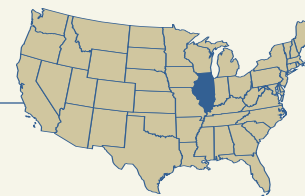


# Illinois



## Introduction

This study linked data from the spring 2003 and spring 2006 administrations of Illinois’s reading and math tests to the Northwest Evaluation Association’s Measures of Academic Progress (MAP) assessment, a computerized adaptive test used in schools nationwide. We found that most of Illinois’s definitions of proficiency in reading and mathematics are lower than those of most of the other 25 states in this study. In other words, Illinois’s tests are below average in terms of difficulty, especially in math.

Moreover, the level of difficulty generally declined from 2003 to 2006—the No Child Left Behind era—dramatically so in reading in grades 3 and 8, and in grade-8 math. There are many possible explanations for these declines (see pp. 34-35 of the main report), which were caused by learning gains on the Illinois test not being matched by learning gains on the Northwest Evaluation Association test. Nonetheless, Illinois’s reading standards are still relatively higher for third grade than for eighth grade (taking into account the obvious differences in subject content and children’s development). Consequently, the reading proficiency rates that the state reported for third grade actually underestimate the proportion of these students on track to meet the eighth-grade reading standards—even as Illinois’s low cut scores in grade 8 might be masking performance problems at that level. Illinois’s policymakers might take this opportunity to smooth and calibrate the state’s reading standards, particularly in grade 8.

### What We Studied: Illinois Standards Achievement Test (ISAT)

Illinois currently uses a spring assessment called the Illinois Standards Achievement Test (ISAT), which tests reading and math in grades 3 through 8, and science in grades 4 and 7. The current study analyzed reading and math results from a group of elementary and middle schools in which almost all students took both the state’s assessment and MAP, using the spring 2003 and spring 2006 administrations of the two tests. (The methodology section of this report explains how performance on these two tests was compared.) These linked results were then used to estimate the scores on NWEA’s scale that would be equivalent to the proficiency cut scores for each grade and subject on the Illinois State Assessment. (A “proficiency cut score” is the score a student must achieve in order to be considered proficient.)

### Part 1: How Difficult are Illinois’s Definitions of Proficiency in Reading and Math?

One way to evaluate the difficulty of a standard is to determine how many people attempting to attain it are likely to succeed. How do we know that a two-foot high jump bar is easy to jump over? We know because if we asked 100 people at random to attempt such a jump, perhaps 80 percent would make it. How do we know that a six-foot high jump bar is challenging? Because only one (or perhaps none) of those same 100 individuals would successfully meet that challenge. The same principle can be applied to academic standards. Common sense tells us that it is more difficult for students to solve algebraic equations with two unknown variables than it is for them to solve an equation with only one unknown variable. But we can figure out exactly how much more difficult by seeing how many eighth graders nationwide answer both types of questions correctly.

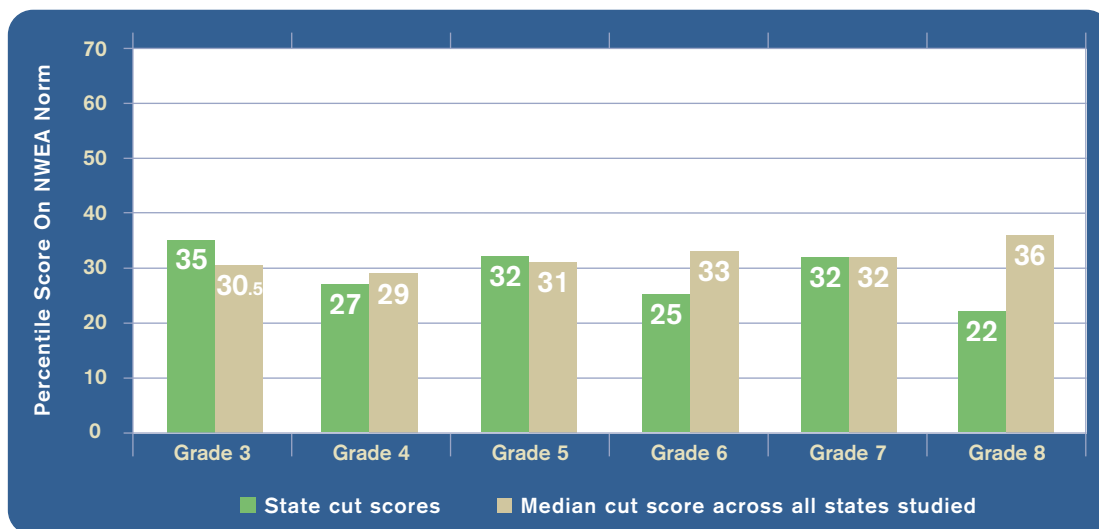
Applying that approach to this assignment, we evaluated the difficulty of Illinois’s proficiency cut scores by estimating the proportion of students in NWEA’s norm group who would perform above the Illinois standard on a test of equivalent difficulty. The two figures that follow show the difficulty of Illinois’s proficiency cut scores for reading (Figure 1) and mathematics (Figure 2) in spring 2006 in relation to the median cut scores for all the states in the study. The proficiency cut scores for **reading** in Illinois ranged between the 22nd and 35th percentiles of the NWEA norm group, with the third grade being most challenging—a rare circumstance among the states studied here. In **mathematics**, the proficiency cut scores fell to the 19th and 20th percentiles for the norm group except for fourth grade, where the cut score was less challenging. Illinois’s reading cut scores vary across grades, ranging from 14 points below the median to 4.5 points above the median, with eighth grade being conspicuously below the 26-state median.

In mathematics, cut scores for all grades are well below the median of the states studied.

Note, too, that Illinois's cut scores for reading are generally higher than for math. Thus, reported differences in achievement on the ISAT between reading and mathematics might be more a product of differences in cut scores than in actual student achievement. In other words, Illinois students might be performing better in reading and worse in mathematics than is apparent by just looking at the percentage of students passing state tests in those subjects.

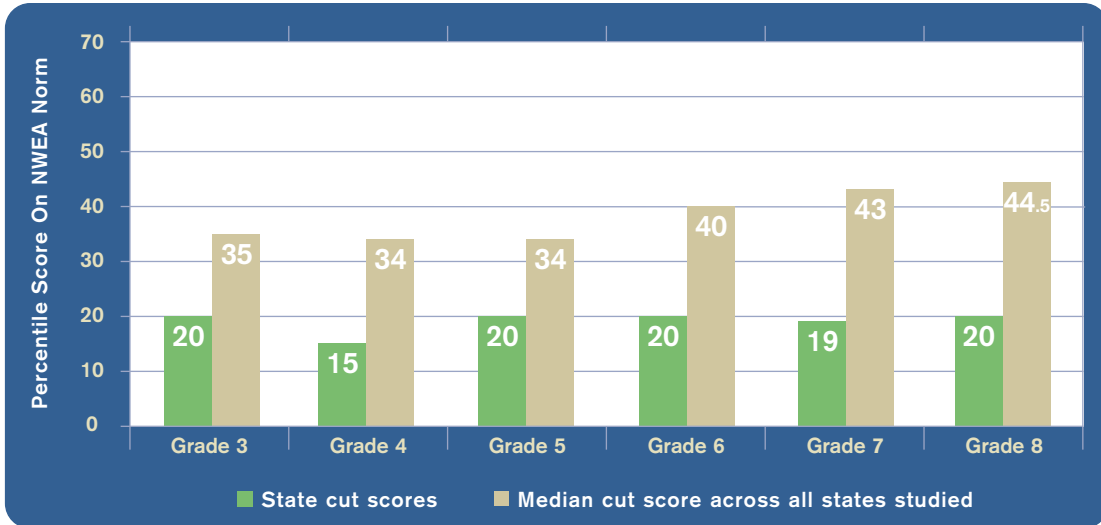
Another way of assessing difficulty is to ask how Illinois's proficiency cut scores rank relative to other states. Table 1 shows that Illinois's proficiency cut scores for reading rank in the mid- to upper third in difficulty (except in grades 6 and 8) among the 26 states studied for this report, while the cut scores for math rank in or near the lowest third in difficulty among the 26 states studied for this report.

Figure 1 – Illinois Reading Cut Scores in Relation to All 26 States Studied, 2006 (Expressed in MAP Percentiles)



**Note:** This figure compares reading test cut scores (“proficiency passing scores”) as percentiles of the NWEA norm. These percentiles are compared with the median cut scores of other states reviewed in this study. Illinois ranks slightly above the median in both third and fifth grade, and its cut scores are at the median in seventh grade. Its eighth-grade cut score, however, is 14 percentile points below the median.

Figure 2 – Illinois Mathematics Cut Scores in Relation to All 26 States Studied, 2006  
(Expressed in MAP Percentiles).



**Note:** Illinois’s math test cut scores are shown as percentiles of the NWEA norm and compared with the median cut scores of other states reviewed in this study. Illinois’s cut scores in math are consistently 14 to 24.5 percentile points below the median.

Table 1 – Illinois Rank for Proficiency Cut Scores Among 26 States in Reading and Mathematics, 2006

Ranking (Out of 26 States)						
	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
Reading	7	15	11	20	13	21
Mathematics	21	23	24	24	24	22

**Note:** This table ranks Illinois’s cut scores relative to the cut scores of the other 25 states in the study, where 1 is highest and 26 is lowest.

## Part 2: Changes in Cut Scores over Time

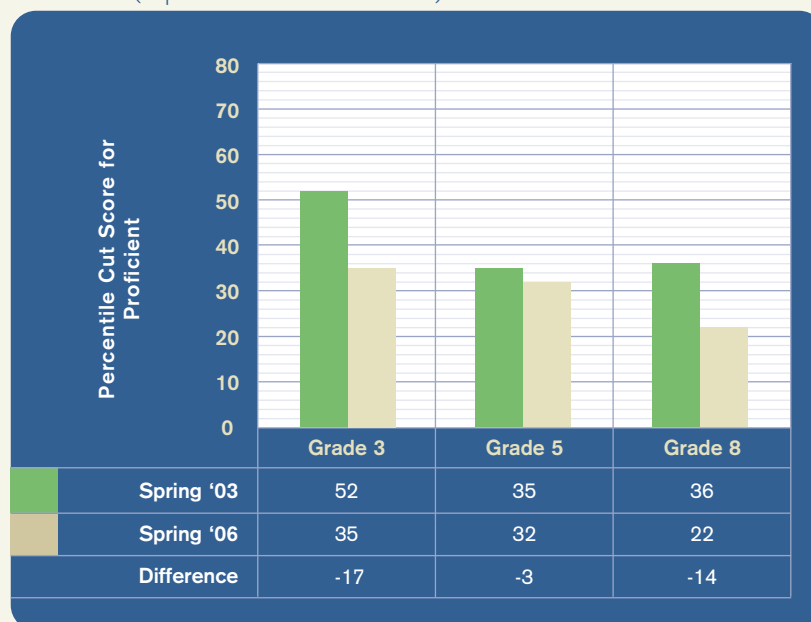
In order to measure their consistency, Illinois's proficiency cut scores were mapped to their equivalent scores on NWEA's MAP assessment for the 2002-03 and 2005-06 school years. Cut score estimates for both years were available for grades 3, 5, and 8.

States may periodically re-adjust the cut scores they use to define proficiency in reading and math, or may update the tests used to test student proficiency. Such changes can impact proficiency ratings, not necessarily because student performance has changed, but because the measurements and criteria for success have changed. This was the case for Illinois, which publicly changed its cut scores during the period studied.

Is it possible, then, to compare the proficiency scores between earlier administrations of Illinois's tests and today's? Yes.

Assume that we're judging a group of fourth graders on their high-jump prowess and that we measure this by finding how many in that group can successfully clear a three-foot bar. Now assume that we change the measure and set a new height to judge proficiency. Perhaps students must now clear a bar set at one meter. This is somewhat akin to adjusting or changing a state test and its proficiency requirements. Despite this, it is still possible to determine whether it is slightly more difficult to clear one meter than three feet, because we know the relationship between the measures. The same principle applies here. The measure or scale used by the ISAT in 2003 and in 2006 can both be linked to the MAP test, which has remained consistent over time. Just as one can compare three feet with one meter and know that a one-meter jump is slightly more difficult than a three-foot jump, one can estimate the cut score needed to pass the ISAT in 2003 and 2006 on the MAP scale and ascertain whether the test may have changed in difficulty.

Figure 3 – Estimated Change in Illinois's Proficiency Cut Scores in Reading, 2003-2006 (Expressed in MAP Percentiles)



**Note:** This graphic shows how the difficulty of achieving proficiency in reading has changed. For example, third-grade students in 2003 had to score at the 52nd percentile of the NWEA norm group in order to be considered proficient, while in 2006 third graders had only to score at the 35th percentile to achieve proficiency. The change in grade 5 is within the margin of error (in other words, too small to be considered substantive).

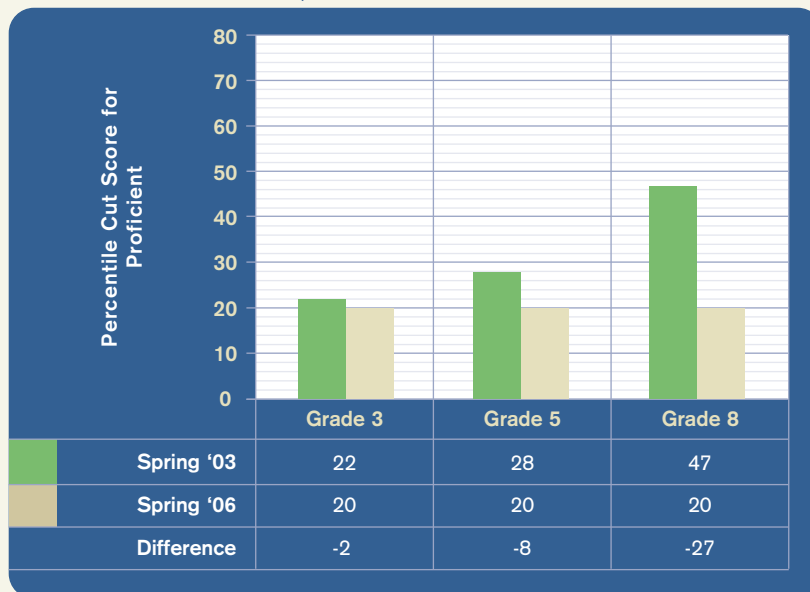
For **reading**, we found a decrease in Illinois’s estimated proficiency cut scores in grades three and eight over this three-year period (Figure 4). Consequently, even if student performance stayed the same on an equivalent test like NWEA’s MAP assessment, these changes would likely yield increases in the third-grade reading proficiency rate by 17 percent and in the eighth-grade reading proficiency rate by 14 percent. (Illinois reported a 9 point gain for third graders and a 16 point gain for eighth graders over this period.)

Analyses of Illinois’s estimated **mathematics** proficiency cut scores indicate a decrease in grades 5 and 8 over this three-year period (Figure 4). Consequently, even if student performance stayed the same on an equivalent test like NWEA’s MAP assessment, this would likely yield increased proficiency rates of 8 percent and 27 percent, respectively. (Illinois reported a 10-point gain for fifth graders and a 25-point gain for eighth graders over this period.)

### Part 3: Calibration across Grades

Calibrated proficiency cut scores are those that are relatively equal in difficulty across all grades. Thus, an eighth-grade cut score would be no more or less difficult for eighth graders to achieve than a third-grade cut score is for third graders. When cut scores are so calibrated, parents and educators have some assurance that achieving the third-grade proficiency cut score puts a student on track to achieve the standards at eighth grade. It also provides assurance to the public that reported differences in performance across grades are a product of differences in actual educational attainment and not simply differences in the difficulty of the test.

Figure 4 – Estimated Differences in Illinois’s Proficiency Cut Scores in Mathematics, 2003-2006 (Expressed in MAP Percentiles ).

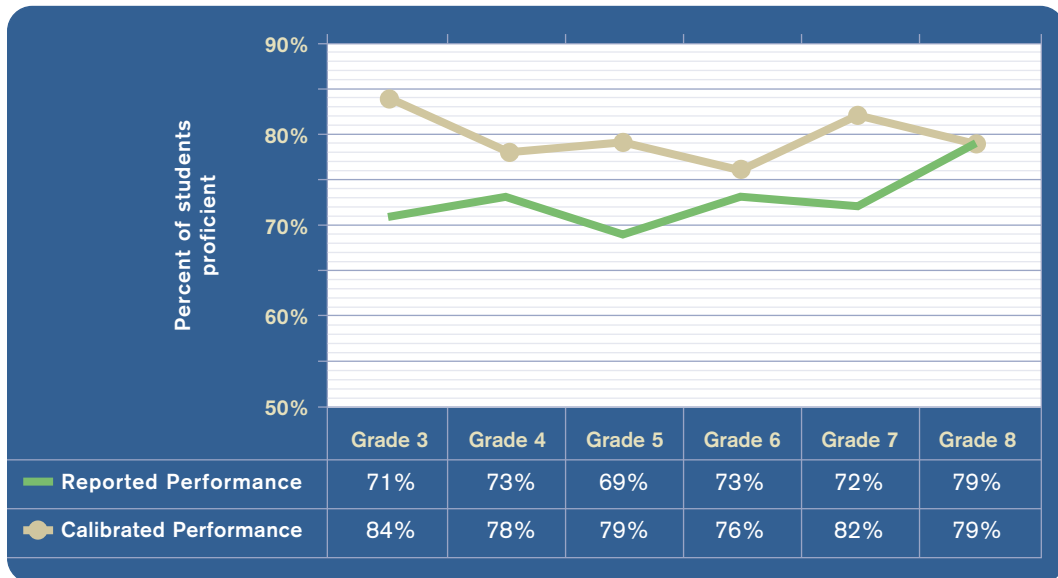


**Note:** This graphic shows how the difficulty of achieving proficiency in math has changed. For example, eighth-grade students in 2003 had to score at the 47th percentile of the NWEA norm group in order to be considered proficient, while in 2006 eighth graders only had to score at the 20th percentile of the NWEA norm group to achieve proficiency. The change in grades 3 was within the margin of error (in other words, too small to be considered substantive).

Examining Illinois's cut scores, we find that they are not well calibrated across grades. Figure 1 showed that Illinois's reading proficiency cut scores in third grade are relatively more challenging than in eighth grade. Figure 2 showed that the math proficiency cut score is fairly consistent across the grades. The two figures that follow show Illinois's reported performance on its state test in reading (Figure 5) and mathematics (Figure 6) compared with the rates of proficiency that

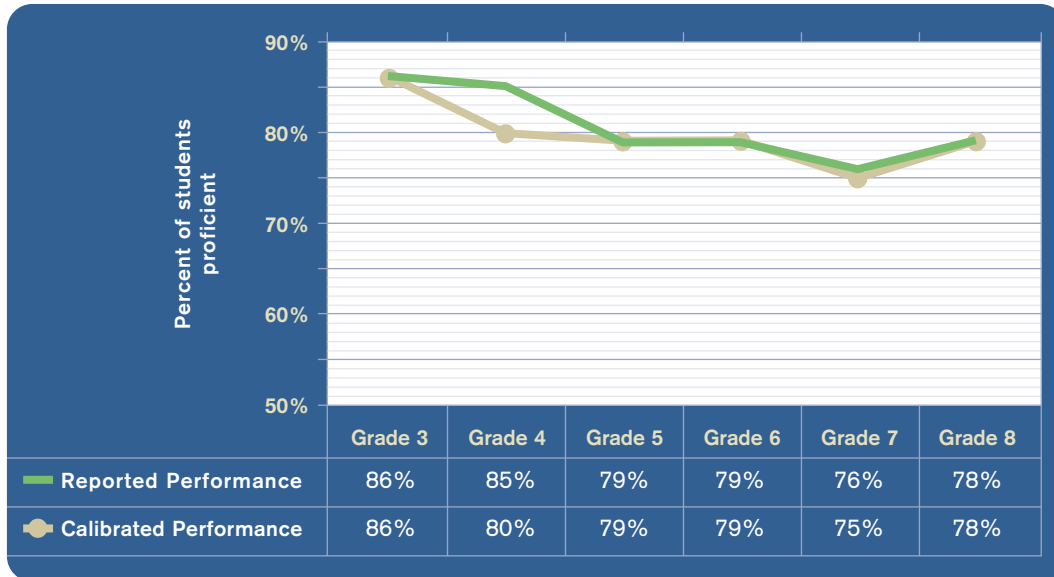
would be achieved if the cut scores were all calibrated to the grade-8 standard. When differences in grade-to-grade difficulty of the cut scores are removed, it becomes clear that the percentage of elementary and middle school students who are on track to meet the eighth-grade reading proficiency cut scores is actually higher than what was reported by the state.

Figure 5 – Illinois Reading Performance as Reported and as Calibrated to the Grade-8 Standard, 2006



**Note:** This graphic shows, for example, that if Illinois's grade-3 reading standard were set at the same level of difficulty as its grade-8 standard, 84 percent of third graders would achieve the proficient level, rather than 71 percent, as reported by the state.

Figure 6 – Illinois Mathematics Performance as Reported and as Calibrated to the Grade-8 Standard, 2006



**Note:** This graphic shows, for example, that if Illinois's grade-4 mathematics standard were set at the same level of difficulty as its grade-8 standard, 80 percent of fourth graders would achieve the proficient level, rather than 85 percent, as was reported by the state. Fourth grade aside, it appears that Illinois math standards are fairly well calibrated from grade to grade.

### Policy Implications

Illinois's proficiency cut scores are relatively low for math and about average for reading, compared with the other 25 states in the study. This finding is fairly consistent with the recent National Center for Education Statistics report, *Mapping 2005 State Proficiency Standards Onto the NAEP Scales*, particularly for reading in the higher grades (although not as much for math). Reading and math standards have generally decreased between 2003 and 2006, dramatically in some

grades. Moreover, Illinois's expectations for reading proficiency are not smoothly calibrated across grades; Illinois's third-grade proficiency rates actually underestimate the proportion of students who are on track to meet the eighth-grade requirements. Illinois policymakers might consider raising all of their cut scores, but especially those at the eighth-grade level.