 1: Assign Growth and Decline Points

Growth Points

(1a) Min. Perf. toward Advanced students (H)	<input type="text"/>	$\times 3 =$	<input type="text"/>	1a
(1b) Min. Perf. toward Proficient students (G)	<input type="text"/>	$\times 2 =$	<input type="text"/>	1b
(1c) Basic toward Advanced students (J)	<input type="text"/>	$\times 2 =$	<input type="text"/>	1c
(1d) Min. Perf. toward Basic students (F)	<input type="text"/>	$\times 1 =$	<input type="text"/>	1d
(1e) Basic toward Proficient students (I)	<input type="text"/>	$\times 1 =$	<input type="text"/>	1e
(1f) Proficient toward Advanced students (K)	<input type="text"/>	$\times 1 =$	<input type="text"/>	1f
Total Growth Points: (1g) Add boxes 1a through 1f				<input type="text"/>

Decline Points

(1h) Proficient toward Min. Perf. students (L)	<input type="text"/>	$\times -1 =$	<input type="text"/>	1h
(1i) Proficient toward Basic students (M)	<input type="text"/>	$\times -1 =$	<input type="text"/>	1i
(1j) Advanced toward Min. Perf. students (N)	<input type="text"/>	$\times -1 =$	<input type="text"/>	1j
(1k) Advanced toward Basic students (O)	<input type="text"/>	$\times -1 =$	<input type="text"/>	1k
Total Decline Points: (1l) Add boxes 1h through 1k (will be a negative number)				<input type="text"/>

Step 2: Calculate Growth and Decline Factors

Growth Factor

(2a) Number of Min. Perf. students (B)	<input type="text"/>	2a
(2b) Number of Basic students (C)	<input type="text"/>	2b
(2c) Number of Proficient students (D)	<input type="text"/>	2c
(2d) Enter Total Growth Points from box 1g	<input type="text"/>	2d
(2e) Add boxes 2a through 2c	<input type="text"/>	2e
Average Growth Points: (2f) Box 2d \div box 2e		<input type="text"/>
(2g) Number of Advanced students (E)	<input type="text"/>	2g
(2h) Total students with growth data (A)	<input type="text"/>	2h
Percent Advanced: (2i) Box 2g \div box 2h		<input type="text"/>
Growth Factor: (2j) Box 2f + box 2i - (box 2f \times box 2i)		<input type="text"/>

Decline Factor

(2k) Number of Proficient students (D)	<input type="text"/>	2k
(2l) Number of Advanced students (E)	<input type="text"/>	2l
(2m) Enter Total Decline Points from box 1l	<input type="text"/>	2m
(2n) Add boxes 2k and 2l	<input type="text"/>	2n
Average Decline Points: (2o) Box 2m \div box 2n (will be a negative number)		<input type="text"/>
(2p) Number of Min. Perf. students (B)	<input type="text"/>	2p
(2q) Number of Basic students (C)	<input type="text"/>	2q
(2r) Add boxes 2p and 2q	<input type="text"/>	2r
(2s) Total students with growth data (A)	<input type="text"/>	2s
Percent Min. Perf. or Basic: (2t) Box 2r \div box 2s		<input type="text"/>
Decline Factor: (2u) Box 2o - (box 2o \times box 2t) (will be a negative number)		<input type="text"/>

Step 3: Combine Growth and Decline Factors into Total Factor

(3a) Enter Growth Factor from box 2j	3a	
(3b) Enter Decline Factor from box 2u	3b	
(3c) Box 3a + box 3b + 0.5	3c	
(3d) Is box 3c less than zero?	3d	<input type="checkbox"/> Yes <input type="checkbox"/> No
(3e) If 3d is 'Yes,' enter 0	3e	
(3f) Is box 3c greater than one?	3f	<input type="checkbox"/> Yes <input type="checkbox"/> No
(3g) If box 3f is 'Yes,' enter 1	3g	
(3h) If boxes 3d and 3f are 'No,' enter box 3c	3h	
Total Factor: (3i) Enter whichever one of boxes 3e, 3g, or 3h contains a value		3i

Step 4: Calculate a 75% Confidence Interval

(4a) Total students with growth data (A)	4a	
(4b) Enter Total Factor from box 3c	4b	
(4c) Multiply box 4a by box 4b	4c	
(4d) Is box 4c less than 5?	4d	<input type="checkbox"/> Yes <input type="checkbox"/> No
(4e) If 4d is 'Yes,' enter $5 \div \text{box 4a}$	4e	
(4f) Enter 1 minus box 4b	4f	
(4g) Multiply box 4a by box 4f	4g	
(4h) Is box 4g less than 5?	4h	<input type="checkbox"/> Yes <input type="checkbox"/> No
(4i) If 4h is 'Yes,' enter $5 \div \text{box 4f}$	4i	
(4j) If both 4d and 4h are 'No,' enter Total Factor from box 3c	4j	
(4k) Enter whichever one of boxes 4e, 4i, or 4j contains a value	4k	
(4l) Enter 1 minus box 4k	4l	
(4m) Multiply box 4k by box 4l	4m	
(4n) Divide box 4m by box 4a	4n	
(4o) Take the square root of box 4n	4o	
Confidence Interval: (4p) Multiply box 4o by 1.15		4p

Step 5: Determine the Mathematics Growth Score

(5a) Enter the Total Factor from box 3c	5a	
(5b) Enter the Confidence Interval from box 4p	5b	
(5c) Add boxes 5a and 5b	5c	
(5d) Multiply box 5c by 1.01	5d	
(5e) Enter box 5d minus 0.16	5e	
Mathematics Growth Score: (5f) Multiply box 5e by 50		5f

Calculating a Closing Gaps Score

The Closing Gaps priority area evaluates schools based on the **change in student achievement and graduation from one year to the next among key student groups**. It focuses on the groups that experience statewide achievement gaps, rewarding schools for improving performance and penalizing them for reducing the performance of comparison groups.

Background

Wisconsin has a number of specific and significant gaps in reading and mathematics achievement and high school graduation. The Closing Gaps priority area is designed to **look at improvement among particular student groups** in a way that **rewards schools for contributing toward closing our achievement gaps**. We evaluate schools' progress in closing achievement gaps using the same measure as in the Student Achievement priority area, and in closing graduation gaps using the high school cohort graduation rate. Each "gaps" group is contrasted with a **comparison group** which is factored in **only as a penalty when the comparison group's performance declines**. The student "gaps" groups and comparison groups that are included in Closing Gaps scores are:

"Gaps" Group	Comparison Group
American Indian	White not Hispanic
Asian	White not Hispanic
Black not Hispanic	White not Hispanic
Hispanic	White not Hispanic
Students with disabilities	Students without disabilities
Economically disadvantaged	Not economically disadvantaged
Limited English proficient	English proficient
Supergroup*	Not in supergroup*

We do not evaluate how the size of each gap changes over time, because that would not allow us to focus on improvement among these particular student groups. (We do report five year change in gaps in the School Report Card for all of the above groups, except the supergroup.) If we simply looked at whether gaps were closing, a school with declining comparison groups would get as good a score as a school with improving "gaps" groups.

* A **"supergroup"** is a **group of students belonging to one or more of the binary groups** (students with disabilities, economically disadvantaged, or limited English proficient). We use a supergroup only when individual groups do not have enough students to be considered in a school's Closing Gaps score, but when combined into the supergroup, they do. For example, in a school with 14 students with disabilities and 16 economically disadvantaged students, there are too few students in either group to be considered in Closing Gaps. However, if there are 25 students in the "students with disabilities/economically disadvantaged" supergroup (9 with disabilities, 11 economically disadvantaged, and 5 in both groups) then we can consider all of those students together in the supergroup.

Reading the Report Card

All of the Closing Gaps measures are based on comparisons between specific groups of students and their peers:

- For racial/ethnic groups we compare each of American Indian, Asian, Black, and Hispanic students to White students.
- For binary groups (those where a student either is or is not a member: students with disabilities, economically disadvantaged students, and limited English proficient students) we compare the students within the group to those outside it.
- For supergroups (groups with students who belong to two or three supergroups, used only when those individual groups do not have enough students for comparison but the supergroup does) we compare the students within the supergroup to those outside it.

In every case, **both the group and the comparison group need to have enough students to make a comparison.** DPI uses 20 throughout the Wisconsin school accountability system as the minimum number required. Asterisks show that there are not enough students for a particular comparison.

The Closing Gaps data in the Technical Report Card includes summary tables for Closing Achievement Gaps (one for reading and one for mathematics) and Closing Graduation Gaps. The layout of all three tables is the same, but the data are slightly different. Consider the following table showing Sample Elementary's performance in closing mathematics achievement gaps:

**Sample Elementary
Closing Achievement Gaps – Mathematics | Score 39.4/50**

Group	2010-11					2011-12					Gap		
	2010-11		2011-12		Change	2010-11		2011-12		Change	Prior Year	Current Year	
	Students	Achievement Points	Students	Achievement Points		Students	Achievement Points	Students	Achievement Points				
American Indian or Alaskan Native	*	*	*	*	*	White not Hispanic	*	*	*	*	*	*	
Asian or Pacific Islander	28	13.5	30	17.3	3.8	White not Hispanic	107	34.3	112	35.8	1.4	20.8	18.4
Black not Hispanic	*	*	*	*	*	White not Hispanic	*	*	*	*	*	*	*
Hispanic	*	*	*	*	*	White not Hispanic	*	*	*	*	*	*	*
Students with Disabilities	41	20.8	40	21.8	1	Students without Disabilities	115	33.4	124	34.5	1.1	12.6	12.7
Economically Disadvantaged	64	23.4	71	25.1	1.7	Not Economically Disadvantaged	91	34.8	93	36.4	1.6	11.4	11.3
Limited English Proficient	*	*	*	*	*	English Proficient	*	*	*	*	*	*	*
"All 3" Supergroup	*	*	*	*	*	Not in "All 3" Supergroup	*	*	*	*	*	*	*
"SwD-ECD" Supergroup	*	*	*	*	*	Not in "SwD-ECD" Supergroup	*	*	*	*	*	*	*
"SwD-LEP" Supergroup	*	*	*	*	*	Not in "SwD-LEP" Supergroup	*	*	*	*	*	*	*
"ECD-LEP" Supergroup	*	*	*	*	*	Not in "ECD-LEP" Supergroup	*	*	*	*	*	*	*

The table includes five columns each for every group and comparison group. Columns headed with the prior (2010-11) and current (2011-12) school years show:

- “Students” – How many students from this group had achievement data.
- “Achievement Points” – How many achievement points those students earned, on a scale from zero to 50. (Achievement points are calculated the same way as they are for all students in the “Student Achievement” area of the accountability index.)

The “Change” column shows **the change in achievement points** from the prior to the current year.

Finally, the table includes a pair of “Gap” columns at the end, showing the differences in achievement points between the group and the comparison group in the prior and current years. (A positive number means that there is a gap, that the group scored lower than the comparison; a negative number shows that the group scored higher than the comparison.)

Example (highlighted in yellow): Last year, students with disabilities earned 20.8 achievement points; this year they earned 21.8 points, an increase of 1 point. By comparison, students without disabilities earned 33.4 points last year and 34.5 points this year, an increase of 1.1 points. Both groups increased but the gap between them—the number of points that students with disabilities are behind students without disabilities—grew slightly, from 12.6 points to 12.7 points.

The Closing Graduation Gaps table has the same layout, but instead of achievement points it shows graduation rates and gaps:

Sample High
Closing Graduation Gaps | Score 32.7/50

Group	2009-10		2010-11		Change	Comparison Group	2009-10		2010-11		Change	Gap	
	Students	Graduation Rate	Students	Graduation Rate			Students	Graduation Rate	Students	Graduation Rate		Prior Year	Current Year
American Indian or Alaskan Native	35	97.1%	42	90.5%	-6.7%	White not Hispanic	436	95.2%	402	92.5%	-2.6%	-2.0%	2.1%
Asian or Pacific Islander	*	*	*	*	*	White not Hispanic	*	*	*	*	*	*	*
Black not Hispanic	*	*	*	*	*	White not Hispanic	*	*	*	*	*	*	*
Hispanic	*	*	*	*	*	White not Hispanic	*	*	*	*	*	*	*
Students with Disabilities	38	81.6%	40	75.0%	-6.6%	Students without Disabilities	452	95.6%	429	93.2%	-2.3%	14.0%	18.2%
Economically Disadvantaged	*	*	*	*	*	Not Economically Disadvantaged	*	*	*	*	*	*	*
Limited English Proficient	*	*	*	*	*	English Proficient	*	*	*	*	*	*	*
“All 3” Supergroup	*	*	*	*	*	Not in “All 3” Supergroup	*	*	*	*	*	*	*
“SwD-ECD” Supergroup	*	*	*	*	*	Not in “SwD-ECD” Supergroup	*	*	*	*	*	*	*
“SwD-LEP” Supergroup	*	*	*	*	*	Not in “SwD-LEP” Supergroup	*	*	*	*	*	*	*
“ECD-LEP” Supergroup	28	67.9%	115	82.6%	14.8%	Not in “ECD-LEP” Supergroup	462	96.1%	354	94.6%	-1.5%	28.2%	12.2%

Walkthrough

This walkthrough guides the user through determination of a Closing Achievement Gaps score in mathematics for Sample Elementary. It also includes a shorter description of a Closing Graduation Gaps determination for Sample High, illustrating how graduation differs in this priority area. To determine an overall Closing Gaps score, reading, mathematics, and graduation scores are calculated as appropriate and added.

Step 1: Convert Points to Rates

Closing achievement gaps data are presented in the Technical Report Card in points—the same units as the Student Achievement area—for clarity. However, to determine a score we must convert the points to rates, which simply involves dividing the number of points by 50. For this illustration, only points data are shown:

Sample Elementary – Achievement Points

Group				Comparison Group				Gap	
	2010-11	2011-12	Change		2010-11	2011-12	Change	Prior Year	Current Year
	Achievement Points	Achievement Points			Achievement Points	Achievement Points			
Asian or Pacific Islander	13.5	17.3	3.8	White not Hispanic	34.3	35.8	1.4	20.8	18.4
Students with Disabilities	20.8	21.8	1	Students without Disabilities	33.4	34.5	1.1	12.6	12.7
Economically Disadvantaged	23.4	25.1	1.7	Not Economically Disadvantaged	34.8	36.4	1.6	11.4	11.3

Divided by 50



Sample Elementary – Achievement Rates

Group				Comparison Group				Gap	
	2010-11	2011-12	Change		2010-11	2011-12	Change	Prior Year	Current Year
	Achievement Rate	Achievement Rate			Achievement Rate	Achievement Rate			
Asian or Pacific Islander	0.270	0.346	0.076	White not Hispanic	0.686	0.716	0.028	0.416	0.368
Students with Disabilities	0.416	0.436	0.020	Students without Disabilities	0.668	0.690	0.022	0.252	0.254
Economically Disadvantaged	0.468	0.502	0.034	Not Economically Disadvantaged	0.696	0.728	0.032	0.228	0.226

Step 2: Calculate a Raw Score for Each Group-Comparison Pair

The simplest way to look at closing gaps would be to compare the prior year's gap to the current, but this would create an undesirable incentive for schools to close gaps by allowing the performance of students in comparison groups to stagnate or even decline, rather than by improving the performance of groups at a lower level. As such, we focus mainly on performance change among the "gap" groups, and only include comparison groups as a penalty when their performance declines.

Definitions

Group Change = Group's achievement rate in the current year
– Group's achievement rate in the prior year

Comparison Group Change
= Comparison group's achievement rate in the current year
– Comparison group's achievement rate in the prior year

Penalty = $\frac{\text{Comparison Group Change}}{2}$ when Comparison Group Change < 0

Formula

Raw Score = Group Change + Penalty (when applicable)

Calculation

Group	Comparison Group			Raw Score	
	Change	Change	Penalty		
Asian or Pacific Islander	0.076	White not Hispanic	0.028	0	0.076
Students with Disabilities	0.020	Students without Disabilities	0.022	0	0.020
Economically Disadvantaged	0.034	Not Economically Disadvantaged	0.032	0	0.034

Step 3: Determine the Closing Achievement Gaps Score

Once we have a raw score for each group-comparison pair in the school, we average those raw scores together and use a formula to determine the Closing Achievement Gaps score. The formula is complex, in order to put Closing Gaps scores on a similar scale to Student Achievement. Like the WKCE, Wisconsin's new school accountability system includes different kinds of data with different meanings, and it is necessary to align components like Closing Gaps to a common scale.

Definitions

Average Raw Score = Average of all raw scores calculated for the school

Possible Points = 25 if the school has Closing Graduation Gaps data, or 50 if it does not

Formula

$$\text{Closing Achievement Gaps Score} = [(\text{Average Raw Score} \times 3.18) + 0.65] \times \text{Possible Points}$$

Note: 3.18 and 0.65 are numbers that align Closing Gaps to a scale based on Student Achievement scores.

Calculation

$$\text{Average Raw Score} = \frac{0.076 + 0.020 + 0.034}{3} = 0.043; \text{Possible Points} = 50$$

$$\text{Closing Achievement Gaps Score} = [(0.043 \times 3.18) + 0.65] \times 50 = \mathbf{39.4}$$

Sample Elementary has a Closing Achievement Gaps score in mathematics of 39.4.

About Closing Graduation Gaps

The process for calculating a Closing Graduation Gaps score is nearly identical to that for achievement gaps, with three differences:

1. Graduation data are converted from percentages to rates by dividing the percentage by 100.
2. The number of possible points is 50 if the school has Closing Achievement Gaps data described above, or 100 if it does not.
3. The first number in the score formula that aligns Closing Gaps to Student Achievement is different: 0.79 instead of 3.18. (The second number, 0.65, remains the same.)

Let's step through the process to illustrate using Sample High School data.

Step 1: Convert Percentages to Rates

Sample High – Graduation Rates

Group	Comparison Group			Gap					
	2009-10	2010-11	Change	Prior Year	Current Year				
Graduation Rate	Graduation Rate	Graduation Rate		Graduation Rate	Graduation Rate				
American Indian or Alaskan Native	0.971	0.905	-0.067	White not Hispanic	0.952	0.925	-0.026	-0.020	-0.021
Students with Disabilities	0.816	0.750	-0.066	Students without Disabilities	0.956	0.932	-0.023	0.140	0.182
"ECD-LEP" Supergroup	0.679	0.826	0.148	Not in "ECD-LEP" Supergroup	0.961	0.946	-0.015	0.282	0.122

Step 2: Calculate a Raw Score for Each Group-Comparison Pair

Group	Change	Comparison Group		Raw Score	
		Change	Penalty		
American Indian or Alaskan Native	-0.067	White not Hispanic	-0.026	-0.013	-0.080
Students with Disabilities	-0.066	Students without Disabilities	-0.023	-0.012	-0.054
"ECD-LEP" Supergroup	0.148	Not in "ECD-LEP" Supergroup	-0.015	-0.008	0.140

Step 3: Determine the Closing Graduation Gaps Score

$$\text{Average Raw Score} = \frac{(-0.080) + (-0.054) + 0.140}{3} = 0.006; \text{ Possible Points} = 50$$

$$\text{Closing Graduation Gaps Score} = [(0.006 \times 0.79) + 0.65] \times 50 = \mathbf{32.7}$$

Sample High has a Closing Graduation Gaps score of 32.7.

DRAFT

Closing Gaps Score Worksheet

This worksheet has three parts: for Closing Achievement Gaps in Reading, Closing Achievement Gaps in Mathematics, and Closing Graduation Gaps. Each part requires you to pull data from the Closing Gaps detail in the Technical Report Card. **Note that the score calculated here may not exactly match the report card due to rounding.**

The report card for a particular school will include some or all Closing Gaps data:

- Closing Graduation Gaps only
- Closing Achievement Gaps – Reading and Closing Achievement Gaps – Mathematics
- All three Closing Gaps components

A school will not have Closing Achievement Gaps data and scores reported unless they are available for both reading and mathematics. The combination of Closing Gaps components calculated and reported for a school determines the number of possible points for each component:

Component	Present?	Possible points	Present?	Possible points	Present?	Possible points
Closing Achievement Gaps – Reading	Yes	50	No	-	Yes	25
Closing Achievement Gaps – Mathematics	Yes	50	No	-	Yes	25
Closing Graduation Gaps	No	-	Yes	100	Yes	50

Instructions

Complete the worksheets that include components calculated for the school, entering data from the Technical Report Card where appropriate. When all applicable worksheets are complete, add the component scores to determine the school's total Closing Gaps score:

Closing Achievement Gaps – Reading Score: _____ out of ____ points

Closing Achievement Gaps – Mathematics Score: _____ out of ____ points

Closing Graduation Gaps Score: + _____ out of ____ points

Total Closing Gaps Score: _____ out of 100 points

Closing Achievement Gaps – Reading Score

Step 1: Convert Points to Rates

Enter data from the “Change” columns under the “Group” or “Comparison Group” headings in the report card detail table. If asterisks are given for a particular pair of group and comparison group, leave the boxes blank for that pair.

<u>Group</u>	<u>Change (in Points)</u>		<u>Change (in Rate)</u>	<u>Comparison Group</u>	<u>Change (in Points)</u>		<u>Change (in Rate)</u>
(1a) American Indian or Alaska Native		÷ 50 =	1a	(1b) White not Hispanic		÷ 50 =	1b
(1c) Asian or Pacific Islander		÷ 50 =	1c	(1d) White not Hispanic		÷ 50 =	1d
(1e) Black not Hispanic		÷ 50 =	1e	(1f) White not Hispanic		÷ 50 =	1f
(1g) Hispanic		÷ 50 =	1g	(1h) White not Hispanic		÷ 50 =	1h
(1i) Students with Disabilities		÷ 50 =	1i	(1j) Students without Disabilities		÷ 50 =	1j
(1k) Economically Disadvantaged		÷ 50 =	1k	(1k) Not Economically Disadvantaged		÷ 50 =	1l
(1m) Limited English Proficient		÷ 50 =	1m	(1n) English Proficient		÷ 50 =	1n
(1o) “All 3” Supergroup		÷ 50 =	1o	(1p) Not in “All 3” Supergroup		÷ 50 =	1p
(1q) “SwD-ECD” Supergroup		÷ 50 =	1q	(1r) Not in “SwD-ECD” Supergroup		÷ 50 =	1r
(1s) “SwD-LEP” Supergroup		÷ 50 =	1s	(1t) Not in “SwD-LEP” Supergroup		÷ 50 =	1t
(1u) “ECD-LEP” Supergroup		÷ 50 =	1u	(1v) Not in “ECD-LEP” Supergroup		÷ 50 =	1v

Step 2: Calculate a Raw Score for Each Group-Comparison Pair

Enter data from step 1 above only when the boxes contain data for a pair; if the pair’s boxes above are blank, leave its boxes blank. Under the “Penalty” column, calculate a penalty (comparison group’s change ÷ 2) only when the comparison group’s change is less than zero.

<u>Group-Comparison Pair</u>	<u>Group Change</u>	<u>Comparison Change</u>	<u>Penalty (Comparison Change ÷ 2)</u>	<u>Raw Score</u>
American Indian/White	Box 1a: 2a	Box 1b: 2b	Less than zero? <input type="checkbox"/> Yes 2c	2a + 2c: 2d
Asian/White	Box 1c: 2e	Box 1d: 2f	Less than zero? <input type="checkbox"/> Yes 2g	2e + 2g: 2h
Black/White	Box 1e: 2i	Box 1f: 2j	Less than zero? <input type="checkbox"/> Yes 2k	2i + 2k: 2l
Hispanic/White	Box 1g: 2m	Box 1h: 2n	Less than zero? <input type="checkbox"/> Yes 2o	2m + 2o: 2p
Students with/without Disabilities	Box 1i: 2q	Box 1j: 2r	Less than zero? <input type="checkbox"/> Yes 2s	2q + 2s: 2t
Economically Disadvantaged/Not	Box 1k: 2u	Box 1l: 2v	Less than zero? <input type="checkbox"/> Yes 2w	2u + 2w: 2x
Limited English Proficient/Proficient	Box 1m: 2y	Box 1n: 2z	Less than zero? <input type="checkbox"/> Yes 2aa	2y + 2aa: 2ab
“All 3” Supergroup/Not	Box 1o: 2ac	Box 1p: 2ad	Less than zero? <input type="checkbox"/> Yes 2ae	2ac + 2ae: 2af
“SwD-ECD” Supergroup/Not	Box 1q: 2ag	Box 1r: 2ah	Less than zero? <input type="checkbox"/> Yes 2ai	2ag + 2ai: 2aj
“SwD-LEP” Supergroup/Not	Box 1s: 2ak	Box 1t: 2al	Less than zero? <input type="checkbox"/> Yes 2am	2ak + 2am: 2an
“ECD-LEP” Supergroup/Not	Box 1u: 2ao	Box 1v: 2ap	Less than zero? <input type="checkbox"/> Yes 2aq	2ao + 2aq: 2ar

Step 3: Determine the Closing Achievement Gaps – Reading Score

(3a) Total of "Raw Score" column in step 2:	3a
(3b) Number of boxes with data in step 2 "Raw Score" column:	3b
Average Raw Score: (3c) Enter $3a \div 3b$:	3c
(3d) Does the school have Closing Graduation Gaps data? 3d <input type="checkbox"/> Yes <input type="checkbox"/> No	
Possible Points: (3e) If 3d is "Yes," enter 25; if "No," enter 50:	3e
(3f) Enter Average Raw Score from box 3c:	3f
(3g) Multiply box 3f by 3.18:	3g
(3h) Add box 3g plus 0.65:	3h
(3i) Enter Possible Points from box 3e:	3i
Closing Achievement Gaps – Reading Score: (3j) Multiply boxes 3h and 3i:	3j

Closing Achievement Gaps – Mathematics Score

Step 1: Convert Points to Rates

Enter data from the "Change" columns under the "Group" or "Comparison Group" headings in the report card detail table. If asterisks are given for a particular pair of group and comparison group, leave the boxes blank for that pair.

Group	Change (in Points)		Change (in Rate)	Comparison Group	Change (in Points)		Change (in Rate)
(1a) American Indian or Alaska Native		$\div 50 =$	1a	(1b) White not Hispanic		$\div 50 =$	1b
(1c) Asian or Pacific Islander		$\div 50 =$	1c	(1d) White not Hispanic		$\div 50 =$	1d
(1e) Black not Hispanic		$\div 50 =$	1e	(1f) White not Hispanic		$\div 50 =$	1f
(1g) Hispanic		$\div 50 =$	1g	(1h) White not Hispanic		$\div 50 =$	1h
(1i) Students with Disabilities		$\div 50 =$	1i	(1j) Students without Disabilities		$\div 50 =$	1j
(1k) Economically Disadvantaged		$\div 50 =$	1k	(1k) Not Economically Disadvantaged		$\div 50 =$	1l
(1m) Limited English Proficient		$\div 50 =$	1m	(1n) English Proficient		$\div 50 =$	1n
(1o) "All 3" Supergroup		$\div 50 =$	1o	(1p) Not in "All 3" Supergroup		$\div 50 =$	1p
(1q) "SwD-ECD" Supergroup		$\div 50 =$	1q	(1r) Not in "SwD-ECD" Supergroup		$\div 50 =$	1r
(1s) "SwD-LEP" Supergroup		$\div 50 =$	1s	(1t) Not in "SwD-LEP" Supergroup		$\div 50 =$	1t
(1u) "ECD-LEP" Supergroup		$\div 50 =$	1u	(1v) Not in "ECD-LEP" Supergroup		$\div 50 =$	1v

Step 2: Calculate a Raw Score for Each Group-Comparison Pair

Enter data from step 1 above only when the boxes contain data for a pair; if the pair's boxes above are blank, leave its boxes blank.
Under the "Penalty" column, calculate a penalty (comparison group's change ÷ 2) only when the comparison group's change is less than zero.

Group-Comparison Pair	Group Change	Comparison Change	Penalty (Comparison Change ÷ 2)	Raw Score
American Indian/White	Box 1a: 2a	Box 1b: 2b	Less than zero? <input type="checkbox"/> Yes	2c: 2d
Asian/White	Box 1c: 2e	Box 1d: 2f	Less than zero? <input type="checkbox"/> Yes	2e + 2g: 2h
Black/White	Box 1e: 2i	Box 1f: 2j	Less than zero? <input type="checkbox"/> Yes	2i + 2k: 2l
Hispanic/White	Box 1g: 2m	Box 1h: 2n	Less than zero? <input type="checkbox"/> Yes	2m + 2o: 2p
Students with/without Disabilities	Box 1i: 2q	Box 1j: 2r	Less than zero? <input type="checkbox"/> Yes	2q + 2s: 2t
Economically Disadvantaged/Not	Box 1k: 2u	Box 1l: 2v	Less than zero? <input type="checkbox"/> Yes	2u + 2w: 2x
Limited English Proficient/Proficient	Box 1m: 2y	Box 1n: 2z	Less than zero? <input type="checkbox"/> Yes	2y + 2aa: 2ab
"All 3" Supergroup/Not	Box 1o: 2ac	Box 1p: 2ad	Less than zero? <input type="checkbox"/> Yes	2ac + 2ae: 2af
"SwD-ECD" Supergroup/Not	Box 1q: 2ag	Box 1r: 2ah	Less than zero? <input type="checkbox"/> Yes	2ag + 2ai: 2aj
"SwD-LEP" Supergroup/Not	Box 1s: 2ak	Box 1t: 2al	Less than zero? <input type="checkbox"/> Yes	2ak + 2am: 2an
"ECD-LEP" Supergroup/Not	Box 1u: 2ao	Box 1v: 2ap	Less than zero? <input type="checkbox"/> Yes	2ao + 2aq: 2ar

Step 3: Determine the Closing Achievement Gaps – Mathematics Score

(3a) Total of "Raw Score" column in step 2: 3a

(3b) Number of boxes with data in step 2 "Raw Score" column: 3b

Average Raw Score: (3c) Enter $3a \div 3b$: 3c

(3d) Does the school have Closing Graduation Gaps data? 3d Yes No

Possible Points: (3e) If 3d is "Yes," enter 25; if "No," enter 50: 3e

(3f) Enter Average Raw Score from box 3c: 3f

(3g) Multiply box 3f by 3.18: 3g

(3h) Add box 3g plus 0.65: 3h

(3i) Enter Possible Points from box 3e: 3i

Closing Achievement Gaps – Mathematics Score: (3j) Multiply boxes 3h and 3i: 3j

Closing Graduation Gaps Score

Step 1: Convert Percentages to Rates

Enter data from the “Change” columns under the “Group” or “Comparison Group” headings in the report card detail table. If asterisks are given for a particular pair of group and comparison group, leave the boxes blank for that pair.

<u>Group</u>	<u>Change (in %)</u>		<u>Change (in Rate)</u>	<u>Comparison Group</u>	<u>Change (in %)</u>		<u>Change (in Rate)</u>
(1a) American Indian or Alaska Native		÷ 100 =	1a	(1b) White not Hispanic		÷ 100 =	1b
(1c) Asian or Pacific Islander		÷ 100 =	1c	(1d) White not Hispanic		÷ 100 =	1d
(1e) Black not Hispanic		÷ 100 =	1e	(1f) White not Hispanic		÷ 100 =	1f
(1g) Hispanic		÷ 100 =	1g	(1h) White not Hispanic		÷ 100 =	1h
(1i) Students with Disabilities		÷ 100 =	1i	(1j) Students without Disabilities		÷ 100 =	1j
(1k) Economically Disadvantaged		÷ 100 =	1k	(1k) Not Economically Disadvantaged		÷ 100 =	1l
(1m) Limited English Proficient		÷ 100 =	1m	(1n) English Proficient		÷ 100 =	1n
(1o) “All 3” Supergroup		÷ 100 =	1o	(1p) Not in “All 3” Supergroup		÷ 100 =	1p
(1q) “SwD-ECD” Supergroup		÷ 100 =	1q	(1r) Not in “SwD-ECD” Supergroup		÷ 100 =	1r
(1s) “SwD-LEP” Supergroup		÷ 100 =	1s	(1t) Not in “SwD-LEP” Supergroup		÷ 100 =	1t
(1u) “ECD-LEP” Supergroup		÷ 100 =	1u	(1v) Not in “ECD-LEP” Supergroup		÷ 100 =	1v

Step 2: Calculate a Raw Score for Each Group-Comparison Pair

Enter data from step 1 above only when the boxes contain data for a pair; if the pair’s boxes above are blank, leave its boxes blank. Under the “Penalty” column, calculate a penalty (comparison group’s change ÷ 2) only when the comparison group’s change is less than zero.

<u>Group-Comparison Pair</u>	<u>Group Change</u>	<u>Comparison Change</u>	<u>Penalty (Comparison Change ÷ 2)</u>	<u>Raw Score</u>
American Indian/White	Box 1a: 2a	Box 1b: 2b	Less than zero? <input type="checkbox"/> Yes 2c	2a + 2c: 2d
Asian/White	Box 1c: 2e	Box 1d: 2f	Less than zero? <input type="checkbox"/> Yes 2g	2e + 2g: 2h
Black/White	Box 1e: 2i	Box 1f: 2j	Less than zero? <input type="checkbox"/> Yes 2k	2i + 2k: 2l
Hispanic/White	Box 1g: 2m	Box 1h: 2n	Less than zero? <input type="checkbox"/> Yes 2o	2m + 2o: 2p
Students with/without Disabilities	Box 1i: 2q	Box 1j: 2r	Less than zero? <input type="checkbox"/> Yes 2s	2q + 2s: 2t
Economically Disadvantaged/Not	Box 1k: 2u	Box 1l: 2v	Less than zero? <input type="checkbox"/> Yes 2w	2u + 2w: 2x
Limited English Proficient/Proficient	Box 1m: 2y	Box 1n: 2z	Less than zero? <input type="checkbox"/> Yes 2aa	2y + 2aa: 2ab
“All 3” Supergroup/Not	Box 1o: 2ac	Box 1p: 2ad	Less than zero? <input type="checkbox"/> Yes 2ae	2ac + 2ae: 2af
“SwD-ECD” Supergroup/Not	Box 1q: 2ag	Box 1r: 2ah	Less than zero? <input type="checkbox"/> Yes 2ai	2ag + 2ai: 2aj
“SwD-LEP” Supergroup/Not	Box 1s: 2ak	Box 1t: 2al	Less than zero? <input type="checkbox"/> Yes 2am	2ak + 2am: 2an
“ECD-LEP” Supergroup/Not	Box 1u: 2ao	Box 1v: 2ap	Less than zero? <input type="checkbox"/> Yes 2aq	2ao + 2aq: 2ar

Step 3: Determine the Closing Graduation Gaps Score

(3a) Total of "Raw Score" column in step 2:

3a

(3b) Number of boxes with data in step 2 "Raw Score" column:

3b

Average Raw Score: (3c) Enter $3a \div 3b$:

3c

(3d) Does the school have Closing Achievement Gaps data? 3d Yes No

Possible Points: (3e) If 3d is "Yes," enter 50; if "No," enter 100:

3e

(3f) Enter Average Raw Score from box 3c:

3f

(3g) Multiply box 3f by 0.79:

3g

(3h) Add box 3g plus 0.65:

3h

(3i) Enter Possible Points from box 3e:

3i

Closing Graduation Gaps Score: (3j) Multiply boxes 3h and 3i:

3j

DRAFT

Calculating an On-Track and Postsecondary Readiness Scores

The On-Track and Postsecondary Readiness (On-Track/Postsecondary) priority area is designed to evaluate schools on **high-impact indicators** that predict student success. It includes attendance and graduation, ACT participation and performance, and student achievement among 3rd graders in reading and 8th graders in mathematics.

Background

The mission of Wisconsin public schools is to **ensure that every student becomes a high school graduate ready for college and career**. The process of getting a student to graduation begins well before 12th grade, and there are key indicators throughout elementary, middle, and high school that have a direct impact on a student's future likelihood of success. This priority area is designed to hold schools accountable on a number of these key indicators:

- **Attendance** drives all aspects of student success throughout their school career.
- **Graduation rate**, which we measure as a **cohort rate**—the percentage of students starting high school together who graduate within a certain time—measures the outcome of our schools' overarching mission.

Among Wisconsin high schools, attendance and graduation track each other fairly closely and have similar, narrow distributions of high rates. At the recommendation of DPI's Technical Advisory Committee, we hold schools accountable on **either graduation or attendance**, depending on whether or not they graduate students.

- **Reading achievement in 3rd grade** and **mathematics achievement in 8th grade** are measures that strongly predict future success in school transitions and graduation.
- **Participation and performance on the ACT**—the most widely-taken college placement examination in Wisconsin—is the best measure of college readiness we currently have.

Each of these measures is not applicable to every school. As we developed a method of combining these measures into a score, DPI strove to be as fair as possible to the diverse array of school types in Wisconsin, which made the process of transforming measures into scores particularly complex. As other indicators become available, we will evaluate them for inclusion in this priority area.

Reading the Report Card

Attendance

The first table shown in the On-Track and Postsecondary Readiness detail is the attendance rate, the number of days that students actually attended divided by the number of possible days they could have attended:

Group	Enrollment	Attended Days	Possible Days	Rate
All Students	248	42,199	43,830	96.3%

Graduation

The next table shows graduation rate information:

Group	Four-Year Cohort Graduation Rate			Six-Year Cohort Graduation Rate		
	Students in Cohort	Graduates	Rate	Students in Cohort	Graduates	Rate
All Students	311	255	82.0%	328	299	91.2%

Graduation rates are given for a particular “cohort” of students, which is the group of high school students that make up a particular four-year graduating class and do not transfer to a private school, move to another state or country, or are deceased. We report two graduation rates:

- The four-year cohort graduation rate is the percentage of students in the cohort at the end of the fourth year who have graduated from high school.
- The six-year cohort graduation rate is the percentage of students in the cohort at the end of the sixth year (e.g. at the end of 2012-13 for the 2010-11 cohort) who have graduated from high school. This “extended” rate is used to include students who require more than four years to finish high school. Note: For the first year of accountability determinations (2011-12) we will use a five-year rate rather than a six-year rate because six-year data are not yet available.

ACT Participation and Performance

The third table provides information on how many 12th grade students took the ACT and how they did:

Group	Enrolled	Tested		Reading		English		Mathematics		Science	
	Students	Students	Percent	Students	Percent	Students	Percent	Students	Percent	Students	Percent
12 th Graders	313	170	54.3%	125	73.5%	142	83.5%	120	70.6%	160	94.1%

The percentage of 12th graders tested divided by the number enrolled gives the school’s ACT participation rate. The subject breakdowns show how many of the ACT-tested students reached college readiness benchmarks on those portions of the ACT (we use students’ best exams for this measure):

- Reading: 21 or higher
- English: 18 or higher

- Mathematics: 22 or higher
- Science: 24 or higher

(More information on ACT’s college readiness benchmarks is available at <http://www.act.org/education/benchmarks.html>)

Example: At the school shown, 170 of 313 (54.3%) of 12th graders took the ACT. Of those 170 tested students, 125 (73.5%) scored 21 or higher in reading, 142 (83.5%) scored 18 or higher in English, 120 (70.6%) scored 22 or higher in mathematics, and 160 (94.1%) scored 24 or higher in science.

3rd Grade Reading/8th Grade Mathematics Achievement

The final two tables in the On-Track and Postsecondary Readiness detail give information on reading achievement for 3rd grade students and mathematics achievement for 8th grade students. These tables are presented in the same format as Student Achievement, described on page 10.

The difference between this specific measure and other parts of the report card is in how “cell size”—the minimum number of students with data necessary to calculate a score—is used. In most places we use a cell size of 20 in the most recent year, but applying this to a single grade would omit a large number of small elementary schools. Instead, for this measure only, we use a cell size of 20 over the two most recent years. This change affects only whether data is presented on the report card and used to determine a score, not the process by which the score is calculated.

Combining Individual Components Into a Priority Area Score

Different schools will have different components for this priority area. The number of points possible for each component depends on which are available for a particular school, with the requirements that (1) graduation or attendance will be 20 percent of the school’s overall score and (2) the other On-Track and Postsecondary Readiness component scores will total 5 percent of the school’s overall score. Graduation or attendance will always be determined as scores out of 80 points. Possible scores for the other components are:

3rd Grade Reading	Alone	20 points
	With 8 th grade mathematics	10 points
	With both 8 th grade mathematics and ACT participation & performance	5 points
8th Grade Mathematics	Alone	20 points
	With 3 rd grade reading	10 points
	With ACT participation & performance	10 points
	With both 3 rd grade reading and ACT participation & performance	5 points
ACT Participation and Performance	Alone	20 points
	With 3 rd grade reading and/or 8 th grade mathematics	10 points

Walkthrough #1

This walkthrough will use data on attendance and 3rd grade reading achievement to determine a score for Sample Elementary.

Step 1: Calculate the Graduation/Attendance Score

Group	Enrollment	Attended Days	Possible Days	Rate
All Students	248	42,199	43,830	96.3%

This is an elementary school; it does not graduate students, so its attendance rate is used to determine the score. The graduation/attendance score is simply the rate (expressed as a decimal, not a percentage) multiplied by 80:

$$\text{Graduation/Attendance Score} = \text{Attendance Rate} \times 80$$

$$\text{Graduation/Attendance Score} = 0.963 \times 80 = \mathbf{77.0}$$

Step 2: Calculate the 3rd Grade Reading Achievement Score

Performance Level	Points Multiplier	2009-10			2010-11			2011-12		
		Students		Points	Students		Points	Students		Points
		Count	Percent		Count	Percent		Count	Percent	
Advanced	1.5	9	20.9%	13.5	10	22.7%	15	8	19.0%	12
Proficient	1	11	25.6%	11	14	31.8%	14	14	33.3%	14
Basic	0.5	10	23.3%	5	9	20.5%	4.5	11	26.2%	5.5
Minimal Performance/ Not Tested	0	13	30.2%	0	11	25.0%	0	9	21.4%	0
Total Enrolled	-	43	100.0%	29.5	44	100.0%	33.5	42	100.0%	31.5

The method for calculating the 3rd grade reading and 8th grade mathematics achievement scores is the same as described in the Student Achievement walkthrough on pages 11-13, with the difference that the multiplier used in the final step varies depending on the number of possible points for this component. A simplified version of that walkthrough is presented here; for a detailed description, please see pages 11-13.

Step 2A: Assign and Total Points

$$\text{Prior Year Two Points} = (9 \times 1.5) + (11 \times 1) + (10 \times 0.5) = \mathbf{29.5}$$

$$\text{Prior Year One Points} = (10 \times 1.5) + (14 \times 1) + (9 \times 0.5) = \mathbf{33.5}$$

$$\text{Current Year Points} = (8 \times 1.5) + (14 \times 1) + (11 \times 0.5) = \mathbf{31.5}$$

Step 2B: Determine Average Points by Enrollment

$$\text{Average Enrollment} = \frac{43 + 44 + 42}{3} = 43$$

$$\text{Prior Year Two Average} = \frac{\text{Prior Year Two Points}}{\text{Average Enrollment}} = \frac{29.5}{43} = \mathbf{0.686}$$

$$\text{Prior Year One Average} = \frac{\text{Prior Year One Points}}{\text{Average Enrollment}} = \frac{33.5}{43} = \mathbf{0.779}$$

$$\text{Current Year Average} = \frac{\text{Current Year Points}}{\text{Average Enrollment}} = \frac{31.5}{43} = \mathbf{0.733}$$

Step 2C: Weight Averages by Year

$$\text{Weighted Points} = \frac{\text{Prior Year Two Average} + (\text{Prior Year One Average} \times 1.25) + (\text{Current Year Average} \times 1.5)}{3.75}$$

$$\text{Weighted Points} = \frac{0.686 + (0.779 \times 1.25) + (0.733 \times 1.5)}{3.75} = \mathbf{0.736}$$

Step 2D: Multiply Weighted Points by Possible Score

Sample Elementary only has a 3rd grade reading achievement component, so the number of possible points is 20:

$$\text{3rd Grade Reading Achievement Score} = 0.736 \times 20 = \mathbf{14.7}$$

Step 3: Determine the Total On-Track/Postsecondary Score

The total score for this priority area is the sum of all its components' scores:

Graduation/Attendance Score	77.0
3rd Grade Reading Achievement Score	+ 14.7
<hr/> Total On-Track/Postsecondary Score	<hr/> 91.7

Sample Elementary has an On-Track and Postsecondary Readiness score of 91.7.

Walkthrough #2

This walkthrough will use data on graduation and ACT participation and performance to determine a score for Sample High.

Step 1: Calculate the Graduation/Attendance Score

Group	Four-Year Cohort Graduation Rate			Six-Year Cohort Graduation Rate		
	Students in Cohort	Graduates	Rate	Students in Cohort	Graduates	Rate
All Students	311	255	82.0%	328	299	91.2%

This is a high school; it graduates students, so its graduation rates are used to determine the score. The graduation/attendance score here is the average of the four-year and six-year cohort graduation rates (expressed as a decimal, not a percentage) multiplied by 80:

$$\text{Graduation/Attendance Score} = \frac{\text{4-Year Cohort Rate} + \text{6-Year Cohort Rate}}{2} \times 80$$

$$\text{Graduation/Attendance Score} = \frac{0.820 + 0.912}{2} \times 80 = \mathbf{69.3}$$

Step 2: Calculate the ACT Participation and Performance Score

Group	Enrolled	Tested		Reading		English		Mathematics		Science	
	Students	Students	Percent	Students	Percent	Students	Percent	Students	Percent	Students	Percent
12 th Graders	313	170	54.3%	125	73.5%	142	83.5%	120	70.6%	160	94.1%

The ACT participation and performance score is the average of the five rates in the table—participation (tested) rate and the four college-ready benchmark rates in reading, English, mathematics, and science—multiplied by the possible score. In this case, with no other components present for the school, the possible score is 20 points:

$$\text{ACT Score} = \frac{\text{Participation} + \text{Reading} + \text{English} + \text{Mathematics} + \text{Science}}{5} \times \text{Possible Score}$$

$$\text{ACT Score} = \frac{0.543 + 0.735 + 0.835 + 0.706 + 0.941}{5} \times 20 = \mathbf{15.0}$$

Step 3: Determine the Total On-Track/Postsecondary Score

Graduation/Attendance Score	69.3
ACT Participation and Performance Score	+ 15.0
Total On-Track/Postsecondary Score	84.3

Sample High has an On-Track and Postsecondary Readiness score of 84.3.

Walkthrough #3

This walkthrough will use data on graduation, ACT participation and performance, 8th grade mathematics achievement, and 3rd grade reading to determine a score for Sample K-12.

Step 1: Calculate the Graduation/Attendance Score

Attendance

Group	Enrollment	Attended Days	Possible Days	Rate
All Students	252	39,288	42,173	93.2%

Graduation

Group	Four-Year Cohort Graduation Rate			Six-Year Cohort Graduation Rate		
	Students in Cohort	Graduates	Rate	Students in Cohort	Graduates	Rate
All Students	21	19	90.5%	*	*	*

Sample K-12 graduates students, so we use graduation rates to determine this score. Data for the six-year cohort rate are redacted—presumably, the six-year cohort must not meet the cell size of 20. Therefore, the graduation/attendance score is based only on the four-year cohort rate:

$$\text{Graduation/Attendance Score} = 4\text{-Year Cohort Graduation Rate} \times 80$$

$$\text{Graduation/Attendance Score} = 0.905 \times 80 = \mathbf{72.4}$$

Step 2: Calculate the ACT Participation and Performance Score

Group	Enrolled	Tested		Reading		English		Mathematics		Science	
	Students	Students	Percent	Students	Percent	Students	Percent	Students	Percent	Students	Percent
12 th Graders	21	14	66.7%	10	47.6%	11	52.4%	8	38.1%	5	23.8%

With 8th grade mathematics and 3rd grade reading achievement present for the school, the possible score for this component is 10 points:

$$\text{ACT Score} = \frac{\text{Participation} + \text{Reading} + \text{English} + \text{Mathematics} + \text{Science}}{5} \times \text{Possible Score}$$

$$\text{ACT Score} = \frac{0.667 + 0.476 + 0.524 + 0.381 + 0.238}{5} \times 10 = \mathbf{4.6}$$

Step 3: Calculate the 8th Grade Mathematics Achievement Score

Performance Level	Points Multiplier	2009-10			2010-11			2011-12		
		Students		Points	Students		Points	Students		Points
		Count	Percent		Count	Percent		Count	Percent	
Advanced	1.5	4	21.1%	6	3	16.7%	4.5	3	14.3%	4.5
Proficient	1	6	31.6%	6	5	27.8%	5	7	33.3%	7
Basic	0.5	5	26.3%	2.5	6	33.3%	3	8	38.1%	4
Minimal Performance/ Not Tested	0	4	21.1%	0	4	22.2%	0	3	14.3%	0
Total Enrolled	-	19	100.0%	14.5	18	100.0%	12.5	21	100.0%	15.5

Step 3A: Assign and Total Points

$$\text{Prior Year Two Points} = (4 \times 1.5) + (6 \times 1) + (5 \times 0.5) = \mathbf{14.5}$$

$$\text{Prior Year One Points} = (3 \times 1.5) + (5 \times 1) + (6 \times 0.5) = \mathbf{12.5}$$

$$\text{Current Year Points} = (3 \times 1.5) + (7 \times 1) + (8 \times 0.5) = \mathbf{15.5}$$

Step 3B: Determine Average Points by Enrollment

$$\text{Average Enrollment} = \frac{19 + 18 + 21}{3} = 19.3$$

$$\text{Prior Year Two Average} = \frac{\text{Prior Year Two Points}}{\text{Average Enrollment}} = \frac{14.5}{19.3} = \mathbf{0.751}$$

$$\text{Prior Year One Average} = \frac{\text{Prior Year One Points}}{\text{Average Enrollment}} = \frac{12.5}{19.3} = \mathbf{0.648}$$

$$\text{Current Year Average} = \frac{\text{Current Year Points}}{\text{Average Enrollment}} = \frac{15.5}{19.3} = \mathbf{0.803}$$

Step 3C: Weight Averages by Year

$$\text{Weighted Points} = \frac{0.751 + (0.648 \times 1.25) + (0.803 \times 1.5)}{3.75} = \mathbf{0.737}$$

Step 3D: Multiply Weighted Points by Possible Score

With ACT participation and performance and 3rd grade reading achievement present for the school, the possible score for this component is 5 points:

$$\text{8th Grade Mathematics Achievement Score} = 0.737 \times 5 = \mathbf{3.7}$$

Step 4: Calculate the 3rd Grade Reading Achievement Score

Performance Level	Points Multiplier	2009-10			2010-11			2011-12		
		Students		Points	Students		Points	Students		Points
		Count	Percent		Count	Percent		Count	Percent	
Advanced	1.5	7	31.8%	10.5	3	17.6%	4.5	5	31.3%	7.5
Proficient	1	10	45.5%	10	8	47.1%	8	7	43.8%	7
Basic	0.5	3	13.6%	1.5	4	23.6%	2	3	18.8%	1.5
Minimal Performance/ Not Tested	0	2	9.1%	0	2	11.8%	0	1	6.3%	0
Total Enrolled	-	22	100.0%	22	17	100.0%	14.5	16	100.0%	16

Step 4A: Assign and Total Points

$$\text{Prior Year Two Points} = (7 \times 1.5) + (10 \times 1) + (3 \times 0.5) = \mathbf{22}$$

$$\text{Prior Year One Points} = (3 \times 1.5) + (8 \times 1) + (4 \times 0.5) = \mathbf{14.5}$$

$$\text{Current Year Points} = (5 \times 1.5) + (7 \times 1) + (3 \times 0.5) = \mathbf{16}$$

Step 4B: Determine Average Points by Enrollment

$$\text{Average Enrollment} = \frac{22 + 17 + 16}{3} = 18.3$$

$$\text{Prior Year Two Average} = \frac{\text{Prior Year Two Points}}{\text{Average Enrollment}} = \frac{22}{18.3} \Rightarrow \mathbf{1.202}$$

$$\text{Prior Year One Average} = \frac{\text{Prior Year One Points}}{\text{Average Enrollment}} = \frac{12.5}{18.3} = \mathbf{0.683}$$

$$\text{Current Year Average} = \frac{\text{Current Year Points}}{\text{Average Enrollment}} = \frac{15.5}{18.3} = \mathbf{0.847}$$

Step 4C: Weight Averages by Year

$$\text{Weighted Points} = \frac{1.202 + (0.683 \times 1.25) + (0.847 \times 1.5)}{3.75} = \mathbf{0.887}$$

Step 4D: Multiply Weighted Points by Possible Score

With ACT participation and performance and 8th grade mathematics present for the school, the possible score for this component is 5 points:

$$\text{3rd Grade Mathematics Achievement Score} = 0.887 \times 5 = \mathbf{4.4}$$

Step 5: Determine the Total On-Track/Postsecondary Score

Graduation/Attendance Score	72.4
ACT Participation and Performance Score	4.6
8 th Grade Mathematics Achievement Score	3.7
3 rd Grade Reading Achievement Score	+ 4.4
<hr/> Total On-Track/Postsecondary Score	85.1

Sample K-12 has an On-Track and Postsecondary Readiness score of 85.1.

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On-Track and Postsecondary Readiness Score Worksheet

Introduction

This worksheet has four parts, for Graduation/Attendance, ACT Participation and Performance, 8th Grade Mathematics Achievement, and 3rd Grade Reading Achievement. Each part requires you to copy data from the On-Track/Postsecondary detail on **pages 8 and 9** of the school report card, and your school may not have data for every component—we only report data for components that have scores. **Note that the score calculated here may not exactly match the report card due to rounding.** The key on page 14 of this document may be used to help read the 8th grade mathematics/3rd grade reading tables.

Instructions

Complete the following worksheet only for the components of On-Track and Postsecondary Readiness with data on your school's report card. Remember that only one of attendance or graduation—not both—is used to calculate that portion of the score. Use this grid to determine the number of possible points for the other On-Track/Postsecondary components:

3rd Grade Reading	Alone	20 points
	With 8 th grade mathematics	10 points
	With both 8 th grade mathematics and ACT participation & performance	5 points
8th Grade Mathematics	Alone	20 points
	With 3 rd grade reading	10 points
	With ACT participation & performance	10 points
	With both 3 rd grade reading and ACT participation & performance	5 points
ACT Participation and Performance	Alone	20 points
	With 3 rd grade reading and/or 8 th grade mathematics	10 points

Total the components calculated for your school to determine the total priority area score:

Graduation/Attendance Score: _____ out of 80 points

ACT Participation and Performance Score: _____ out of _____ points

8th Grade Mathematics Achievement Score: _____ out of _____ points

3rd Grade Reading Achievement Score: + _____ out of _____ points

Total On-Track/Postsecondary Score: _____ out of 100 points

Graduation/Attendance Worksheet

Calculate the Graduation/Attendance Score

(1a) Does the school have a reported graduation rate(s)? 1a Yes No

(1b) If 1a is "No," enter the attendance rate (in %): 1b

(1c) Divide box 1b by 100: 1c

(1d) If 1a is "Yes," enter the 4-year cohort graduation rate (in %): 1d

(1e) If 1a is "Yes," enter the 6-year* cohort graduation rate (in %): 1e

(1f) Add boxes 1d and 1e: 1f

(1g) Divide box 1f by 200: 1g

(1h) Enter whichever of boxes 1c or 1g has a value: 1h

Graduation/Attendance Score: (1i) Multiply box 1h by 80: 1i

ACT Participation and Performance Worksheet

Calculate the ACT Participation and Performance Score

(1a) Enter the percent of 12th graders tested on the ACT: 1a

(1b) Enter the percent tested meeting the Reading benchmark: 1b

(1c) Enter the percent tested meeting the English benchmark: 1c

(1d) Enter the percent tested meeting the Mathematics benchmark: 1d

(1e) Enter the percent tested meeting the Science benchmark: 1e

(1f) Add boxes 1a through 1e: 1f

(1g) Divide box 1f by 500: 1g

(1h) Enter the number of possible points: 1h

ACT Participation & Performance Score: (1i) Multiply box 1g by box 1h: 1i

8th Grade Mathematics Achievement Worksheet

Step 1: Assign and Total Points

Prior Year Two Points

(1a) Advanced students (A)	<input type="text"/>	$\times 1.5 =$	<input type="text"/>	1a
(1b) Proficient students (B)	<input type="text"/>	$\times 1 =$	<input type="text"/>	1b
(1c) Basic students (C)	<input type="text"/>	$\times 0.5 =$	<input type="text"/>	1c
Total points: (1d) Add boxes 1a through 1c				<input type="text"/>

Prior Year Points

(1e) Advanced students (D)	<input type="text"/>	$\times 1.5 =$	<input type="text"/>	1e
(1f) Proficient students (E)	<input type="text"/>	$\times 1 =$	<input type="text"/>	1f
(1g) Basic students (F)	<input type="text"/>	$\times 0.5 =$	<input type="text"/>	1g
Total points: (1h) Add boxes 1e through 1g				<input type="text"/>

Current Year Points

(1i) Advanced students (G)	<input type="text"/>	$\times 1.5 =$	<input type="text"/>	1i
(1j) Proficient students (H)	<input type="text"/>	$\times 1 =$	<input type="text"/>	1j
(1k) Basic students (I)	<input type="text"/>	$\times 0.5 =$	<input type="text"/>	1k
Total points: (1l) Add boxes 1ik through 1k				<input type="text"/>

Step 2: Determine Average Points by Enrollment

Average Enrollment

(2a) Enrollment in prior year two (J)	2a	
(2b) Enrollment in prior year one (K)	2b	
(2c) Enrollment in current year (L)	2c	
(2d) Add boxes 2a through 2c		2d
Average Enrollment: (2e) Divide box 2d by 3		2e

Prior Year Two Average

(2f) Enter total points from box 1d	2f	
(2g) Enter average enrollment from box 2e	2g	
Prior Year Two Average: (2h) Divide box 2f by box 2g		2h

Prior Year One Adjusted Points

(2i) Enter total points from box 1h	2i	
(2j) Enter average enrollment from box 2e	2j	
Prior Year One Average: (2k) Divide box 2i by box 2j		2k

Current Year Adjusted Points

(2l) Enter total points from box 1l	2l	
(2m) Enter average enrollment from box 2e	2m	
Current Year Average: (2n) Divide box 2l by box 2m		2n

Step 3: Weight Averages by Year

If all three years of data are available:

(3a) Enter prior year two average from box 2h		$\times 1.5 =$	3a
(3b) Enter prior year one average from box 2k		$\times 1.25 =$	3b
(3c) Enter current year average from box 2n		$\times 1 =$	3c
(3d) Add boxes 3a through 3c			3d
(3e) Divide box 3d by 3.75			3e

If only two years of data are available:

(3f) Enter prior year one average from box 2k		$\times 1.5 =$	3f
(3g) Enter current year average from box 2n		$\times 1 =$	3g
(3h) Add boxes 3f and 3g			3h
(3i) Divide box 3h by 2.5			3i

If only one year of data is available:

(3j) Enter current year average from box 2n		$\times 1 =$	3j
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Step 4: Calculate Score

(4a) Enter whichever of boxes 3e, 3i, or 3j contains a value	4a
(4b) Is box 4a greater than 1?	4b <input type="checkbox"/> Yes <input type="checkbox"/> No
(4c) If box 4b is "Yes," enter 1; if "No," enter the value in box 4a	4c
(4d) Enter the number of possible points	4d
8 th Grade Mathematics Achievement Score: (4e) Multiply box 4c by box 4d	4e

3rd Grade Reading Achievement Worksheet

Step 1: Assign and Total Points

Prior Year Two Points

(1a) Advanced students (A)	<input type="text"/>	$\times 1.5 =$	<input type="text"/>	1a
(1b) Proficient students (B)	<input type="text"/>	$\times 1 =$	<input type="text"/>	1b
(1c) Basic students (C)	<input type="text"/>	$\times 0.5 =$	<input type="text"/>	1c
Total points: (1d) Add boxes 1a through 1c				<input type="text"/>

Prior Year Points

(1e) Advanced students (D)	<input type="text"/>	$\times 1.5 =$	<input type="text"/>	1e
(1f) Proficient students (E)	<input type="text"/>	$\times 1 =$	<input type="text"/>	1f
(1g) Basic students (F)	<input type="text"/>	$\times 0.5 =$	<input type="text"/>	1g
Total points: (1h) Add boxes 1e through 1g				<input type="text"/>

Current Year Points

(1i) Advanced students (G)	<input type="text"/>	$\times 1.5 =$	<input type="text"/>	1i
(1j) Proficient students (H)	<input type="text"/>	$\times 1 =$	<input type="text"/>	1j
(1k) Basic students (I)	<input type="text"/>	$\times 0.5 =$	<input type="text"/>	1k
Total points: (1l) Add boxes 1i through 1k				<input type="text"/>

Step 2: Determine Average Points by Enrollment

Average Enrollment

(2a) Enrollment in prior year two (J)	<input type="text"/>	2a
(2b) Enrollment in prior year one (K)	<input type="text"/>	2b
(2c) Enrollment in current year (L)	<input type="text"/>	2c
(2d) Add boxes 2a through 2c	<input type="text"/>	
Average Enrollment: (2e) Divide box 2d by 3	<input type="text"/>	

Prior Year Two Average

(2f) Enter total points from box 1d	<input type="text"/>	2f
(2g) Enter average enrollment from box 2e	<input type="text"/>	2g
Prior Year Two Average: (2h) Divide box 2f by box 2g	<input type="text"/>	

Prior Year One Adjusted Points

(2i) Enter total points from box 1h	<input type="text"/>	2i
(2j) Enter average enrollment from box 2e	<input type="text"/>	2j
Prior Year One Average: (2k) Divide box 2i by box 2j	<input type="text"/>	

Current Year Adjusted Points

(2l) Enter total points from box 1l	<input type="text"/>	2l
(2m) Enter average enrollment from box 2e	<input type="text"/>	2m
Current Year Average: (2n) Divide box 2l by box 2m	<input type="text"/>	

Step 3: Weight Averages by Year

If all three years of data are available:

- (3a) Enter prior year two average from box 2h
- (3b) Enter prior year one average from box 2k
- (3c) Enter current year average from box 2n

	$\times 1.5 =$	3a	
	$\times 1.25 =$	3b	
	$\times 1 =$	3c	
(3d) Add boxes 3a through 3c			3d
(3e) Divide box 3d by 3.75			3e

If only two years of data are available:

- (3f) Enter prior year one average from box 2k
- (3g) Enter current year average from box 2n

	$\times 1.5 =$	3f	
	$\times 1 =$	3g	
(3h) Add boxes 3f and 3g			3h
(3i) Divide box 3h by 2.5			3i

If only one year of data is available:

- (3j) Enter current year average from box 2n

	$\times 1 =$	3j
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Step 4: Calculate Score

- (4a) Enter whichever of boxes 3e, 3i, or 3j contains a value

4a

- (4b) Is box 4a greater than 1?

4b Yes No

- (4c) If box 4b is "Yes," enter 1; if "No," enter the value in box 4a

4c

- (4d) Enter the number of possible points

4d

- 3rd Grade Reading Achievement Score: (4e) Multiply box 4c by box 4d

4e

DRAFT

Student Engagement (Red Flags)

Some measures in our school accountability system do not show a wide range of variation between schools, but rather **allow us to pinpoint the small number of schools whose performance raises concern**. Instead of including these measures within one of the priority areas, we place them outside into a separate category called **Student Engagement Indicators**, which are displayed in the Technical Report Card. These measures are:

- **Test Participation:** With so much of this accountability system based on assessment data, it is important that schools test as many students as possible. The goal is for schools to test **at least 95 percent of every group of students in the school** in both the reading and mathematics assessments. A school's performance is measured by **the lowest group participation rate among all groups in either subject**.
- **Absenteeism Rate:** Chronic absenteeism is a strong predictor of whether a student will struggle in the future or fail to graduate. The absenteeism rate in a school is the **percentage of students who are absent at least 16 percent of the time**. A school meets this indicator with an absenteeism rate of **13 percent or less**.
- **Dropout Rate:** Dropping out of school has a direct connection with a student's future success. A dropout rate of **6 percent or less** satisfies this indicator.

When a school fails to meet one of these three **student engagement indicator** goals, **its school score is penalized by 5 points**. The penalty is applied for each missed indicator (i.e., a school that misses for test participation and absenteeism rate would be penalized 10 points) after a base accountability score is calculated from the four priority areas.