

NAEP Achievement Levels Must Be Used and Interpreted with Caution!



NAEP 2011 READING: Demonstration Data "Percent Above Cutscore" (PAC) vs. Average Scale Score				
Achievement Level	State A		State B	
	PAC	Scale Score	PAC	Scale Score
Advanced (323 - 500)	5	333	5	323
Proficient (281 - 322)	30	321	35	281
Basic (243 - 280)	35	279	45	243
Below Basic (0 - 242)	30	241	15	232
At or Above Proficient	35		40	
At or Above Basic	70		85	
Average Scale Score		283		259

#1. Achievement Level Percentages Can Contradict Scale Score Results:

The eighth grade scale scores from the NAEP 2011 grade reading test (see chart) were purposely selected to demonstrate that achievement level percentages can, at times, actually contradict the scale scores from which they were derived. [As used in the three narratives below, *higher* does not suggest that statistical tests were conducted.]

- State B (40%) had a higher percentage of students scoring at or above NAEP *Proficient* than State A (35%).
- State B (85%) had a higher percentage of students scoring at or above NAEP *Basic* than State A (70%).
- State A (283), **however**, had a higher NAEP *average scale score* than State B (259).

#2. The Status of NAEP Achievement Levels - National Center of Education Statistics:

NCLB (the 2001 reauthorization law) requires that achievement levels be used on a trial basis until the Commissioner of Education Statistics determines that the achievement levels are "reasonable, valid, and informative to the public." [. . .] So far, no Commissioner has made such a determination, and the achievement levels remain in a trial status. The NAEP achievement levels should continue to be interpreted and used with caution.

#2 retrieved on June 6, 2013, from <http://nces.ed.gov/nationsreportcard/achlevdev.aspx>



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NAEP Home

NAEP Overview

- NAEP History and Background
- NAEP and No Child Left Behind
- Long-Term Trend and Main NAEP
- Current Activities
- Schedule of Assessments
- Participation is Important
- Questionnaires
- Sample Questions
- How NAEP Is Administered
- How Schools and Students Are Selected
- National NAEP
- State NAEP
- Urban Districts (TUDA)
- NAEP and International Assessments
- Assessment Frameworks
- Inclusion, Exclusion, Accommodation
- Interpreting the Results
 - Setting Achievement Levels
 - Status of Achievement Levels
- Authorization and Oversight

The Status of Achievement Levels

The 2001 reauthorization law requires that the achievement levels be used on a trial basis until the Commissioner of Education Statistics determines that the achievement levels are "reasonable, valid, and informative to the public" (see the No Child Left Behind Act of 2001, P.L. 107-110, 115 Stat. 1425 [2002]). Until that determination is made, the law requires the Commissioner and the National Assessment Governing Board to state clearly the trial status of the achievement levels in all NAEP reports. **So far, no Commissioner has made such a determination**, and the achievement levels remain in a trial status. The achievement levels should continue to be interpreted and used with caution.

A proven alternative to the current process has not yet been identified. NCES and the Board continue to call on the research community to assist in finding ways to improve standard setting for reporting NAEP results. The National Assessment Governing Board urges all who are concerned about student performance levels to recognize that the use of these achievement levels is a developing process using evolving methods and is subject to various interpretations. The Board and NCES believe that the achievement levels are useful for reporting trends in the educational achievement of students in the United States.

Last updated 06 June 2012 (NB)



Idaho and the Northwestern States

NAEP 2009 Mathematics, Grade 4

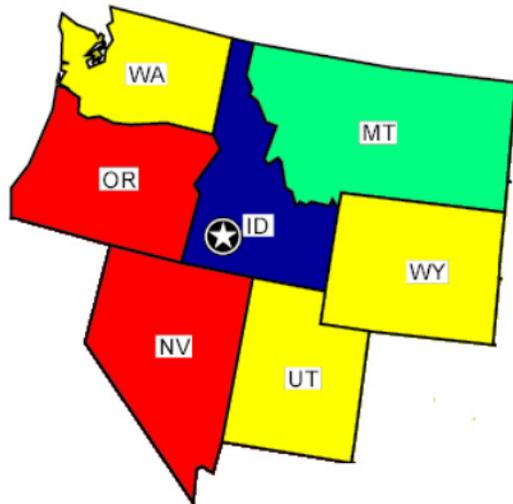
Idaho Snapshot 2009-01



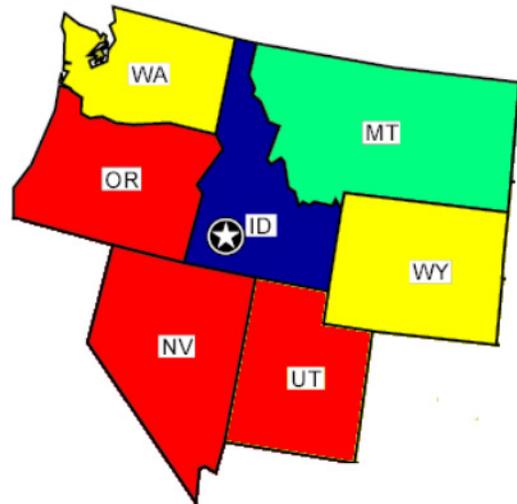
The Mathematics assessment of the National Assessment of Educational Progress (NAEP) used multiple-choice and constructed-response questions to examine student skills in number properties & operations, measurement, geometry, algebra & functions, and data analysis & probability. Mathematics scores range from 0 to 500, where 214 is *Basic* (meets grade 4 expectations), 249 is *Proficient*, and 282 is *Advanced*.

NAEP reports several different scores for each assessment including average scale scores and achievement level scores. While each of these scores report the identical level of student knowledge and skills, it must be recognized that the different scores often portray apparently different levels of student ability. This statistical phenomenon is illustrated here by using two different NAEP scores from the NAEP 2009 assessment to compare the mathematics achievement of Idaho fourth grade students with their peers in the other northwestern states.

NAEP Average Scale Score



NAEP At or Above Basic



Legend: Idaho (blue); Higher than Idaho (green); Lower than Idaho (red); and No statistical difference (yellow).

Idaho fourth graders had an **average scale score** (241) on the NAEP 2009 mathematics assessment that was:

- ▶ Higher than Oregon (238) and Nevada (235);
- ▶ Lower than Montana (244); and
- ▶ Not statistically different from Washington (242), Wyoming (242), and Utah (240).

The percentage of Idaho fourth graders scoring **At or Above NAEP Basic** (85) on the NAEP 2009 mathematics assessment was:

- ▶ Higher than Oregon (80), Nevada (79), and Utah (81);
- ▶ Lower than Montana (88); and
- ▶ Not statistically different from Washington (84) and Wyoming (87).

Note: Comparisons based on statistical tests (.05 level) using unrounded numbers that considered the magnitude of difference and standard errors.
Source: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 Mathematics Assessment.