

Appendix A

Arkansas Adequate Yearly Progress¹ (Including the Growth Model Pilot)

Proficiency Levels for Math and Literacy

Arkansas administers the Arkansas Benchmark Exams in grades 3-8. Proficiency level cut-offs depend on grade level (700 is the maximum score).

PROFICIENT SCALE SCORE STANDARDS		
GRADE LEVEL	LITERACY	MATHEMATICS
3	500	500
4	559	559
5	604	604
6	641	641
7	673	673
8	700	700

	Algebra	Geometry	Literacy Grade 11
Below Basic	≤ 150	≤ 153	≤ 168
Basic	151 - 199	154 – 199	169 – 199
Proficient	200 - 249	200 – 249	200 - 249
Advanced	≥ 250	≥ 250	≥ 250

The “Status-Plus” model applies for grades 3-12

For the Status component of the model:

In Grades 3-8, Algebra, Geometry and Grade 11 Literacy:

- Proficient score for status and safe harbor component:
 - Students with Proficient and Advanced performance levels represent proficient scores and count in the numerator and the denominator of the percentage proficient calculation that is compared to the Annual Measurable Objective (AMO).
- Not Proficient score for status and safe harbor component:
 - Students with Below Basic or Basic performance levels represent non-proficient scores and count in the denominator of the percentage proficient calculation that is compared to the AMO.

For the Growth component of the model:

In Grade 3:

- Proficient score for growth component:
 - Students with Proficient and Advanced performance levels represent proficient scores and count in the numerator and denominator of percentage proficient calculation that is compared to AMO.
- Not proficient score for growth component:

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(Version 3; Confirmed: NP 2/18/08)

Appendix A

- Students with Below Basic or Basic performance levels represent non-proficient scores and count in the denominator of the percentage proficient calculation that is compared to the AMO.

In Grades 4-8:

Proficient score for growth component:

- Proficient and Advanced performance levels represent proficient scores and count in the numerator and the denominator of the percentage proficient calculation that is compared to the AMO.
- Students with Below Basic and Basic performance levels who demonstrated satisfactory growth were counted in the numerator and denominator of percentage proficient calculation that is compared to the AMO.
- Proficient below Proficiency Threshold (PT) represent proficient scores with unsatisfactory growth and count in the numerator and denominator of percentage proficient calculation that is compared to the AMO. There is no penalty for unsatisfactory growth. These students are not removed from the numerator of the percentage proficient calculation.

Not proficient score for growth component:

- Students with Below Basic or Basic performance levels who *did not* demonstrate satisfactory growth represent non-proficient scores and count in the denominator of the percentage proficient calculation that is compared to the AMO.

In Algebra, Geometry, Grade 11 Literacy:

Proficient score for growth component:

- Students with Proficient and Advanced performance levels represent proficient scores and count in the numerator and denominator of percentage proficient calculation that is compared to AMO.

Not proficient score for growth component:

- Students with Below Basic or Basic performance levels represent non-proficient scores and count in the denominator of the percentage proficient calculation that is compared to the AMO.

How is proficiency calculated?

For student i at school j in grade k . . .

Proficient:

if score $x_{ijk} \geq$ the scaled cutoff score for grade k . (SEE TABLE ABOVE).

Not proficient:

if score $x_{ijk} <$ the scaled cutoff score for grade k . (SEE TABLE ABOVE).

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(Version 3; Confirmed: NP 2/18/08)

Appendix A

How is growth calculated?

Let:

GI = Growth Increment = required increase over the next year in scale score to ultimately reach proficiency at Grade 8 for a student at Grade a with current-grade scale score (below Proficient) of x ;

PT = Proficiency Threshold = required increase over the next year in scale score to maintain proficiency or above at Grade 8 for a student at Grade a with current-grade scale score (Proficient or above) of x ;

$P_{k=8}$ = Proficiency Scale Score Standard at Grade 8 = 700;

X_k = Student's current grade scale score

k = Student's current grade level

$k + 1$ = Student's subsequent grade level

P_k = Proficiency Scale Score Standard for student's current grade

P_{k+1} = Proficiency Scale Score Standard for student's subsequent grade

[Note: Proficiency Scale Score Standards (P_a and P_b) obtained from Table 1.]

Next year's target growth = $\left(\frac{\text{Difference between this year's and next year's standard}}{\text{Difference between this year's and 8th grade's standard}} \right) \times \text{Difference between this year's score and 8th grade's standard}$

$$PT_{k+1} = \left(\frac{P_{k+1} - P_k}{P_{k=8} - P_k} \right) \times P_{k=8} - X_k \quad \text{if } X_k \geq P_k$$

$$GI_{k+1} = \left(\frac{P_{k+1} - P_k}{P_{k=8} - P_k} \right) \times P_{k=8} - X_k \quad \text{if } X_k < P_k$$

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(Version 3; Confirmed: NP 2/18/08)

Appendix A

For example:

Grade	Standards				On Target			Above			Below		
	Pk+1 - Pk	Pk=8 - Pk	(Pk+1 - Pk) / (Pk=8 - Pk)		Xk	Pk=8-Xk	PT or GI	Xk	Pk=8-Xk	PT or GI	Xk	Pk=8-Xk	PT or GI
3	500	59	200	30%	500	200	59	570	130	38	480	220	65
4	559	45	141	32%	559	141	45	579	121	39	539	161	51
5	604	37	96	39%	604	96	37	624	76	29	584	116	45
6	641	32	59	54%	641	59	32	661	39	21	621	79	43
7	673	27	27	100%	673	27	27	693	7	7	653	47	47
8	700	--	0	--	700	0	--	700	0	--	700	0	--

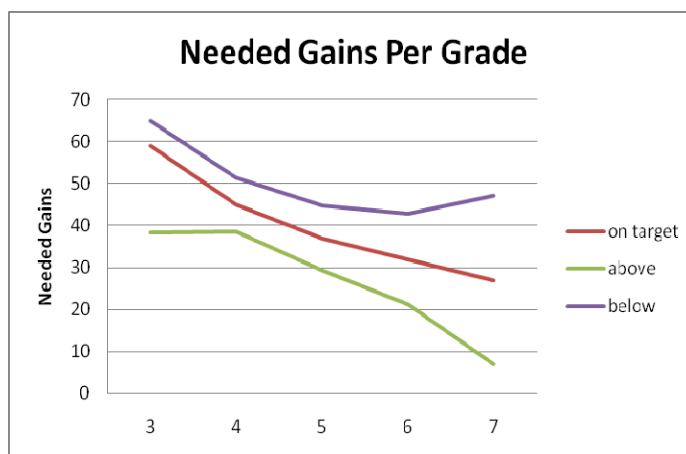


Table: "Proficient Scale Score Standards" (Cut Scores) and Growth Expectations for Arkansas Benchmark Examinations in Literacy and Mathematics*

PROFICIENT SCALE SCORE STANDARDS			GROWTH EXPECTATIONS		
GRADE	LITERACY	MATHEMATICS	GRADE PROGRESSION	LITERACY	MATHEMATICS
3	500	500	3 to 4	59 points	59 points
4	559	559	4 to 5	45 points	45 points
5	604	604	5 to 6	37 points	37 points
6	641	641	6 to 7	32 points	32 points
7	673	673	7 to 8	27 points	27 points
8	700	700	3 to 8	200 points	200 points

* Table assumes a student who makes the Proficient cut score at each respective grade level.

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(Version 3; Confirmed: NP 2/18/08)

Appendix A

Aggregation to School Status

The Annual Measurable Objective (AMO) is a minimum percentage of students who must meet or exceed proficiency, after which the school must meet safe harbor provisions to avoid sanctions.

Schools' statuses in meeting AYP for combined population and all subgroups are determined using a 3 step process. Two of these steps, referred to as status and growth, involve calculating the percentage of full academic year students with proficient scores and comparing this percentage to the AMO. In Arkansas, the AMO is different for different grade spans K-5, 6-8, and 9-12. The AMO increases each year to 100 percent by 2014². The lower bound of a confidence interval is applied to the AMO in status determination.

Safe Harbor calculation as defined in the AYP workbook is different from the status and growth calculations.

Step 1. The first step consists of applying "One or Three Year" calculations of percentage proficient, and determining the best case of status for the school from these two calculations. The one year option is a 2003 amendment to the AYP workbook. All calculations for percentage of students proficient exclude students who are highly mobile (less than full academic year).

- A. Schools' percentages of students proficient in the most recent year are calculated inclusive of all tested levels at the school, and compared with the AMO for the grade span of the school. A confidence interval is applied to the AMO values.
 - a. Each group (combined population and subgroups) is assigned a status based on the percentage proficient and prior year status.
 - i. Groups that meet the AMO are assigned MS for Met Standards, SI_M for schools in school improvement meeting the AMO for first time since designation of school improvement (SI).
 - ii. Groups that did not meet the AMO are assigned A for Alert if the group missed the AMO once, SI_1 if the group missed the AMO for two consecutive years, SI_2 if the group missed the AMO for three consecutive years, etc.
- B. For the three year model, AYP determinations are made by dividing the sum of all proficient students for three consecutive years by the total number of students tested for those three years. As with the one year calculation, all scores for all tested levels are combined into a math and literacy calculation. This 3 year percentage proficient is then compared to the AMO values with the confidence interval applied.
 - a. Each group is assigned a status based on this 3 year calculation.
 - i. Groups that meet the AMO are assigned MS for Met Standards, SI_M for schools in school improvement meeting the AMO for first time since designation of school improvement (SI).
 - ii. Groups that did not meet the AMO are assigned A for Alert if the group missed the AMO once, SI_1 if the group missed the AMO for two consecutive years, SI_2 if the group missed the AMO for three consecutive years, etc.
- C. The one year set of group statuses is compared to the three year set of statuses. The most beneficial set is selected for each subject. It is important to note that the statuses are selected as a set. Schools can not select among the group's one or 3 year statuses to create the best case. The most favorable case is selected from one or 3 year, not a combination of the group statuses from each set.

² <http://www.ed.gov/admins/lead/account/letters/acar4.html#att>

Appendix A

Three year averaging is a common practice in proficiency calculations and produces a weighted average that controls for student mobility, retention, and other sources of bias.

Step 2: Safe Harbor is determined by calculating schools' percentage reduction in the number of students scoring below proficient for each group in math and literacy. This reduction in percentage of students proficient is compared to the 10% reduction requirement indicated in the AYP workbook, Section 3.2b. Schools must reduce the number of students below proficient by 10% in order to meet the Safe Harbor provision.

- A. The lower bound of a 75% confidence interval is applied in this step.
- B. In addition, schools must meet 95% tested to be eligible for Safe Harbor.
- C. Schools are then assigned a status for combined population and each subgroup in math and literacy that indicates if they met the AMO standard through the Safe Harbor provision.
 - a. Groups meeting the provision for Safe Harbor are assigned a MS (SH) or a SI_M (SH) to indicate AYP was met for the group through Safe Harbor.
 - b. Groups not meeting the provision for Safe Harbor default to the status assigned in step 1.

Step 3: Growth model applied. In the final step of AYP status determination, a second calculation of the percent of students proficient for each group is employed.

- A. The growth calculation of the percentage of students proficient includes the addition of students who met satisfactory growth, but were not proficient. These students are added to the numerator in the calculation. No confidence interval is applied when comparing to the AMO. Status is assigned to each group based on the growth-adjusted percentage of students proficient.
 - a. Groups meeting the AMO with the growth-adjusted percentages receive a MS or SI_M.
 - b. Groups not meeting the AMO with the growth-adjusted percentages receive an A for Alert, or SI_1, SI_2, SI_3... dependent on the number of years the group has failed to meet the AMO or Safe Harbor.

Overall status determination follows the group status determination processes (Steps 1-3). Overall status determination involves examination of the status of all groups within the same subject. Schools must receive a status of MS, MS (SH), SI_M, or SI_M (SH) for all groups within the same subject to receive a subject status of MS or SI_M. Schools that do not meet AYP for all groups within the same subject receive a status designation equal to the highest phase of the school improvement designations.

For example, if the African American group is designated as Alert for missing AYP in math for the first year and the economically disadvantaged group is designated as SI_2 for missing AYP in math for the third year in a row, then the overall status for math would be SI_2.

Once subject status is determined, the secondary indicator is checked for status. Schools not meeting the secondary indicator standard can also proceed through the school improvement phases. Schools are assigned a secondary indicator status of MS, SI_M, A, SI_1, SI_2, ... predicated on the number of years the school met on the secondary indicator. Attendance is used for K-5 and 6-8 grade spans. Graduation rate is used for 9-12 grade spans.

Final school status for the year is determined by selecting the most severe of the three statuses: Overall literacy status, overall mathematics status and secondary indicator status.

Schools can also be flagged on final status if they fail to meet 95% tested for the combined population for two consecutive years.

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(Version 3; Confirmed: NP 2/18/08)

Appendix A

Appendix A

	K-5 Math	6-8 Math	9-12 Math	K-5 Verbal	6-8 Verbal	9-12 Verbal
Increase per year	7.50	8.96	8.85	7.20	8.10	8.06
2005-06	40.00	29.10	29.20	42.40	35.20	35.50
2006-07	47.50	37.96	38.05	49.60	43.30	43.56
2007-08	55.00	46.83	46.90	56.80	51.40	51.63
2008-09	62.50	55.69	55.75	64.00	59.50	59.69
2009-10	70.00	64.55	64.60	71.20	67.60	67.75
2010-11	77.50	73.41	73.45	78.40	75.70	75.81
2012-12	85.00	82.28	82.30	85.60	83.80	83.88
2012-13	92.50	91.14	91.15	92.80	91.90	91.94
2013-14	100.00	100.00	100.00	100.00	100.00	100.00

Inclusion, Minimum *n*, Confidence Intervals, and Subgroups?

Notes Re: Inclusion³

Based on a student's IEP (Individual Education Program) a student may take the ACTAAP assessment with or without accommodation, or an alternate assessment. Regardless of a regular administration of the exam or an alternate assessment, the student's score is part of the AYP determination for the school and any appropriate subgroups.

Students with disabilities who score proficient are counted towards AYP for a given school or subgroup provided they do not comprise more than 1% of all students tested. Districts with alternately assessed students who exceed the 1% cap for proficient scores select the proficient scores to remove from AYP calculations, thereby allowing the district to comply with the cap.

LEP students are also required to be part of the assessment, however they may be eligible to take the test with accommodations depending on language proficiency.

Arkansas allows LEP students, during their first year of enrollment in U.S. schools, to have the option of taking the reading/language arts content assessment in addition to taking the English language proficiency assessment. For AYP calculations, state allows inclusion in the LEP subgroup, for up to two years, scores of students who have attained English proficiency. Schools have the option to include scores of students in their first year of enrollment in US in the literacy AYP calculations.

Notes: Re: Minimum *n*

The minimum number of students required for AYP determination is 40.

³ CCSSO. CCSSO State Accountability Profiles, 2005-2006. (<http://accountability.ccssso.org>)

Appendix A

Subgroups count towards AYP if...

$n_{\text{TOTAL ENROLLMENT}} \leq 800$ for school & district: minimum $n = 40$

$n_{\text{TOTAL ENROLLMENT}} \geq 800$ for school & district: $.05(\mu_{\text{DAILY ATTENDANCE}}) \leq \text{minimum } n \leq 200$

All Students $n = 40$

LEP Students $n = 40$

SWD Students: $n = 40$

Districts/Schools $n =$ If $n < 800$, minimum $n = 40$;
if $n > 800$, minimum $n = 5\%$ of average daily attendance,
but no greater than 200.

Small Schools: $n = 40$

Confidentiality or Reporting n: $n = 10$

Notes Re: Confidence Intervals

The State of Arkansas uses a 70% confidence interval for percent proficient by subject area (reading and mathematics) for AYP determination purposes. The lower bound of the confidence interval can be applied to the AMO for that grade span/year/subject area. The lower bound of a 75% confidence interval is applied to Safe Harbor calculations of proficiency change.

Included Subgroups

All Students
Economic Status
African American
Hispanic
White
SWD Students
LEP Students

Match Rates for Growth (longitudinal match)

Match rates for 2006/07 were 92% for longitudinal matching.

What about students who score proficiently and then decline?

That's the idea behind the Proficiency Threshold. A student who scores proficient one year has to continue to maintain a certain score *above* proficiency, but at a lower rate of progress than a below-proficient student.

The rationale for this is—according to the Arkansas Dept. of Ed.—to ensure proficient students are “on a path that will continue progress and not fall below Proficient by 8th grade.”⁴ However, students who did not make satisfactory growth by maintaining a score above their threshold were not removed from the numerator of the calculations for percent proficient for growth.

⁴ Arkansas Dept. of Ed. November 2006. Arkansas Growth Model Proposal. (Attachment I).

Appendix A

For 2006-07 AYP results for Schools in Improvement view the spread sheet at http://arkansased.org/nclb/pdf/ayp_si_2007_101907_rev121007.pdf

Schools meeting standards for literacy, math and the secondary indicator totaled 559.
Schools designated in Alert, missing AYP for literacy, math or the secondary indicator, totaled 146.

A summary of status is given below for 2006-2007

School Improvement Status	Number of Schools
Year 1	77
Year 1 MS	32
Total Year 1	109
Year 2	51
Year 2 MS	13
Total Year 2	64
Year 3	44
Year 3 MS	29
Total Year 3	73
Year 4	54
Year 4 MS	4
Total Year 4	58
Year 5	18
Year 5 MS	0
Total Year 5	18
Year 6	2
Year 6 MS	0
Total Year 6	2
Year 7	1
Year 7 MS	0
Total Year 7	1
Total	325

All Districts in AR are Title I District
Districts 2006-2007

Made AYP=	242
Alert	= 30
SI year 1	= 9
SI M yr 1	= 1
SI year 2	= 1
Total	252

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