A-F Letter Grade Accountability System Technical Manual

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Introduction

The information in this guide is designed for educators, parents, and other interested stakeholders who would like to understand the Arizona A-F Letter Grade system. The Arizona Department of Education's ultimate goal is for all students to receive an education that prepares them for the opportunities and demands of college, the workplace, and life beyond high school. As a state, we are also committed to holding schools accountable to this goal using a fair accountability model that differentiates among the performance of our schools and districts.

Historical Context

The passage of Proposition 301 by Arizona voters in November 2001 was the first step in Arizona holding schools accountable for the academic performance of their students. The Arizona Department of Education developed an accountability system to measure school performance based on student achievement on Arizona's Instrument to Measure Standards (AIMS) in mathematics and reading. This system was dubbed AZ LEARNS (now referred to as the AZLEARNS-Legacy) and required that all public schools in Arizona receive an achievement profile under the state accountability system.

Over the last decade, the ADE has implemented the AZ LEARNS-Legacy accountability system. This complex system provided profiles for schools (i.e., Excelling, Highly Performing, Performing Plus, Performing, and Underperforming) based on snapshots of achievement at one point in time; yet educators statewide were asking for an accountability system that would recognize the academic *growth* of students over time.

The A-F Letter Grade System was passed by the Arizona Legislature in 2010 and adopted in June, 2011 by the State Board of Education[1]. With its enactment, the A-F Letter Grade System provides a consistent yardstick from year to year to track a school's or LEA's (Local Education Agency – charter holders and districts) progress over time. The new A-F Letter Grade Accountability Systems is distinct for two reasons.

1. The A-F Letter Grade System was designed to place equal value on current year achievement and the academic growth, including the growth of all students and schools' lowest achieving students. It emphasizes longitudinal student-level growth as a primary indicator of school achievement. Including longitudinal student growth in an accountability system is particularly important because it recognizes the degree to which lowest achieving students gain academic ground.

2. Second, school districts and charter holders (LEAs) are also being held accountable under the new system and will receive annual letter grades using the same calculation as individual schools. Arizona's Superintendent of Public Instruction, John Huppenthal felt strongly that districts should be recognized for accomplishments in building their schools' capacity to provide high quality instruction to all students. In his former role as State Senator and sponsor of the original A-F Letter Grade legislation, Superintendent Huppenthal was also determined to hold LEAs accountable when they failed to demonstrate success. Thus, in its implemented form, the A-F Letter Grade System also acknowledges the responsibility that LEAs have in ensuring the

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[1] A.R.S. §15-241 states that the Department shall determine the criteria for each school and LEA classification using a research based methodology, which is defined as the systematic and objective application of statistical and quantitative research principles to determine a standard measurement of acceptable academic progress for each school and LEA.

academic success of the students within the schools they oversee. This is why the A-F Letter Grade System is applied to LEAs as well as to all schools.

A.R.S. §15-241 specifies that all schools[2] and LEAs be held accountable to the A-F Letter Grade system starting in the 2012-2013 school year. Thus, in the 2010-2011 school year, A-F Letter Grades were computed for all schools and districts, but state accountability was based on AZ LEARNS-Legacy profiles. Arizona schools received both designations from the State for the 2010-2011 school year.

See Table 1 for a depiction of the overlap from the two accountability profile systems for Arizona schools

Table 1. Distribution of Schools Receiving AZ LEARNS Legacy Labels and A-F Letter Grades in 2010-2011

	A	B	C	D	Total
Excelling	202	88	1	0	**291**
Highly Performing	65	157	21	0	**243**
Performing Plus	28	278	356	45	**707**
Performing	0	13	108	115	**236**
Underperforming	0	0	1	23	**24**
Total	**295**	**536**	**487**	**183**	**1501**

With the passage of the Federal No Child Left Behind Act (NCLB) in 2001, schools in Arizona eligible to receive Title I Part A federal funds were held accountable to the state expectations under AZ LEARNS-Legacy and to meet federal requirements under NCLB. Those schools' ability to meet Annual Measurable Objectives (AMOs) toward the goal of academic proficiency for all children by the 2013-2014 academic year resulted in the Annual Yearly Progress (AYP) determinations. An AYP determination was made for all schools in Arizona but only schools funded by Title I Part A faced consequences for their ability to make AYP. See http://www.azed.gov/research-evaluation/ayp-technical-manuals/ for more information about NCLB.

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[2] The timing of the final State Board approval of the A-F Letter Grade calculation method, at the end of June, 2011, did not allow for the development of parallel models for alternative schools, extremely small schools, and K-2 schools in the first year, as required by A.R.S. §15-241. The purpose of these models is to allow for the unique characteristics inherent in these schools. Technical changes to models for these school types are being developed in collaboration with Arizona's Accountability Advisory Group. The recommended models and technical changes will be presented to the Arizona State Board of Education for consideration and final adoption by Spring 2012.

Arizona Revised Statute (*A.R.S. §15-241*) requires the following criteria are to be included in the evaluation of schools and LEAs under the new A-F system:

- The percentage of students who met or exceeded on the AIMS assessment
- A student mobility adjustment
- The distribution of achievement at each school *and* LEA
- Longitudinal indicators of student gain
- ELL test results
- The annual dropout rate (High Schools only)
- The annual graduation rate (High Schools only)

State statute mandates that 50 percent of the school and LEA classification determination (i.e., A-F Letter Grade) shall consist of academic performance measurements (i.e. growth). The academic performance measurement shall consist of:

1) a measurement of academic gain for all pupils enrolled at the school or LEA (totaling 50 percent of the growth measure) and
2) a measurement of academic gain for the 25 percent of pupils with the lowest academic performance measurement enrolled at the school or LEA (totaling 50 percent of the growth measure).

Statute also requires that the Department develop parallel models to evaluate the following types of schools in order to account for their unique school characteristics:
- Alternative schools
- Accommodation schools
- Extremely Small Schools
- K-2 schools

Alternative schools, extremely small schools and K-2 schools did not receive a letter grade in 2011. The Department anticipates that models for these school types and technical changes to the A-F formula will be developed in collaboration with school leaders, educators and technical experts. The recommended models and technical changes will be presented to the State Board of Education for consideration and final adoption by spring 2012.

Overview of the A-F Letter Grade Accountability System

The formula used to calculate the A-F Letter Grade for each school is based on a point system that weights students' academic outcomes and academic growth equally. The final score has 200 points possible – 100 for academic outcomes and 100 for academic growth. A letter grade is then assigned to each LEA and school based on the number of points earned.

Figure 1: Components of the New A-F Letter Grade Profile

Components of the New Profile

Growth Score 50%

Composite Score 50%

Growth
ALL
Students

Measures of
Academic Progress
•Percent passing AIMS
•Percent ELL students
reclassified
•Graduation rate*
•Dropout rate*

Growth
Lowest
Performing
Students
(25% percentile
and lower)

*Indicates HS only

Composite Score + Growth Score = A-F Accountability Profile
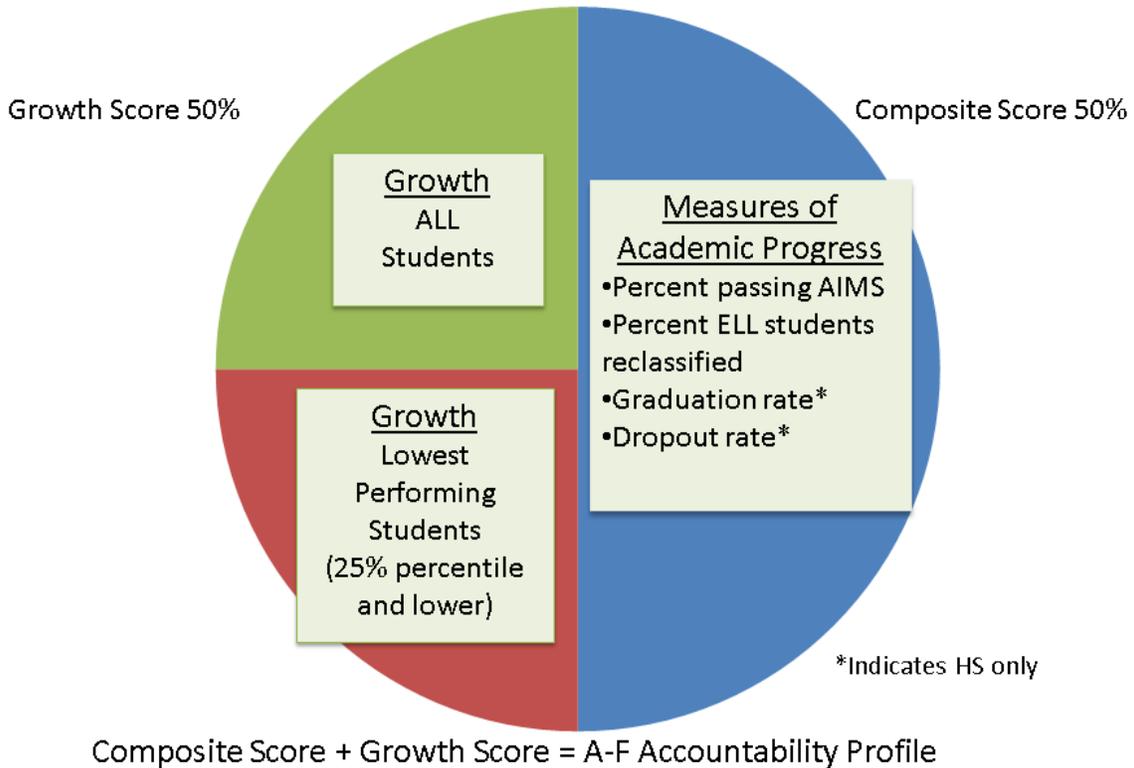
The academic achievement component, the **Composite Score**, of the Letter Grade System holds schools accountable for student proficiency on the AIMS assessment. Proficiency is determined by calculating the percentage of students proficient on the state assessment in a given grade in reading and mathematics, determined as scoring "meets" or "exceeds" at grade-level on AIMS.

The percentage of students proficient on AIMS is calculated by dividing the number of students within a school passing AIMS in the current year by the total number of students taking the exam. This percentage is equal to a point value between 0 and 100.

In addition to the percentage of students passing AIMS in the current year, the composite score includes opportunities for schools/LEAs to earn points for the percentage of English Language Learners (ELLs) who are reclassified as fully English proficient on the Arizona English Language Learner Assessment (AZELLA). For 2011, if a school has 16 or more ELL students in the school and reclassifies 30 percent or more ELL students that were in the ELL program at least 150 days, they receive 3 additional points. High schools are also held accountable for meeting stringent criteria for graduation and dropout rates. High schools can earn 3 points for meeting graduation rate targets and 3 points for meeting dropout rate targets.

The purpose of the **Growth Score** is to acknowledge the academic growth of students within a school or district, even if a student has not yet reached grade-level proficiency. Arizona uses a student-level growth measure – **Student Growth Percentiles** (SGP) – that describe each student's academic gains relative to other students who began at the same point academically. Including a longitudinal student growth component into an accountability system is particularly important because it recognizes efforts of the lowest achieving students to "gain ground" academically from one year to the next.

The **total score** is calculated by adding a school's composite score and its overall growth score together for a possible total between 0 and 200 points. Total points are compared to the grade classification scale in Table 2 below to determine the final A-F Letter Grade.

Table 2. A-F Letter Grades, Total Scores, and Descriptions

Rating	Total Score	Description[1]
A	140-200	LEA/school demonstrates an **excellent** level of performance
B	120-139	LEA/school demonstrates an **above average** level of performance
C	100-119	LEA/school demonstrates an **average** level of performance
D	0-99	LEA/school demonstrates a **below average** level of performance
F		Those schools earning a "D" for three consecutive years

[1] Pursuant to A.R.S. 15-241

Student Data Selection Criteria

The following provides details and descriptions of the selection criteria used to identify the students who were included in the calculation of a school or district letter grade in 2011.

- <u>Full Academic Year (FAY) students</u> – Students were included in the composite and growth portions of the A-F model if they were enrolled within the first ten days of the school's calendar year and continuously enrolled up until the date of AIMS testing.

- <u>Students with a valid test score</u> – Students who had a performance level reported from the AIMS assessments were included in the composite and growth portions of the model. (performance > 0)

- <u>English Language Learner (ELL) students</u> – Any students identified and categorized as ELL, were non-mobile (i.e. FAY) and had a valid test score are included in the Composite and growth portions of the model.

- <u>Special Education (SPED) Students</u> - SPED students who did not take AIMS-A, whose IEP allowed for testing without modifications were also included.

- For the growth component, students that had, at minimum, a test score for each of the two most recent school years (i.e., FY10 and FY11). Students with test scores for 2011 only were included in the composite portion of the model, but were *not* included in the student growth calculations.

Data used to Calculate Letter Grades

- AIMS Mathematics and Reading scale scores were used to measure growth for students in grades 4-8 from the years 2006 through 2011.

- Growth for students in grade 3 is calculated using Grade 2 Stanford 10[3] Reading and Mathematics scale scores.

- Growth for Grade 10 students is calculated using Grade 9 Stanford 10[4] Reading and Mathematics scale scores and their AIMS scores from as far back as 2006.

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[3] Using the Stanford 10 Grade 2 scale scores and the AIMS Grade 3 scales scores was approved by the author of the growth model, Dr. Damian Betebenner, with the explanation that the scale scores are changed to percentiles in the calculation of the SGP. This was confirmed by ADE's Technical Advisory Committee (TAC) made up of national recognized experts in measurement.

[4] The same reference applies to Grade 10 SGPs as noted in footnote 1.

Components of the Model

Composite Score (100 points + Additional points)

The academic achievement component of the A-F Letter Grade System holds schools accountable in the current year on four measures for high schools and two measures for elementary schools. Table 4 provides a brief description of the components included in the Composite portion of the A-F model. Each component is described in greater detail in the following sections.

Table 4: Academic Achievement Measures, Corresponding Grades, Description and Point Values in the A-F Letter Grade Determinations

Measure	Description	Points Possible
Proficiency on AIMS test	Percent of students who Meet or Exceed the standards in reading & mathematics in the current year	0-100
Proficiency on AZELLA	30% of ELL students reclassified as proficient	0 or 3
Annual dropout rate (high school only)	Meet Dropout Target	0 or 3
Annual graduation rate (high school only)	Meet Graduation Rate Target	0 or 3

Proficiency on AIMS in the Current Year

Proficiency is determined by calculating the percentage of students who Meet or Exceed the standards in reading and mathematics in the current year. The percentage of students passing is converted to a point value between 0 and 100 points.

Example

School wide Average Percent Passing (Reading)	87.97%
School wide Average Percent Passing (Mathematics)	81.58%
Overall Average Percent Passing	84.78%
Total Points for Percent Passing	**85**

Elementary Schools

Students in grades 3-8 who took the AIMS Reading and Mathematics tests and were FAY were included. The percent of those students who passed the AIMS test in the current year were identified separately for Reading and Mathematics. For each subject, across all grades, the number of students passing was divided by the total number of students who took the subject test. The percent passing in Reading and Mathematics were then averaged. The final average percent across all grades and both subjects was converted into points (0-100 points possible).

$$\text{Percent Passing in Current Year} = \frac{\text{\# Students Passing AIMS, current year}}{\text{\# Students Tested, current year}}$$

High Schools

The percentage of FAY students in grade 10 who met or exceeded the AIMS Reading and Mathematics in the current year were included. Because students are permitted to re-take the "grade 10" test during their grade 11 or grade 12, up to 2 times per year, the high school calculation also includes the highest scores attained in each subject by students between grades 10 and 12. For each subject, the number of students passing was divided by the total number of students who took the subject test (students who retook the test were only counted once). The percent passing in Reading and Mathematics were then averaged. The final average percent across all grades and both subjects was converted into points (0-100 points possible).

$$\text{Percent Passing in Current Year} = \frac{\text{\# Students Passing AIMS, current year}}{\text{\# Students Tested, current year}}$$

Results of the English Language Learners Test

The achievement composite score also accounts for the percentage of English Language Learners (ELL) who were reclassified as fully English proficient on the Arizona English Language Learner Assessment (AZELLA) during the academic year[5]. Elementary and high schools **with 16 or more ELL students** can earn 3 points for **reclassifying 30 percent or more** students as proficient in English. These students must have been continuously enrolled in an ELL program for at least 150 days.

Criteria for ELL Bonus points (3)
ELL students enrolled continuously in the ELL program within the school for at least 150 calendar days
Only schools with 16 or more students are evaluated
30% or more of students across all grades reclassified as proficient

For 2011 only, schools were held accountable for ELL data from either the 2009-2010 OR 200-2011 school year. That is, if a school reclassified 30 percent of its students in 2010 OR 2011, the school received the ELL points. But, if the school's reclassification rate was less than 30 percent in BOTH years, the school did not receive ELL points.

Beginning in 2012, schools and LEAs will be held accountable for current year ELL data for A-F letter grade calculations.

To determine the reclassification rate, the number of students scoring proficient was divided by the total number of students who took the AZELLA test.

$$\textbf{Percent Moving to Proficient in Current Year} = \frac{\textbf{\# Students scoring Proficient in the current year}}{\textbf{\# Students Tested on AZELLA in the current year}}$$

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[5] Arizona identifies ELL students by use of a process that begins with the Home Language Survey also known as the Primary Home Language Other Than English (PHLOTE). Once a response on the PHLOTE identifies a student's home language as any other than English, then AZELLA is administered. For more information on the AZELLA and Arizona's ELL programs, please see http://www.azed.gov/english-language-learners/.

To be included in this calculation, students must meet several criteria:

1. Be identified as ELL on the AZELLA at any point, at least within the prior 2 academic years

2. Be continuously enrolled in the ELL program within the school for at least 150 calendar days

Annual 5-year Cohort Graduation Rate

High schools are also held accountable for meeting stringent criteria for graduation rates. The **Graduation Rate** is a longitudinal measure of how many students graduate from high school within 5 years of first entering grade 9. High schools can earn 3 points, above and beyond the possible 100 from the AIMS percent passing, by meeting one of three criteria:

Graduation Rates		Criteria to meet the Target
3-Year Average		$\geq$ 90%
Current Year	$\geq$ 74%	1% point Increase
	< 74%	2% point Increase

The graduation rate formulas used are:

$$\text{Single Year Graduation Rate} = \frac{\text{\# in cohort who graduated within 5 years}}{\text{Original cohort + Transfers in - Transfers out}}$$

$$\text{Three-year Average Graduation Rate} = \frac{\text{2008 + 2009 + 2010 five-year grad rates}}{\begin{array}{c}\text{(2008 Original cohort + Transfers in - Transfers out) +}\\ \text{(2009 Original cohort + Transfers in - Transfers out) +}\\ \text{(2010 Original cohort + Transfers in - Transfers out)}\end{array}}$$

In 2011, the Baseline Year was 2006 or the school's first year serving grade 12, whichever was the latest. A school's annual average growth is calculated by subtracting the baseline year's rate from the current year's rate and dividing by the number of years spanned in the calculation.

$$\text{Average Annual Growth} = \frac{\text{Current one-year rate - Baseline one-year rate}}{\text{Number of years in span}}$$

Calculating Bonus Points for Dropout Rate

The **dropout rate** is an annual measure of how many students drop out of a school during a twelve-month reporting period. High schools and LEAs can earn 3 points by meeting one of three criteria:

Dropout Rates		Criteria to meet the Target
3-Year Average		$\leq$ 6%
Current Year	$\leq$ 9%	1% Point Decrease
	> 9%	2% Point Decrease

The dropout rate formulas are:

$$\text{One-year Dropout Rate} = \frac{\text{\# students who dropped out}}{\text{\# students enrolled during the school year}}$$

$$\text{Three-year Dropout Rate} = \frac{\text{Total \# dropouts for 2009, 2010, and 2011}}{\text{Total \# of students enrolled in 2009, 2010, and 2011}}$$

In 2011, the Baseline Year was 2006 or the school's first year of operation, whichever was the latest. A school's annual average decrease is calculated by subtracting the baseline year's rate from the current year's rate and dividing by the number of years spanned by the calculation. A school will not be evaluated on dropout rate if it has less than 15 students in the group.

$$\text{Average Annual Decrease} = \frac{\text{Baseline one-year rate - Current one-year rate}}{\text{Number of years in span}}$$

Calculating Total Composite Points

The composite points comprise half of the total points in a school or LEA's Letter Grade calculation. The composite points are calculated by adding the points earned for each element on the achievement side.

|	Elementary/ Middle Schools	High Schools
Percent Passing AIMS	0 - 100	0 - 100
ELL Target	0 or 3	0 or 3
Graduation Rate Target	-	0 or 3
Dropout Rate Target	-	0 or 3
TOTAL	**103**	**109**

Growth Score (100 possible points)

Overview

The purpose of the growth component is to acknowledge the academic growth of students within a school or district, even if a student has not yet reached grade-level proficiency. In June, 2011, the Arizona State Board of Education approved for use in the A-F Letter Grades a student-level growth measure – **Student Growth Percentiles** (SGP) – that describe each student's academic gains relative to their academic peers with the same academic history. Including a longitudinal student growth component into an accountability system is particularly important because it recognizes the degree to which the lowest achieving students strive to "gain ground" academically from one year to the next.

Conceptually, a **student growth percentile** represents how "typical" a student's academic growth is by examining their achievement relative to their academic peers—those students with comparable prior achievement. Simply put, for every student in the state, this measure selects students in the same grade level, with the same AIMS scores over a number of years to determine a "**peer group**". Then, for each student, the current year AIMS score is compared to the current year scores of the other students in his/her peer group. If the student's current year score exceeded the scores of most of their academic peers, the student has done well, comparatively. If the student's current year score was less than the scores of their academic peers, the student has not done well, comparatively. Figure 2 helps to illustrate the SGP. For technical details on the calculation of the SGP, please see Appendix A.

Figure 2: Illustration of the Peer Groups and SGP for 2 sample students
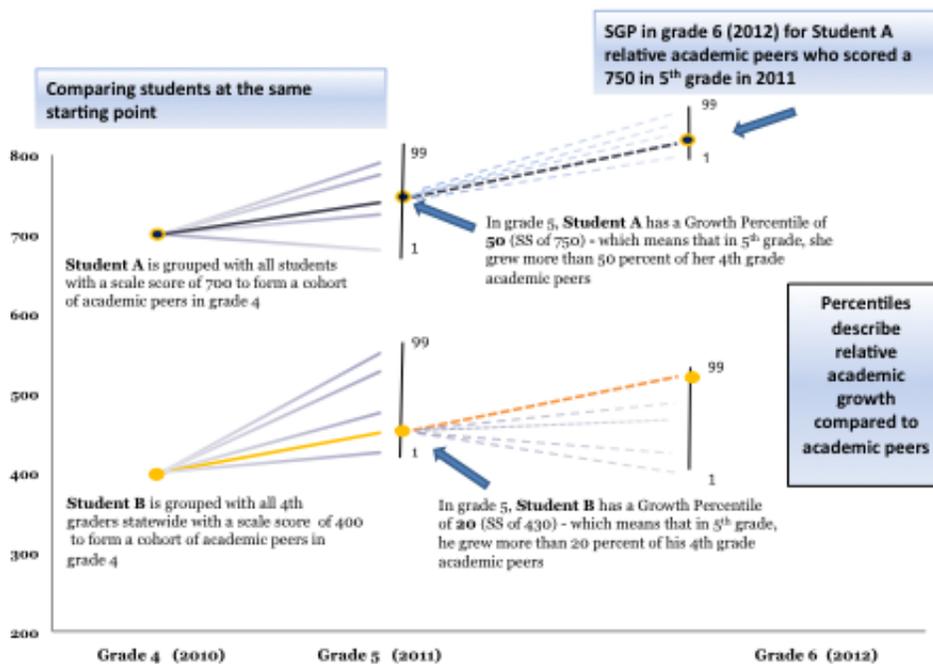
For each "eligible" student in the state, an SGP is calculated separately based on AIMS mathematics and reading. Students must have at minimum 2 consecutive years of AIMS test data to be included in the SGP calculation. To establish more precise peer groups, up to five consecutive most recent years of AIMS test data are included in the SGP calculation.

The SGPs of eligible students are aggregated to the school level, or to the LEA level for accountability in the state's A-F Letter Grade System. First, the **median** growth for all students within a school is calculated, which is the average growth of students within a school. Next, the median SGP was calculated for the students in the bottom 25 percent in their school (for details on identifying the bottom quartile students, please see page 20). ADE then averages these two medians to calculate the school-wide or district-wide total growth score, and uses that number to award growth points, up to 100 possible points.

Calculating Median Growth Percentiles & Growth Points

For each school and LEA, SGPs were used to derive the average growth for all FAY students and the bottom 25 percent of students. Because the SGP is a ranked measure (more precisely, a probability distribution), the statistically appropriate measure of the average is the median. The median best describes the center of the distribution.

The steps to calculate a median growth percentile for all students within a given school is as follows:

1. For each grade, a median growth percentile was calculated from the distribution of SGPs of all students. This is done separately by subject.

2. The median SGP for Reading and Mathematics for each grade were averaged.

3. The school-wide median for Reading and the school-wide median for Mathematics were averaged for an "All Students" median between 1 and 99.

For example, an elementary school serving grades 3-8:

Grade	Mathematics	Reading
3	47	37
4	31	51
5	56	67
6	61	41
7	42	38
8	48	25
	47.5	43.2
Median Growth – 'All Students'	44	

Identifying the Bottom Quartile Students

Calculating the bottom quartile of students is based upon **prior year achievement** on the reading and mathematics sections of AIMS. Student growth percentiles are not used to identify the bottom quartile, but rather, once the bottom quartile of students is identified, the median growth percentile for this group is calculated for a school or district for use in their A-F Letter Grade formula.

For all students in grades 4-8, the first step is to calculate the difference between each student's prior year AIMS scale score and prior year *grade level* AIMS passing cut score (cut score for *Meets*) in Mathematics and Reading separately.

***Difference* = (Prior Year Scale Score – Prior Year Grade-Level "Pass" Cut Score)**

The ADE developed adjusted criteria for identifying the bottom 25 percent based on prior year scores for students in grade 3 and grade 10 because the AIMS test is not administered in grade 2 or grade 9. The Stanford 10 norm-referenced test is administered to students in Arizona in grade 2. To determine the bottom 25 percent for grade 3, Stanford 10 reading and mathematics scale scores from grade 2 are rank ordered from low to high and separated into quartiles. For grade 10 students, their grade 8 AIMS scores are used as the "prior year" data in the same manner as described for grades 4-8 above to find the bottom quartile.

Difference scores were calculated using the following cut scores for reading and mathematics:

Grade	Reading Cut Score	Mathematics Cut Score
4	431	347
5	450	366
6	468	381
7	478	398
8	489	411
10*	499	537

* AIMS cut scores in grade 8 used to determined *Difference* in grade 10

Reading Difference

IF Current Year Grade is:			(Minus)	Reading
4	=	Grade 3 (Student Prior Year Scale Score)	-	431
5	=	Grade 4	-	450
6	=	Grade 5	-	468
7	=	Grade 6	-	478
8	=	Grade 7	-	489
10	=	Grade 8*	-	499

* AIMS cut scores in grade 8 (2009) used to determined *Difference* in grade 10

Mathematics Difference

IF Current Year Grade is:			(Minus)	Mathematics
4	=	Grade 3 (Student Prior Year Scale Score)	-	347
5	=	Grade 4	-	366
6	=	Grade 5	-	381
7	=	Grade 6	-	398
8	=	Grade 7	-	411
10	=	Grade 8*	-	426

* AIMS cut scores in grade 8 (2009) used to determined *Difference* in grade 10

Next, a mathematical transformation was used to remove negative numbers and account for the different passing scores in each grade, so that all students could be compared in a school, regardless of grade level. This transformation does not alter the essence of the data because

each data point receives the same treatment and is reversible when the data need to be brought back to their original structure.

In this transformation, each student's **Difference** score is weighted by the prior year AIMS performance level, as indicated below:

Performance Level	Weight
Falls Far Below	1
Approaches	2
Meets	3
Exceeds	4

Finally, the numeric performance level is multiplied by 1,000, which adjusts for negative values from the *Difference* score but keeps the students in the same ordinal ranking. This step is calculated separately for high schools.

Adjusted Difference = (Difference + [AIMS performance level x 1,000])

For each school, across all grades served, students' **Adjusted Difference** scores are rank ordered from low to high by subject and separated into quartiles. The lowest quartile of students in reading and mathematics represent a school's lowest performing students – the bottom 25 percent. The growth percentiles of each student in this group are then used to determine the median growth score in reading and mathematics within each school.

Example:

				STATE-LEVEL	STATE-LEVEL	SCHOOL-LEVEL
2011 Grade	2010 Scale Score	2010 Cut Score	*Difference* score (2010 scale score - 2010 cut score)	2010 Performance Level	*Adjusted Difference Score* (Difference + (AIMS performance level x 1,000))	Quartile (1=25%, 2=50%, 3=75%, 4=90%)
6	315	381	-66	1	934	Determined by rank order of Adjusted Difference scores so that the lowest quartile of students are those with the lowest adjusted difference scores within a given school

Calculating Growth Points

The determination of growth points for a school or district was based 50 percent on the SGP of all students and 50 percent on the SGP of the bottom quartile students. The *Overall Growth Score* was the average of the **Median SGP** of 'All Students' and the Bottom 25 percent and equal to a point value between 0 and 100.

	Points Possible
Median growth percentile of all students in Reading and Mathematics combined ("All Student" Rank)	1 to 100
Median growth percentile of bottom quartile of students in Reading and Mathematics combined (Bottom 25%)	1 to 100
The <u>average</u> median of All Students and the Bottom 25% represents the Overall Growth Score (1-100 points)	

Total Score- Calculating a Letter Grade

The total score for a school or LEA was calculated by summing the composite score and the growth score together for a possible point total between 0 and 200 points. The total points earned by a school or LEA are compared to the classification scale shown in Table 5 to determine the Letter Grade.

Table 5: Range of Possible Points used to Determine Final Letter Grades

Letter Grade[1]	Total Points
A	140 – 200
B	120 - 139
C	100 - 119
D	0 - 99

[1] A letter grade of 'F' is assigned to a school or LEA receiving a letter grade of 'D' for three consecutive years

A-F APPEALS PROCESS

Under state law, schools and districts are not being held accountable to the A-F Letter Grade Accountability system for school improvement purposes until the 2012-13 academic year[6]. As a result, the ADE will not establish a substantive appeals process for A-F letter grades until that time and <u>will not accept or consider any appeal of a preliminary or final A-F letter grade from a school or LEA in any form (electronic or otherwise) for the 2011-2012 academic year[7]</u>.

Because statistical appeals are no longer available, schools and LEAs that wish to address any data issues and correct their data may do so during the data correction window in order to confirm data accuracy. <u>This Data Correction window has replaced the statistical appeal process.</u> Note that LEAs are solely responsible for verifying information for their schools. Schools and LEAs will be notified in advance when the data correction window is available when ADE distributes its Accountability Timeline memo in the spring of 2012.

<u>If an LEA does not change the information for its schools through the correction process, the ADE rightly assumes that the schools on file and all data available are correct as listed.</u>

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[6] Legislation is currently progressing through the Arizona Legislature to change this to the 2011-2012 school year.

[7] If legislation is accepted regarding holding schools and LEAs accountable for the 2011-2012 school year, then substantive appeals will be accepted and considered for the A-F Letter Grade.

Appendix A: Technical Information on Student Growth Percentiles

Quantile regression is used to calculate student growth percentiles. The methodology, introduced by Koenker and Bassett (1978), is ideally suited for estimating the family of conditional quantile functions (i.e., percentile curves). Growth percentiles are based upon the estimation of the conditional density associated with a student's score at time t using the student's prior scores at times $1, 2, . . . , t-1$ as the conditioning variables. Given the conditional density for the student's score at time t, the growth percentile is defined as the percentile of the score within the time t conditional density (Betebenner, 2007).

For Arizona, this means that the estimation of the conditional density associated with a student's score in 2011 is based upon the student's prior scores back to 2006. The result is a percentile scale that reflects the likelihood of such an outcome given the student's prior achievement and a corresponding percentile rank for each student that demonstrates academic growth relative to a student's academic peer group.

Growth is calculated for all eligible students statewide using a free, downloadable statistical software package called 'R' (see http://www.r-project.org/ for more information on 'R'). Damian Betebenner of the *National Center for the Improvement of Educational Assessment* developed a SGP package for 'R' (quantreg) that calculates growth using statewide, matched student-level assessment results (McConnell, ACSA, 2011).