

ISAT English Language Arts and Math Percentiles (2019-2026) for Idaho Students in Grades 3-8

Bert Stoneberg, Ph.D.
K-12 Research Idaho

This paper is not a research study. There is neither null hypothesis nor alternative hypothesis to reject or accept. It just uses simple line and bar graphs to provide educators, parents, and community a quick look at how our students did on ISAT reading and mathematics tests from 2019 (the last testing before the state closed the public schools in reaction to the COVID pandemic) to 2026.

Three measures of school performance, once in widespread use, provide program evaluation and accountability data more useful than the percentage of students rated as proficient or above (i.e., by cut score). These measures are averages (means), effect sizes, and percentiles. This paper focused on the statewide performance of Idaho revealed by percentile scores from 2019 to 2026.

Average scores and effect sizes of average scale scores provide much information, but they hide a lot of performance evidence in a single measure of central tendency. Percentiles, on the other hand, provide additional evidence of performance across the distribution of student scale scores. They enable us to follow the progress of five student “ability levels” from year to year, or from 2019 to 2026.

A percentile is the value of a score in a dataset that indicates the percentage of scores that fall below it. For example, if a score is the 90th percentile, it means the score was higher than 90% of the scores in that dataset. The five percentiles (i.e., student ability levels) used for this performance review were:

90th Percentile = Idaho’s High Performing Student
75th Percentile = Idaho’s High Average Student
50th Percentile = Idaho’s Average Student for Grade Level
25th Percentile = Idaho’s Low Average Student
10th Percentile = Idaho’s Low Performing Student

ISAT Reading and Math, 2019-2026, Grades 3-8

The Idaho State Department of Education (SDE) provided statewide aggregate data for ISAT from 2019 to 2026 for each grade 3-8. This included the number of students with valid ISAT scores in each grade, their average or mean scale score, and the standard deviation. [Note: For ISAT 2025, the SDE unnecessarily redacted students attending small Idaho schools from the statewide aggregate data to “protect their identity”.]

Calculation of Percentiles

The five percentiles (or five student ability levels) were calculated for both reading language arts and for mathematics at each grade 3 through 8 using the SDE provided ISAT means and standard deviations associated with each of the target percentiles:

$$\text{percentile} = (z \text{ score} \times \text{standard deviation}) + \text{mean}$$

where the relevant z-scores were retrieved from a *Proportions of Area under the Normal Curve* table of a beginning statistics textbook.

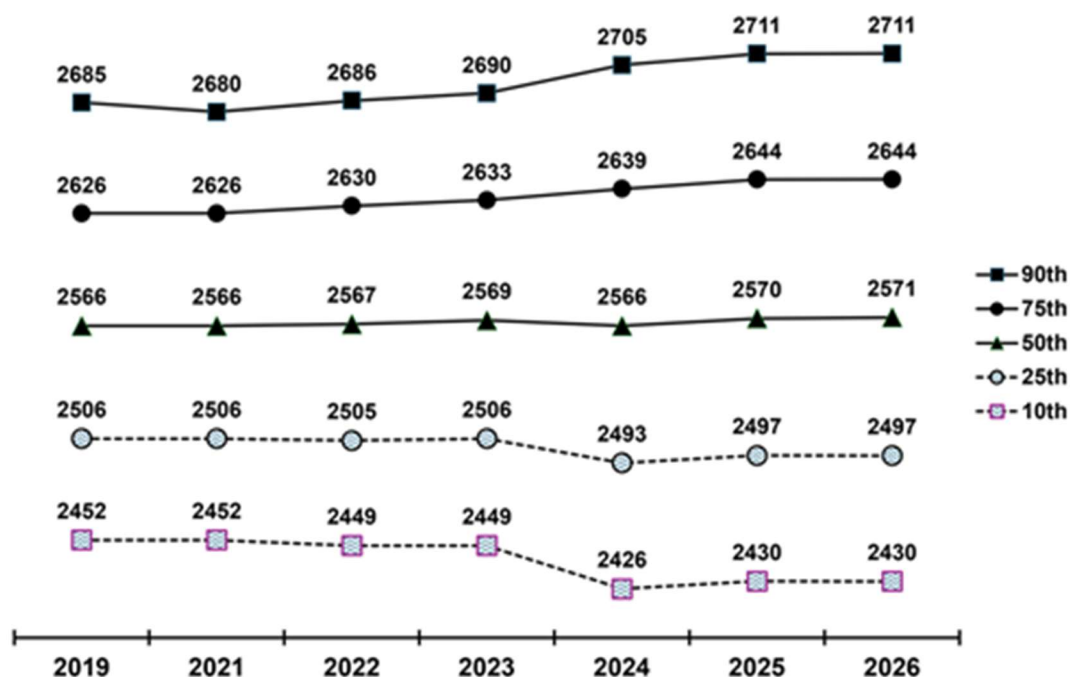
Not All Students take the ISAT

This review of the Idaho Standards Achievement Test results focused only on students who participated in the ISAT. Not all Idaho students take the ISAT; it would be inappropriate to test all students. There are, for example, separate statewide assessments available for special education students with IEPs and for students with limited English language skills.

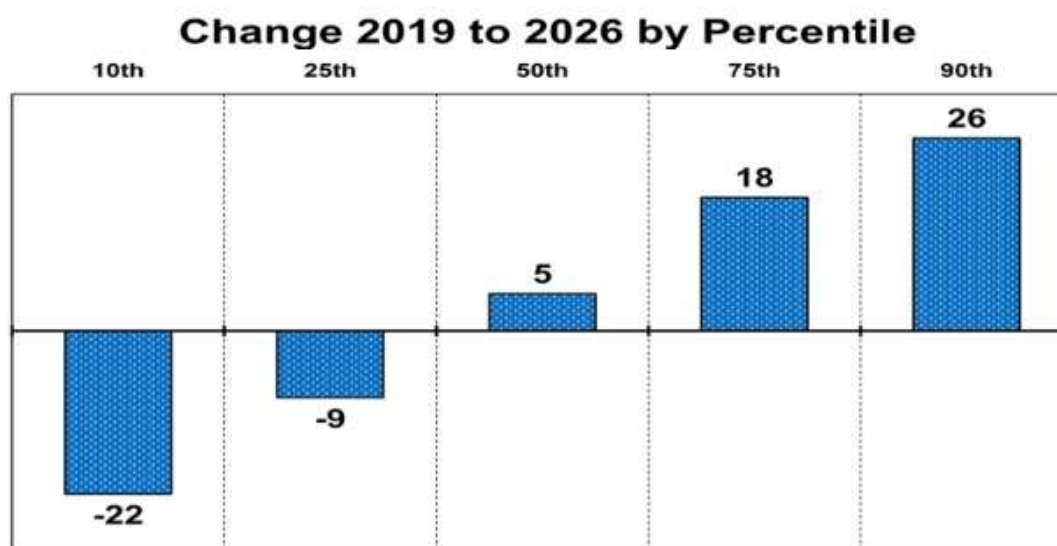
Data Displays

There are six data display pages each for English Language Arts and Mathematics. Each page has two graphs: a line graph that follows each of the five percentiles from year to year and a bar graph shows the change (i.e., “growth”) at each percentile from 2019 and 2026.

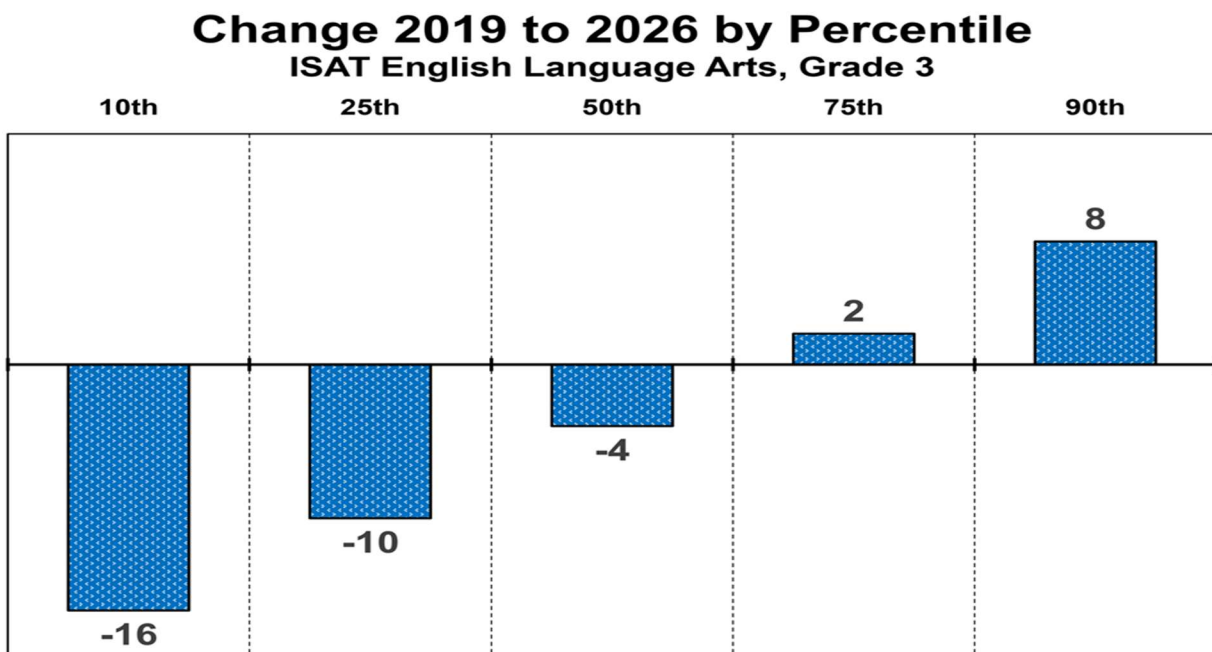
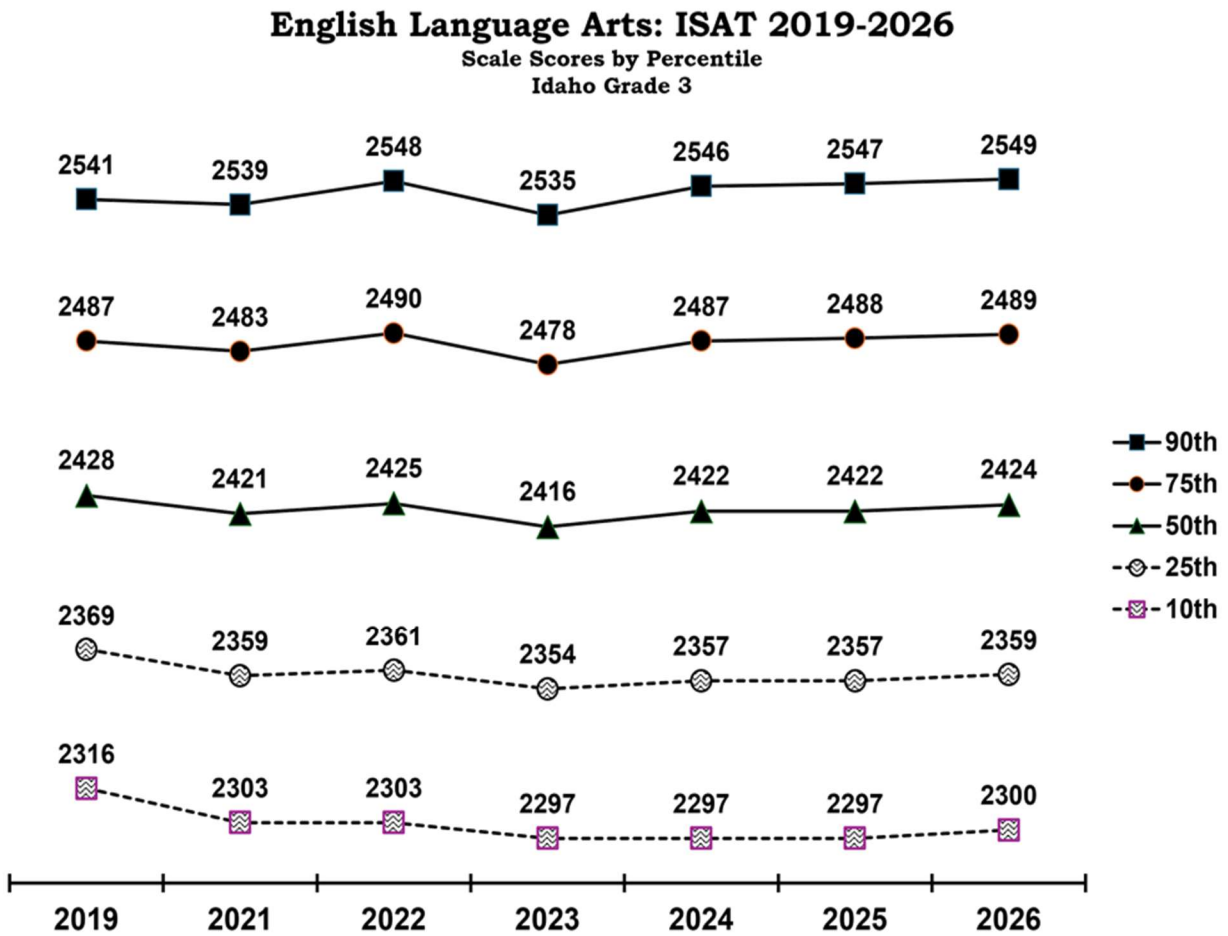
Graph Type 1: Line Graph (Follow across years)

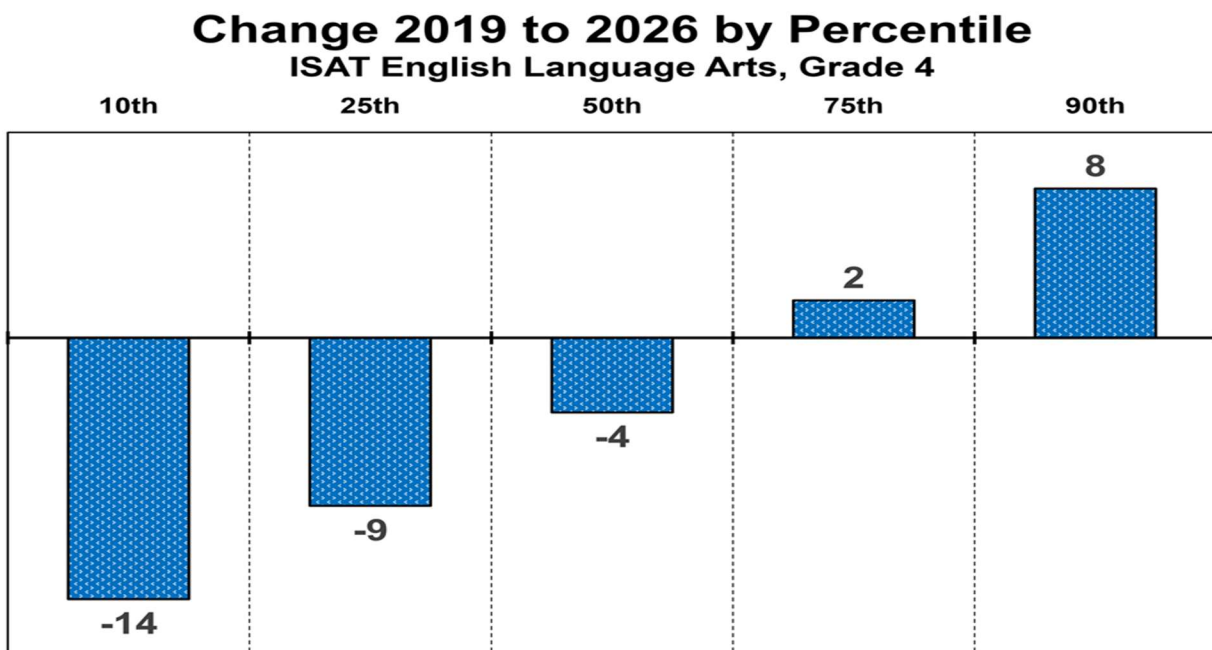
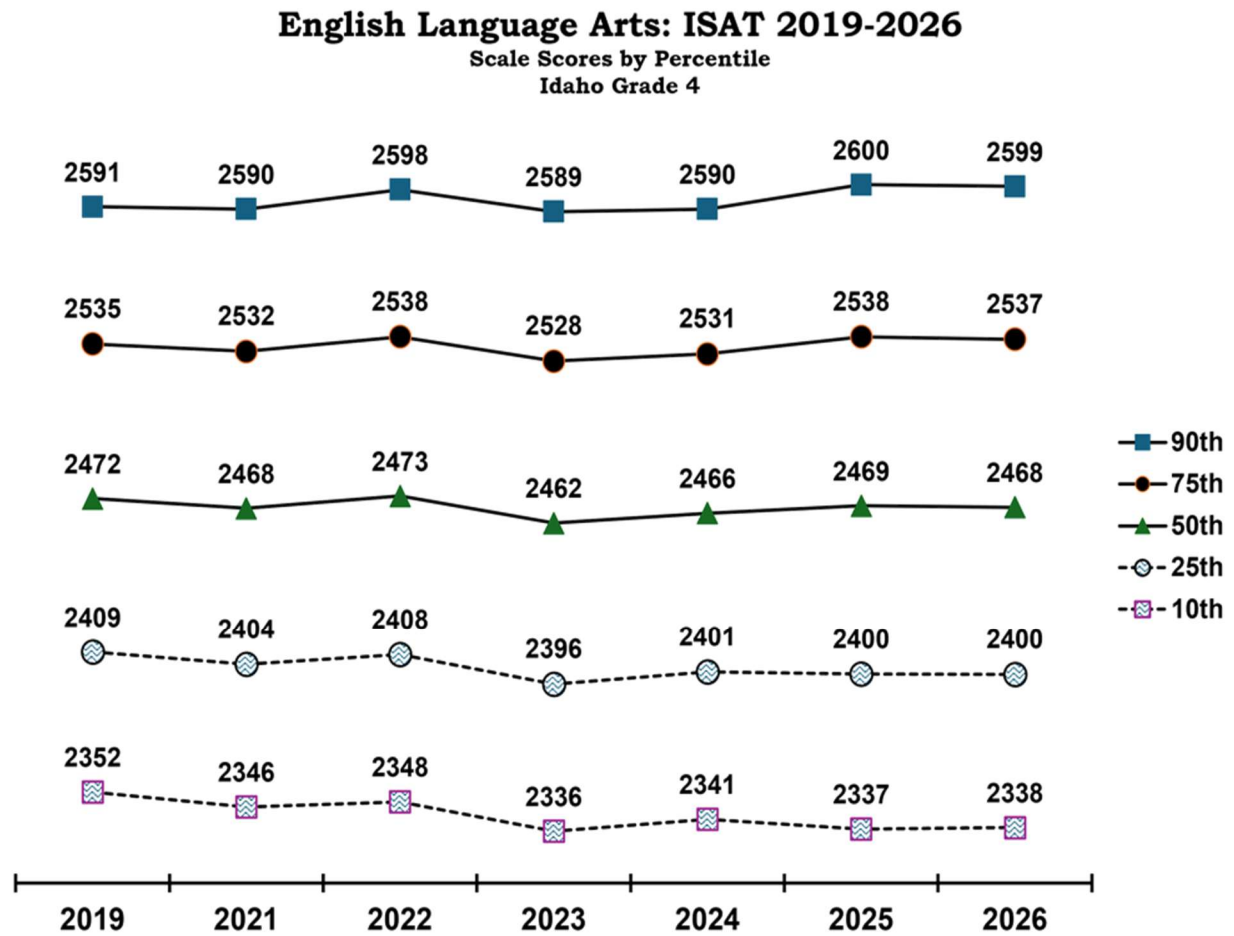


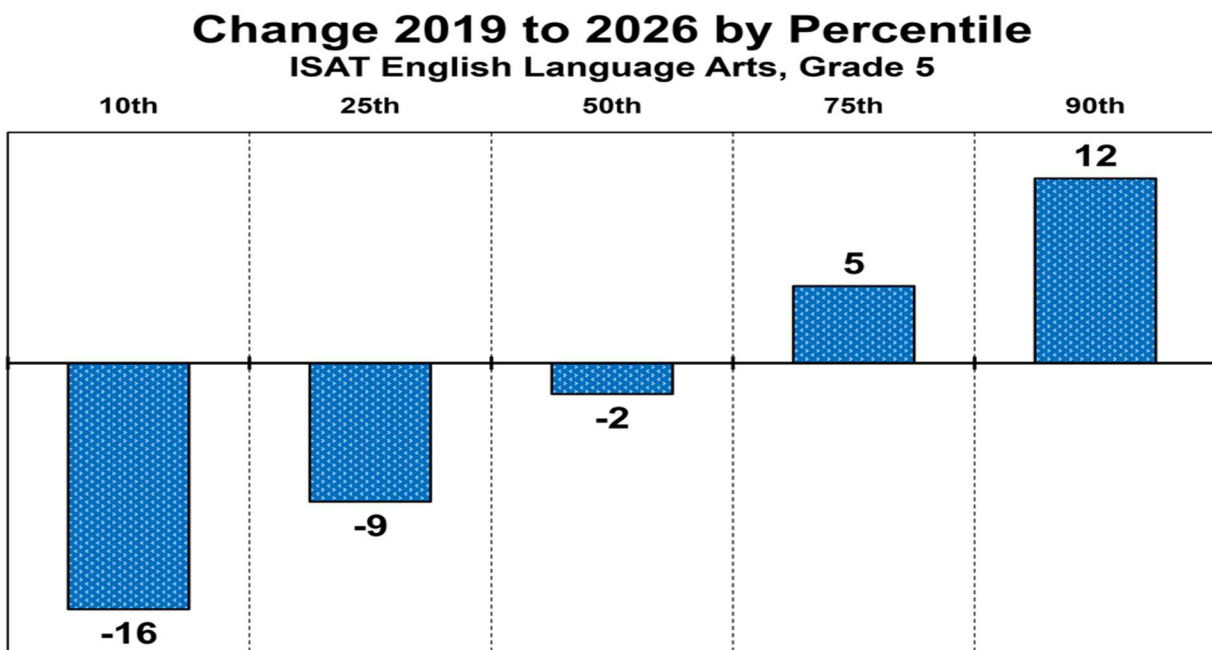
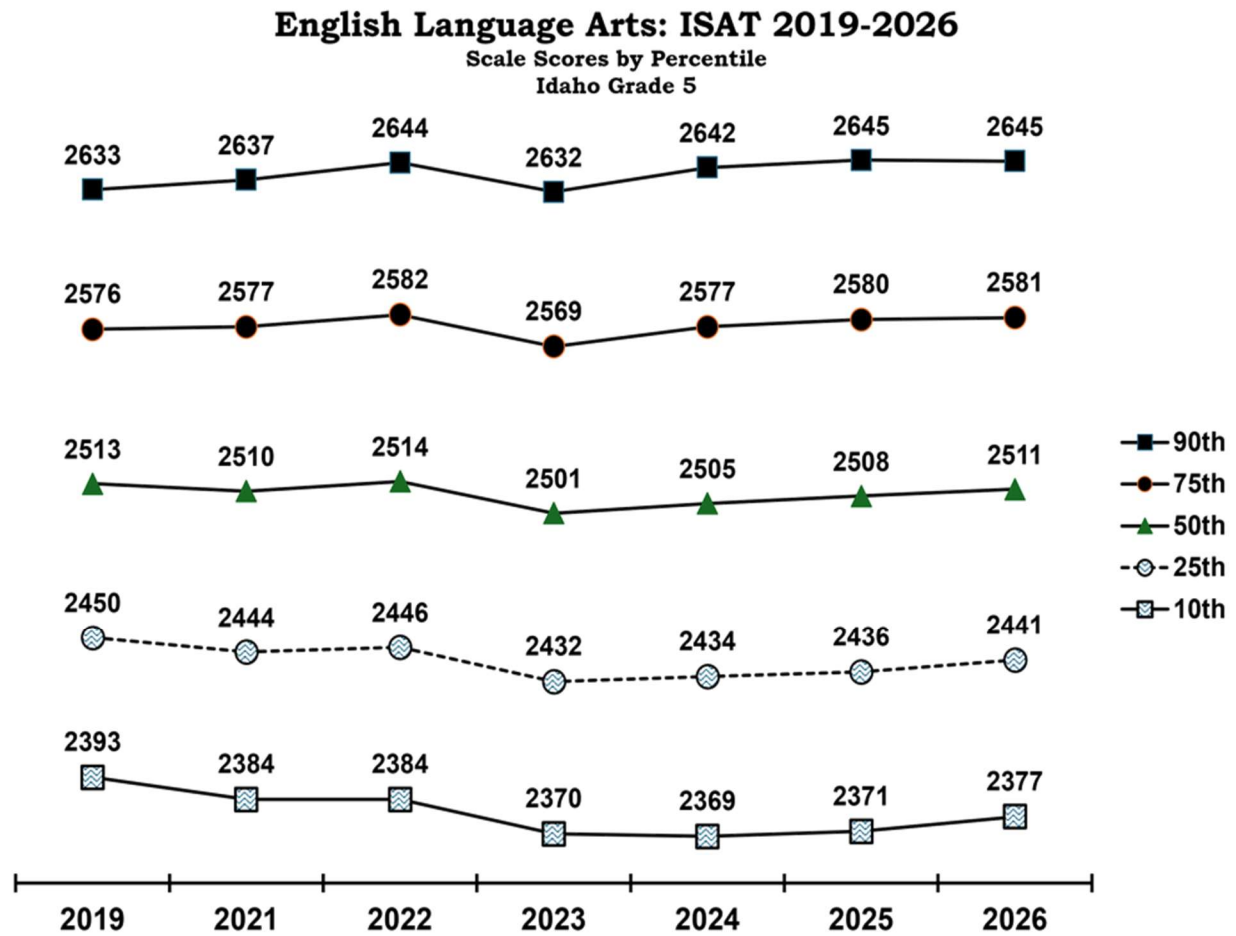
Graph Type 2: Bar Graph (“Growth” from Beginning and End)

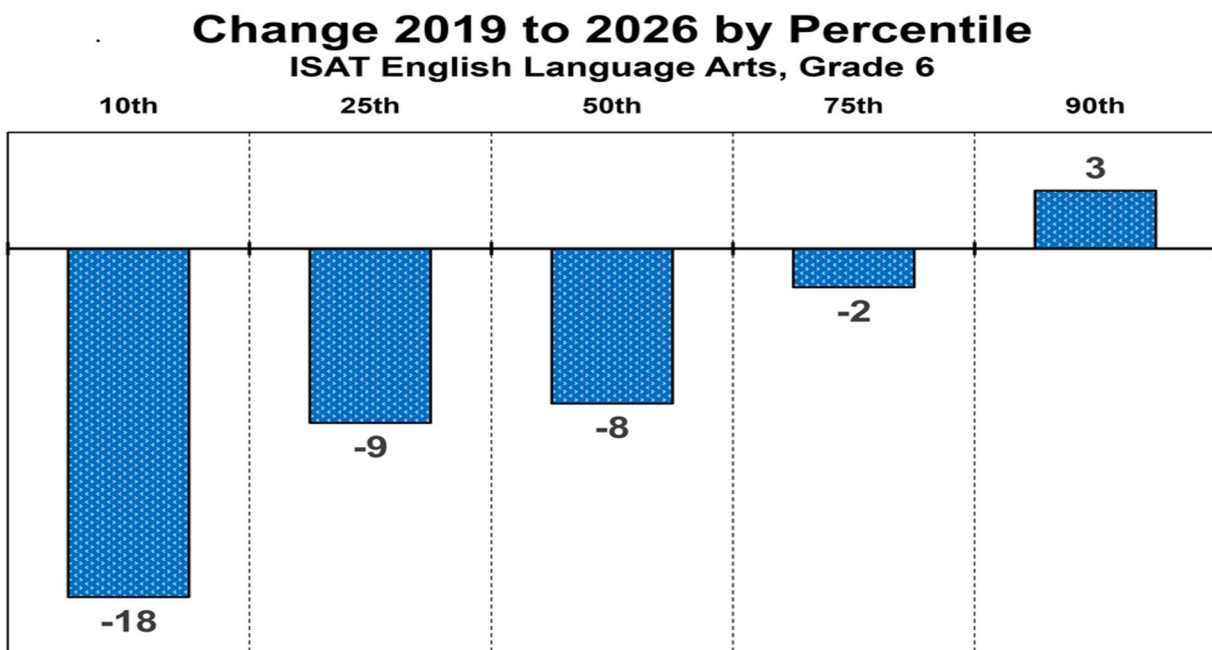
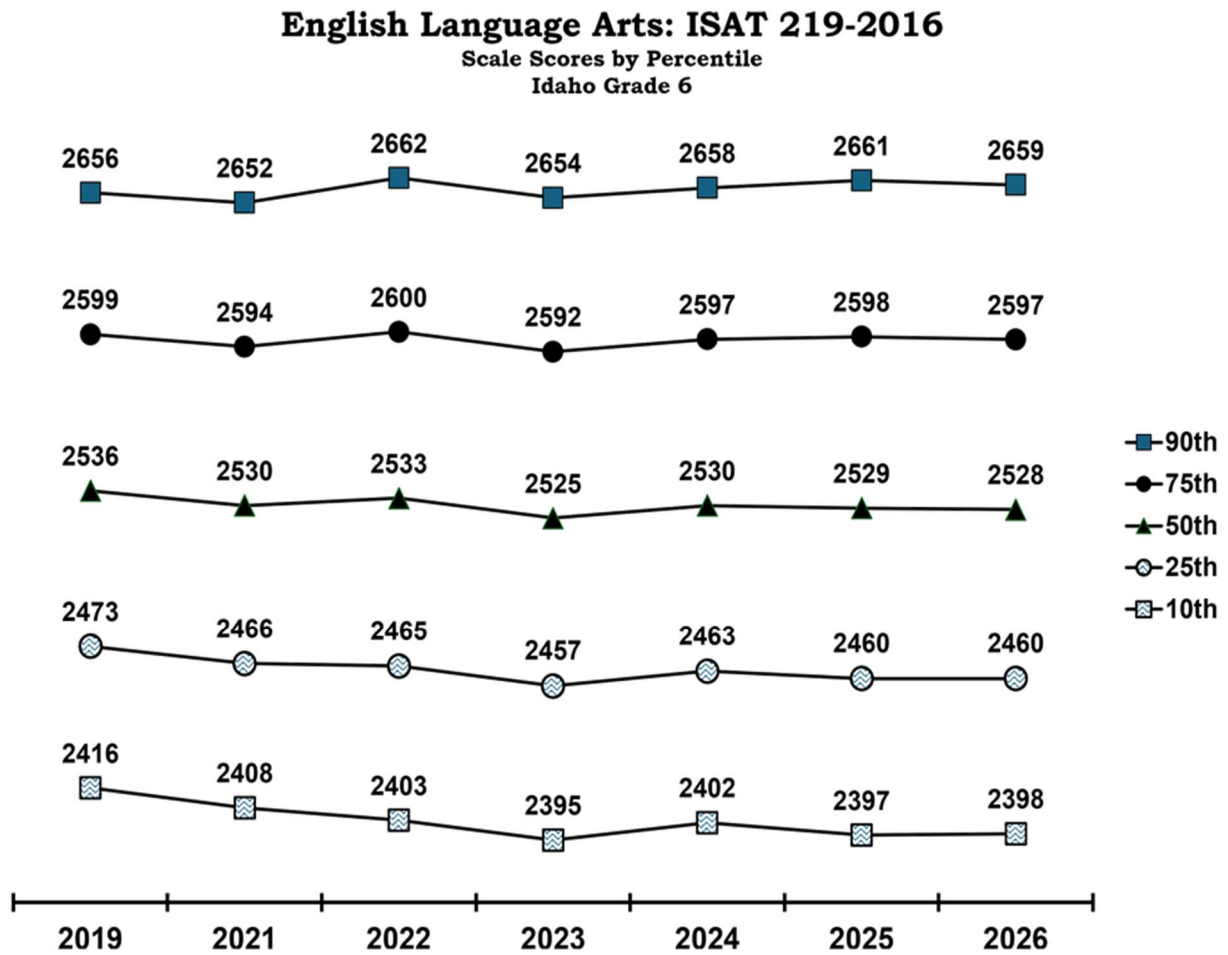


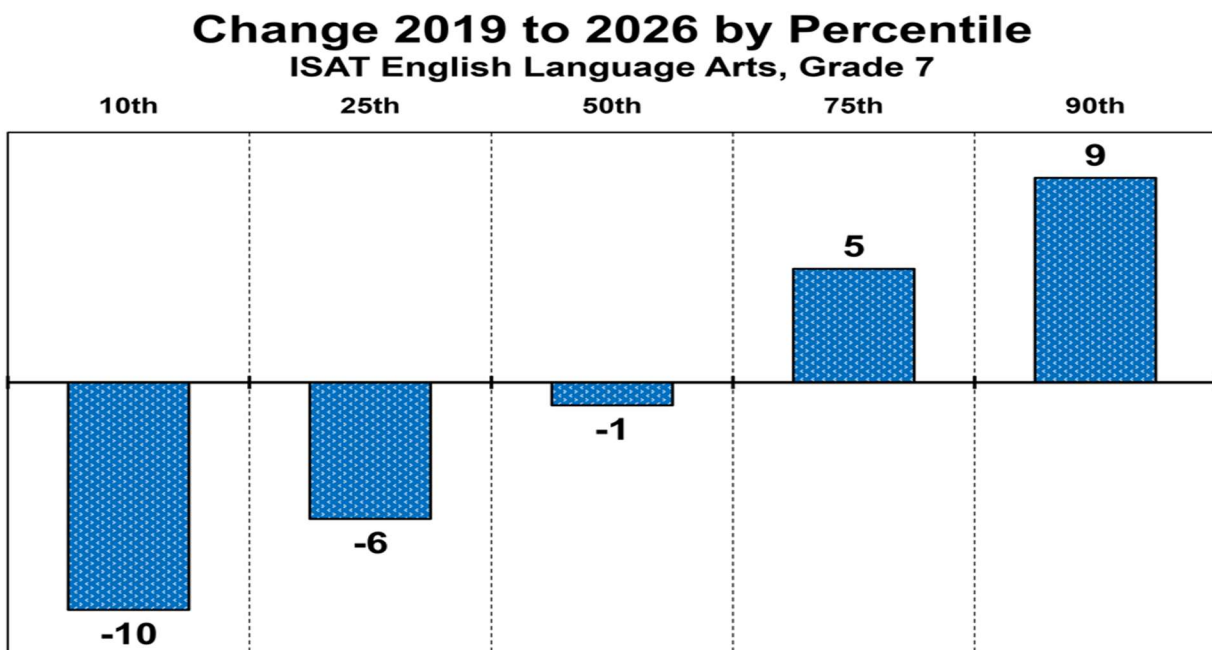
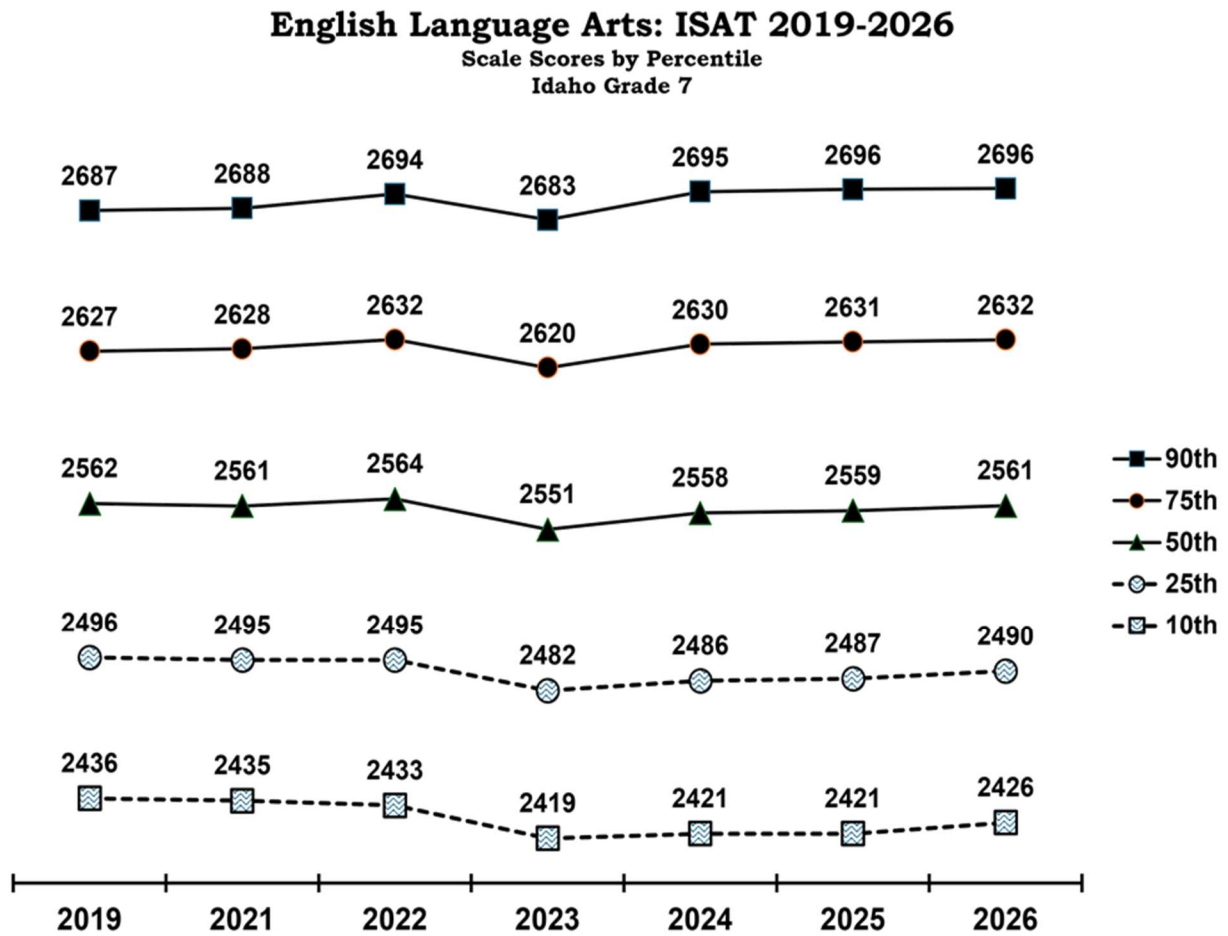
Data displays begin on the next page. The first set of display pages is for English Language Arts, one page for each for grade 3 through grade 8. The second set of display pages is for Mathematics, one page each for grade 3 through 8.

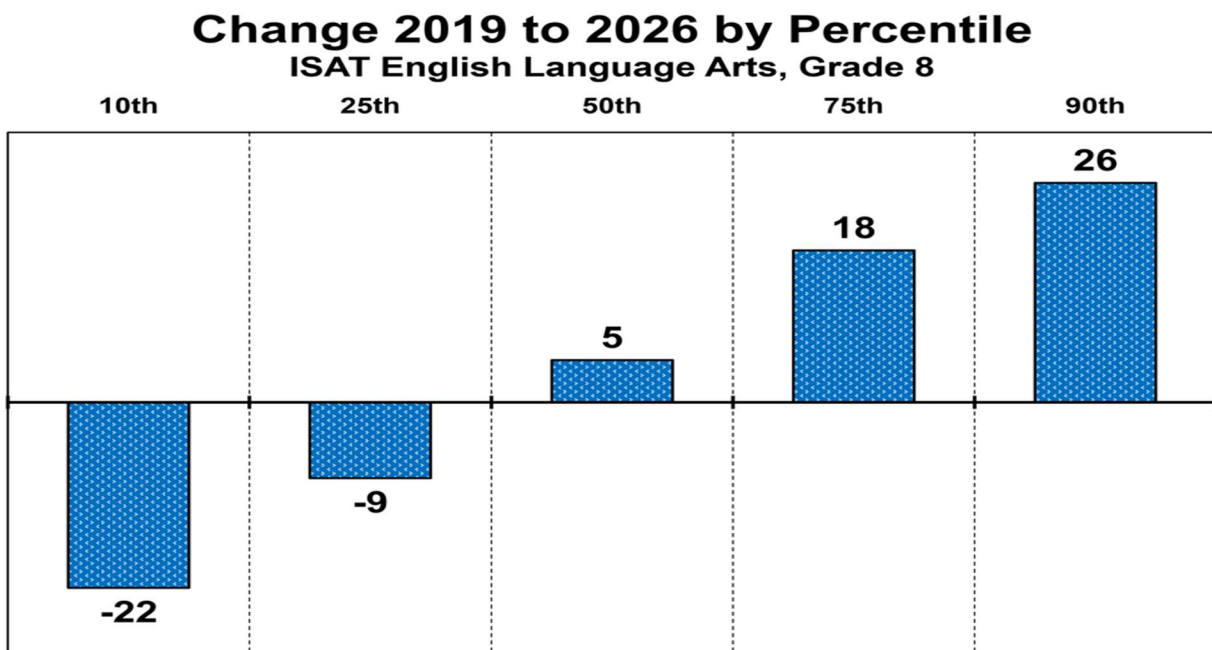
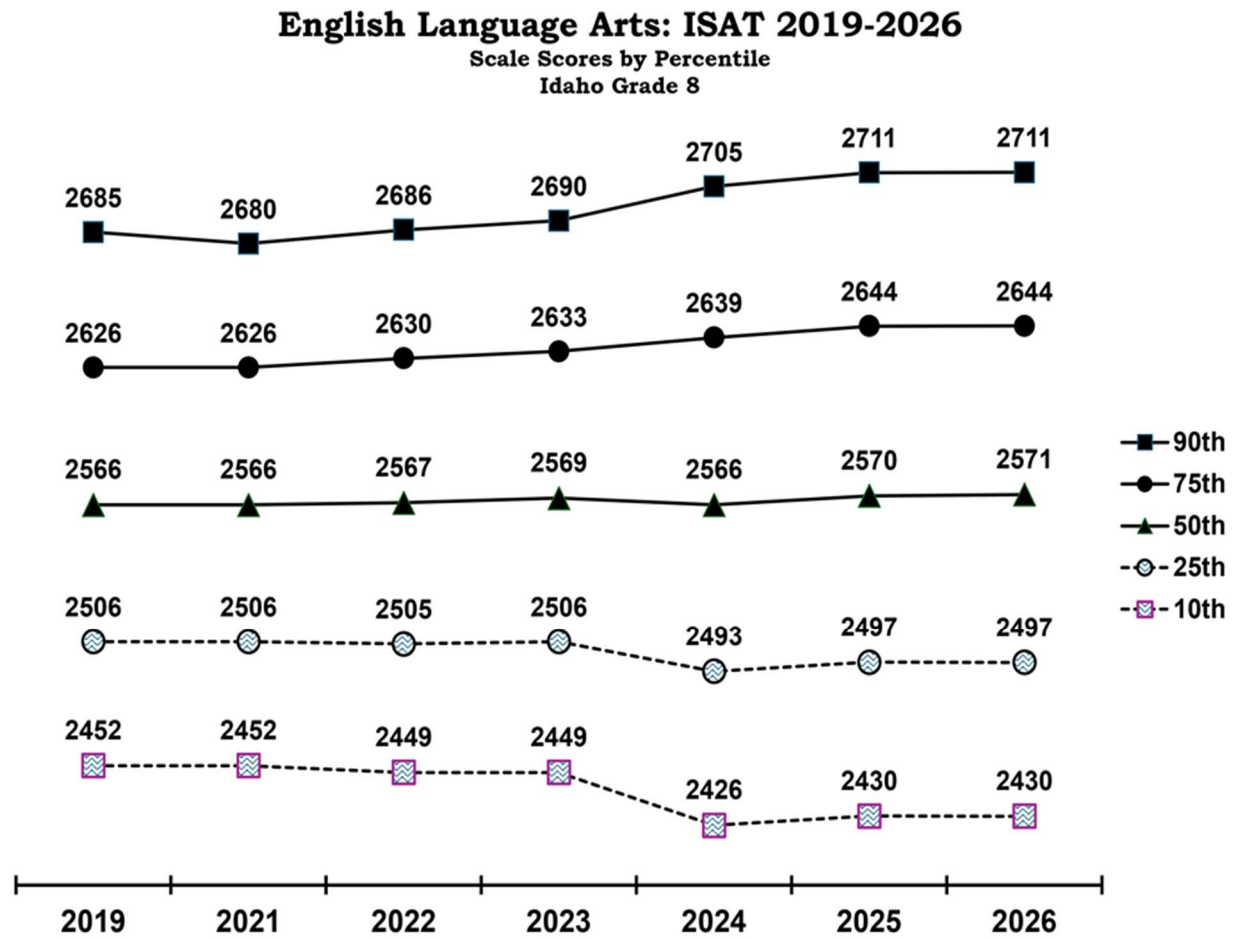


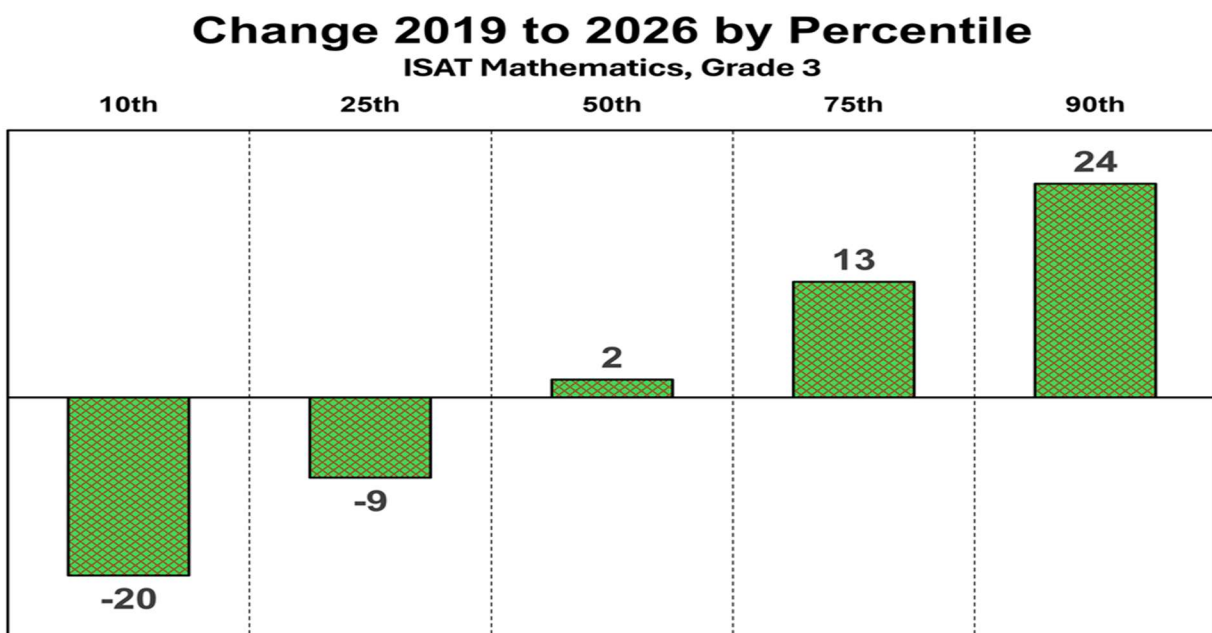
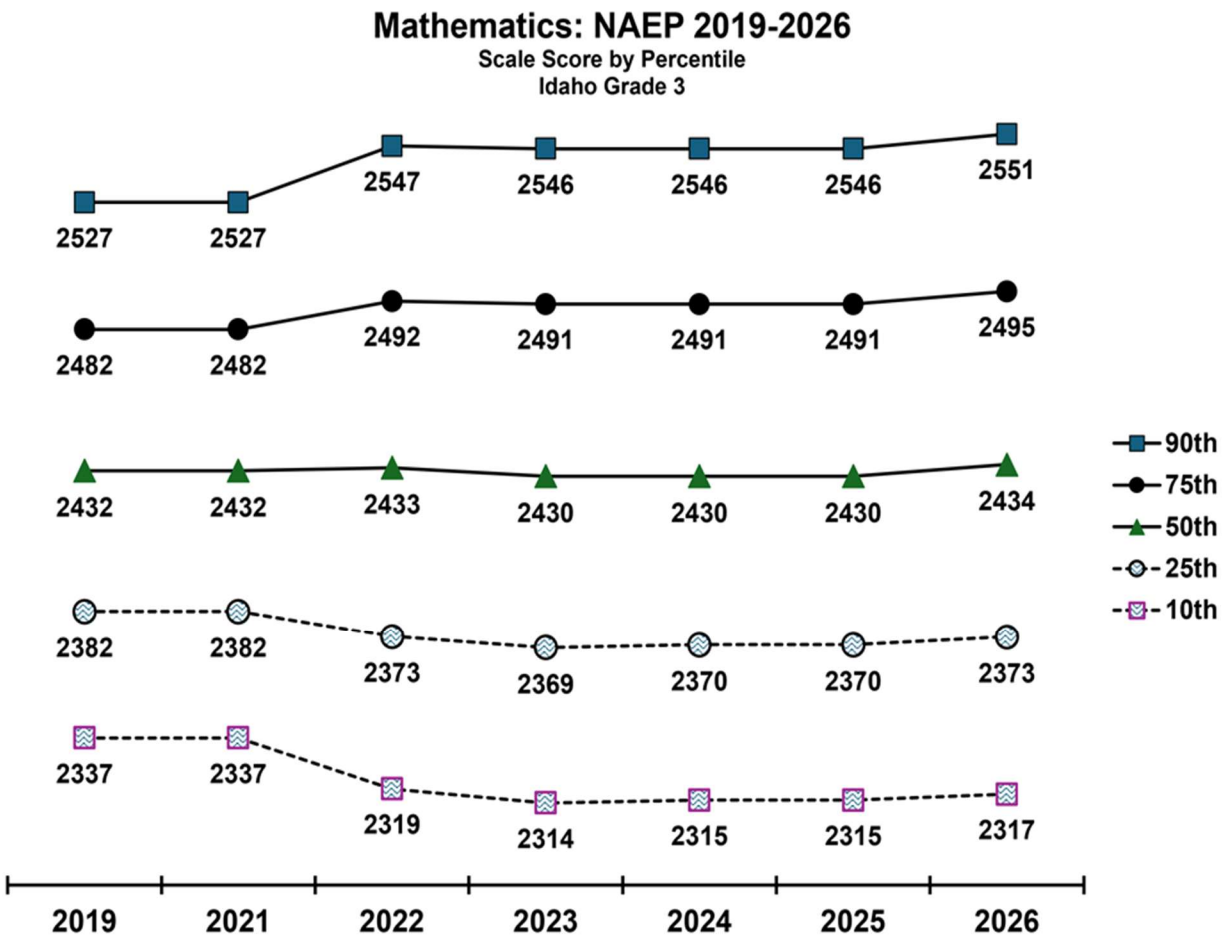


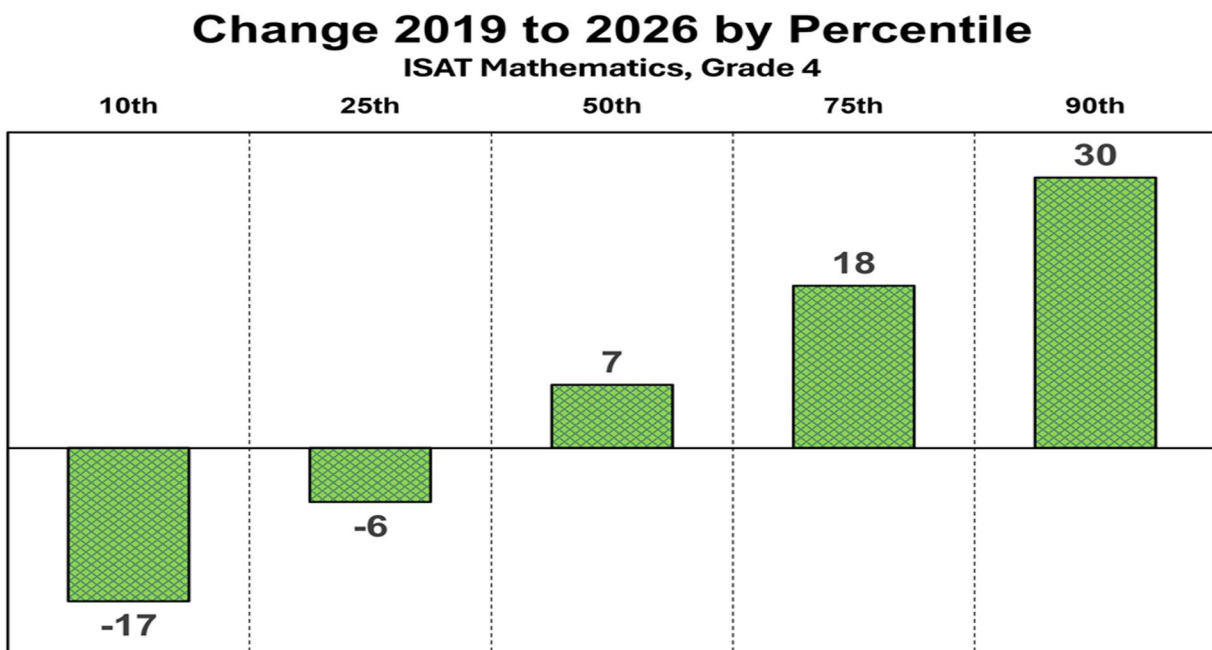
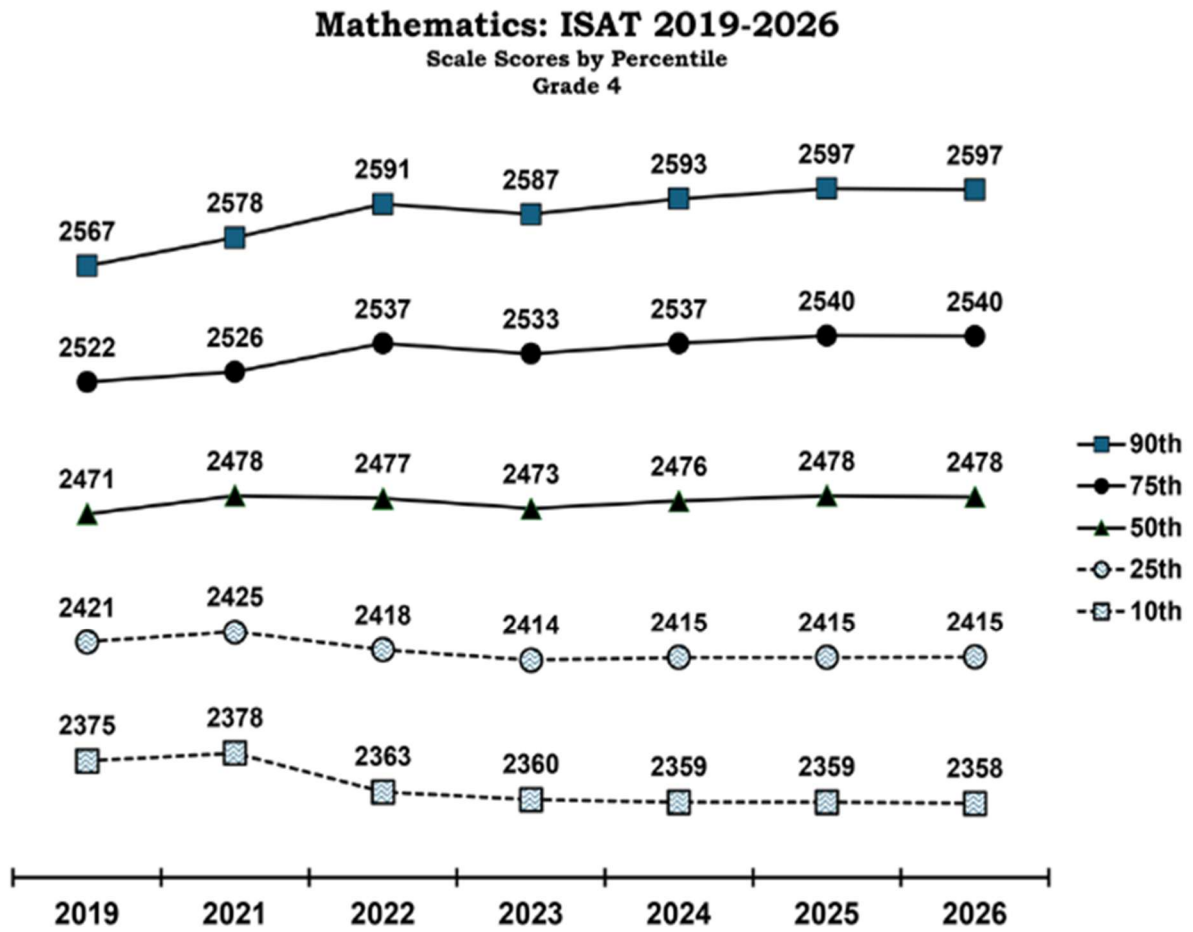


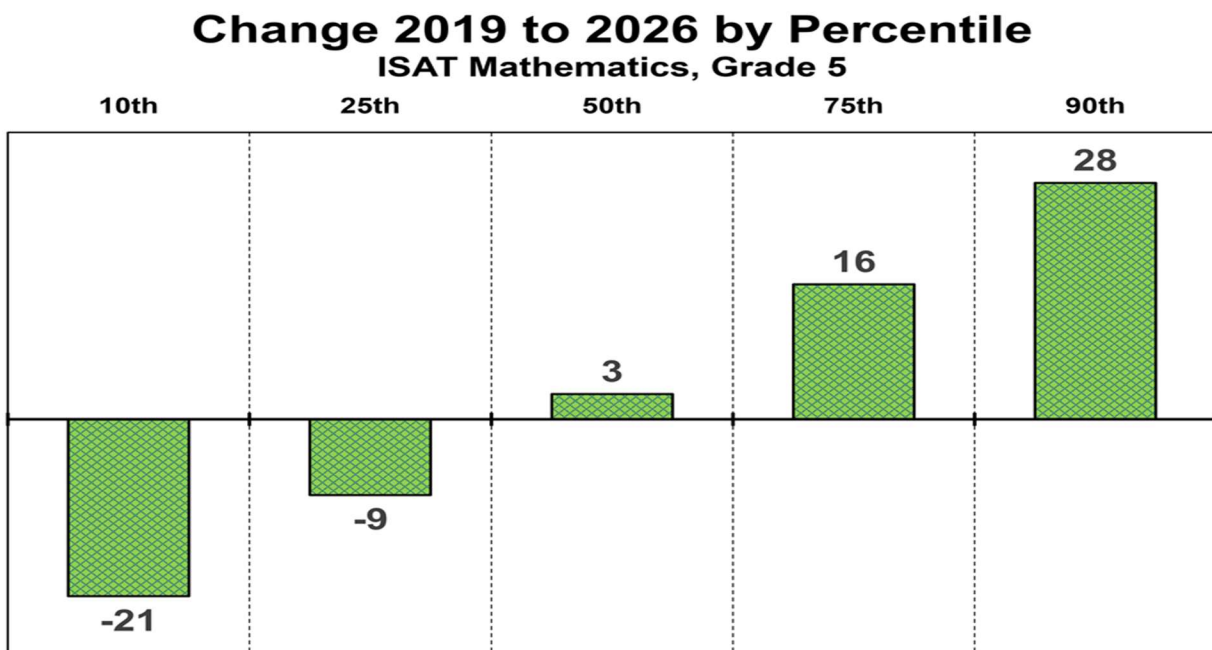
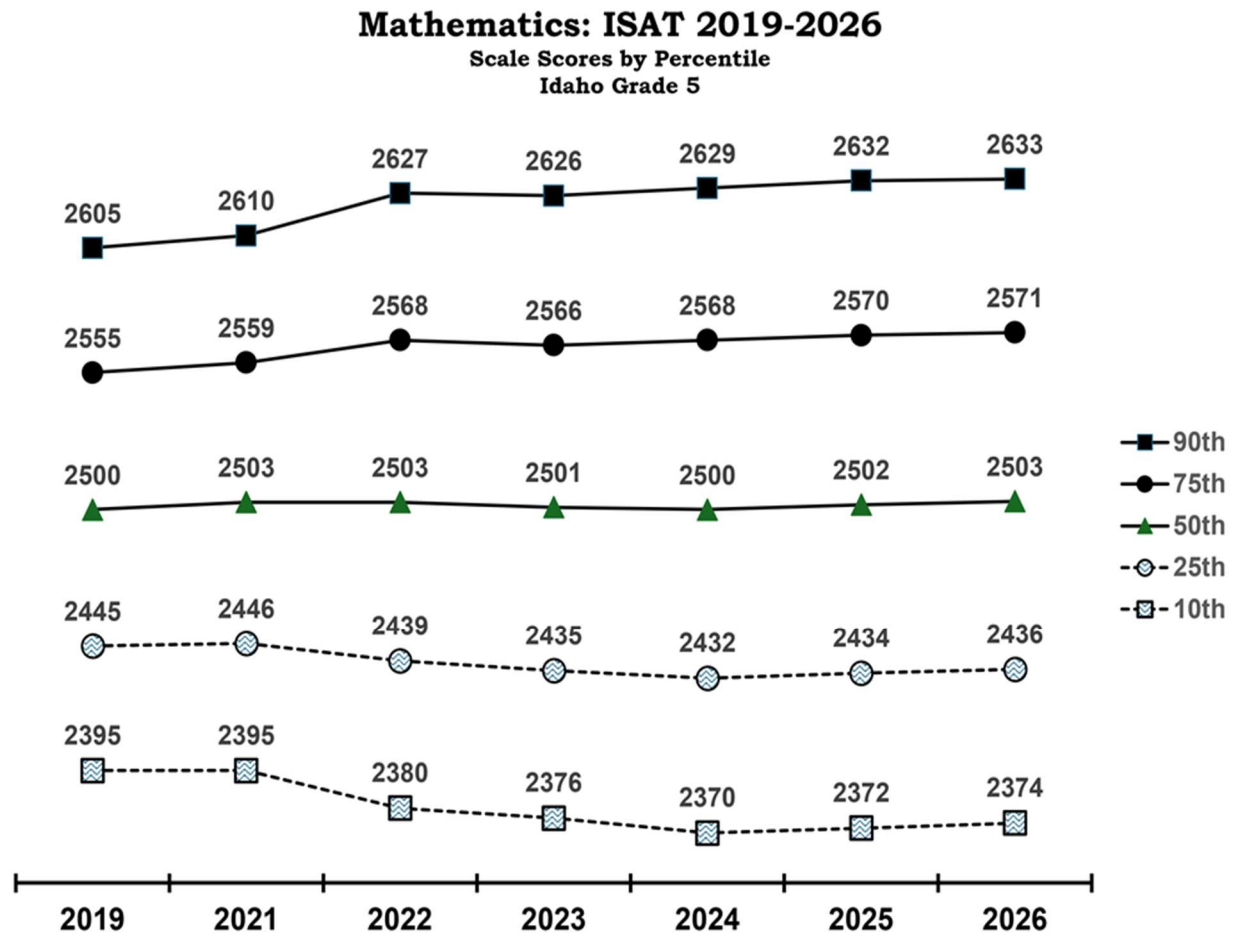


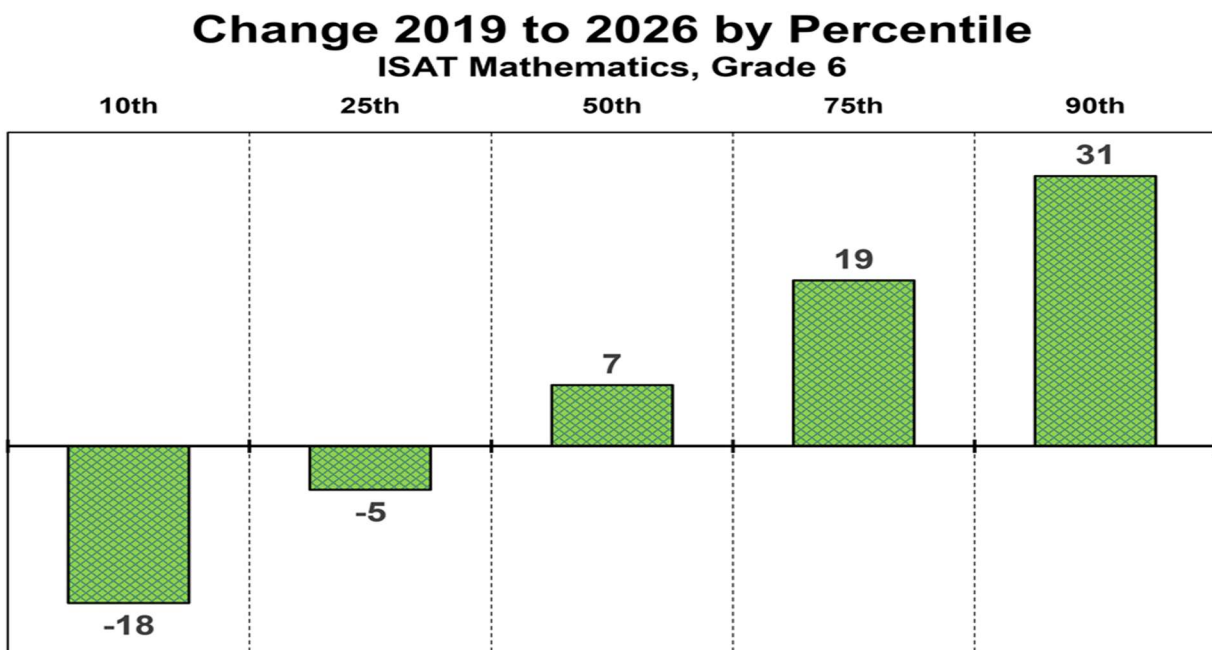
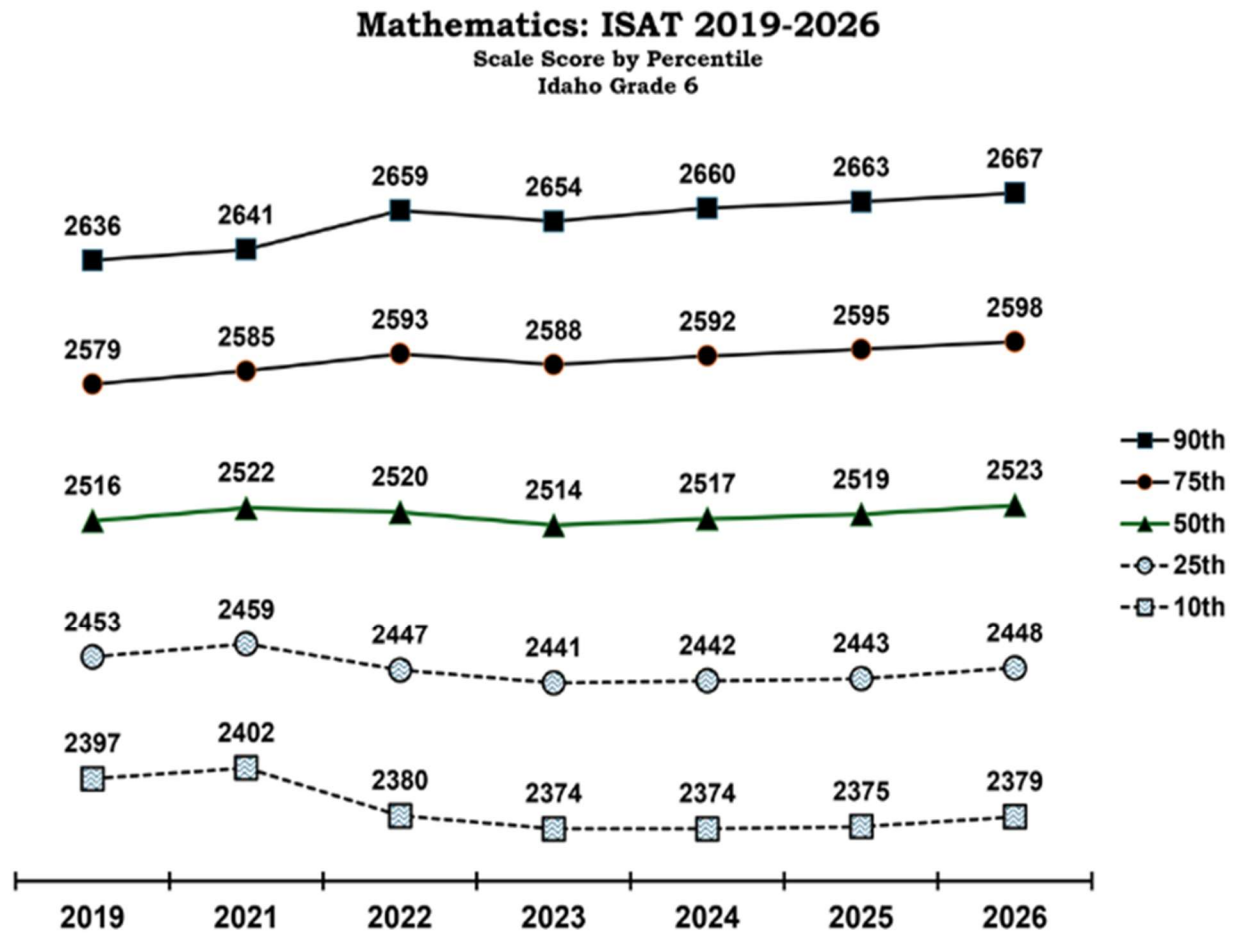






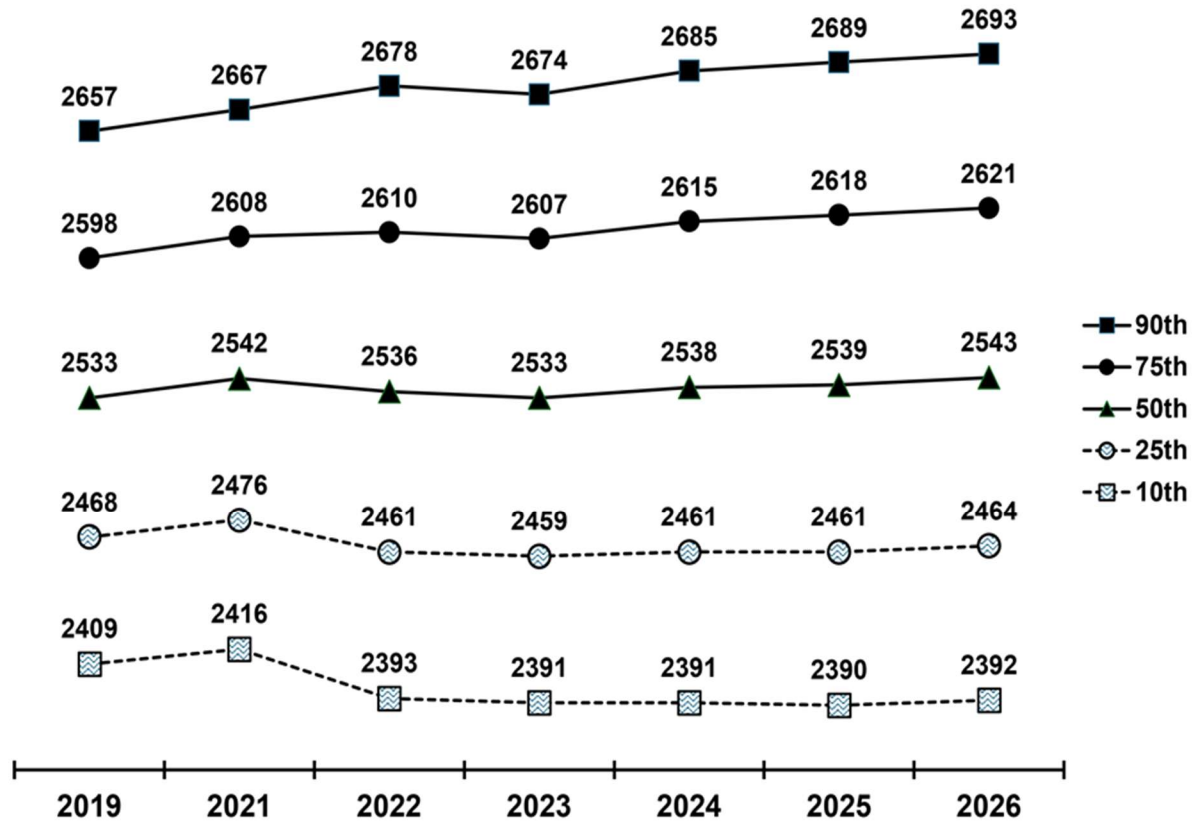






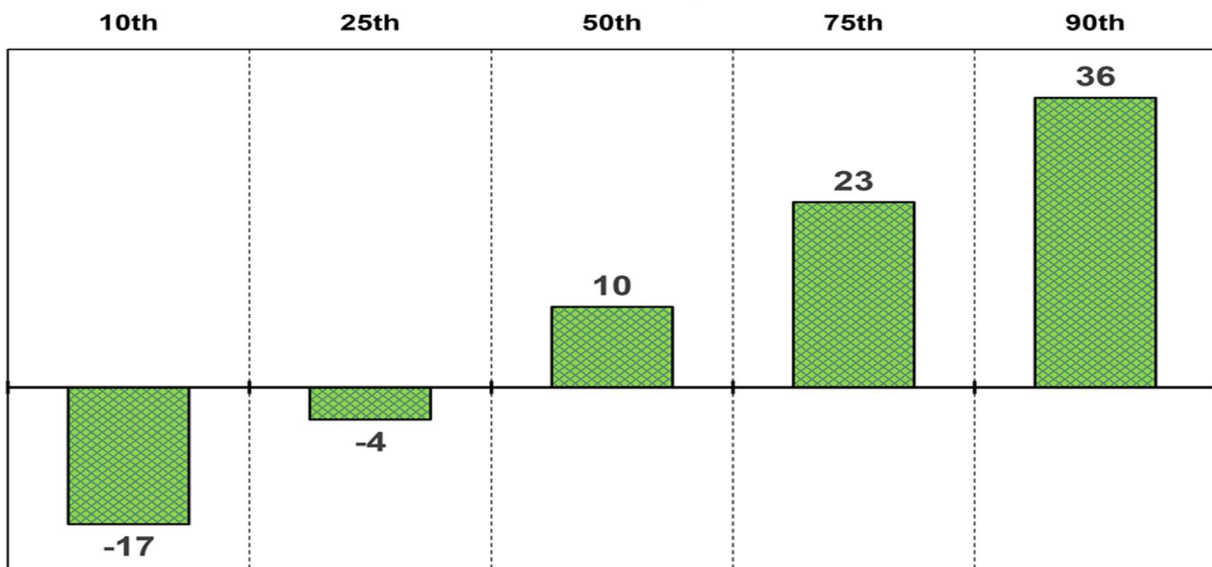
Mathematics: ISAT 2019-2026

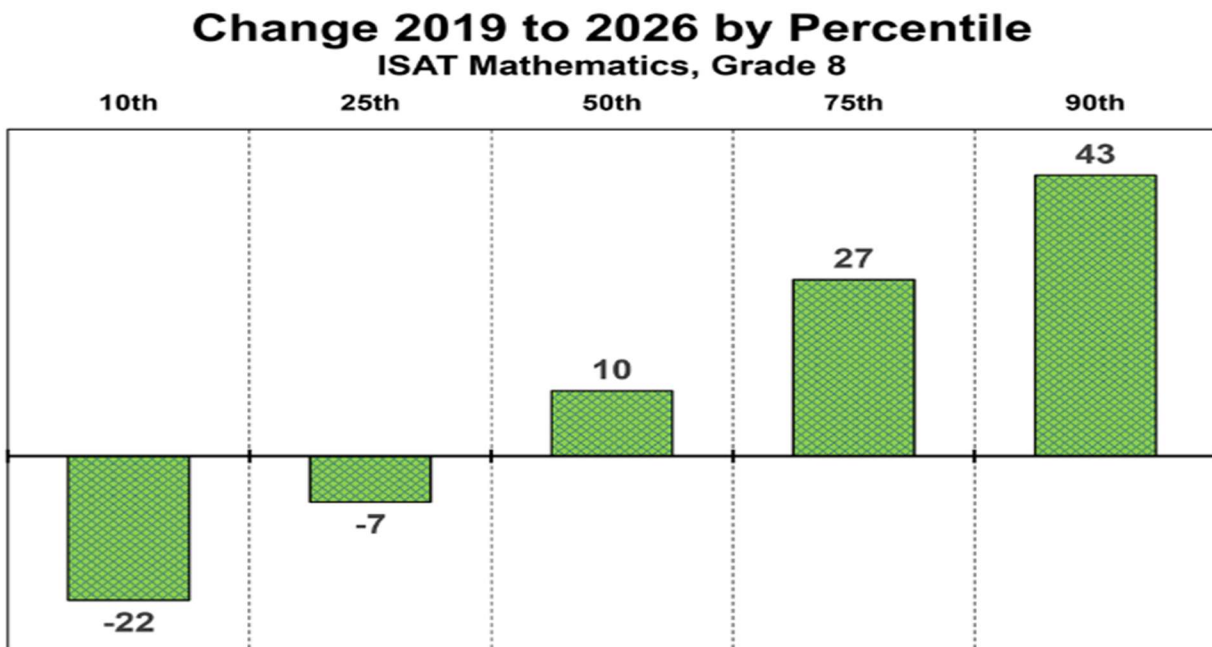
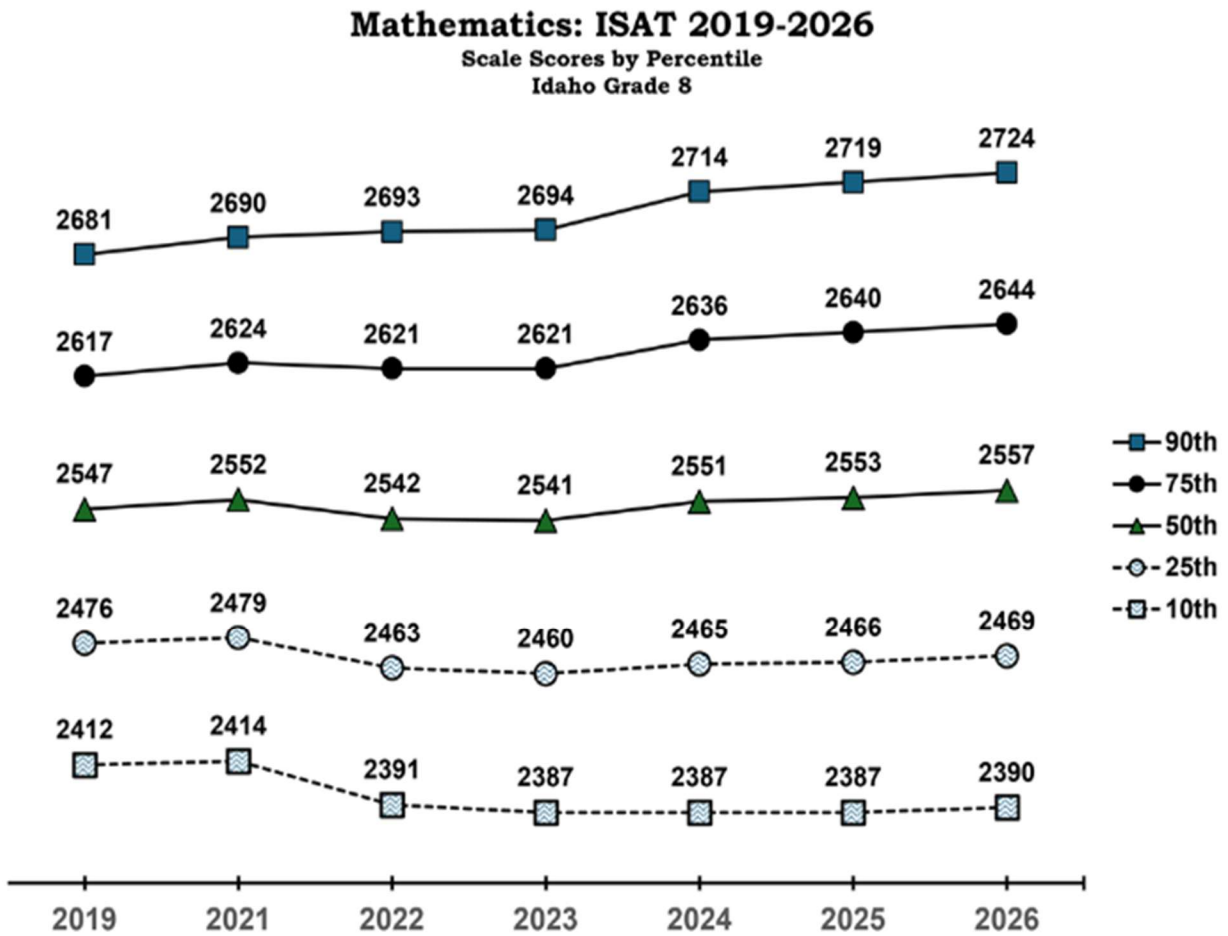
Scale Scores by Percentile
Idaho Grade 7



Change 2019 to 2026 by Percentile

ISAT Mathematics, Grade 7





Summary and Discussion: This and That

As you made your way through the data displays for both English Language Arts and Mathematics, you probably noticed similar “growth patterns” from 2019 to 2026 appeared for both tests, as marked in yellow below.

Idaho Statewide Results									
ISAT English Language Arts - Growth from 2019 to 2026									
Percentile		3rd	4th	5th	6th	7th	8th		
High Performing	90th	8	8	12	3	9	26	66	
High Average	75th	2	2	5	-2	5	18	30	
Average	50th	-4	-4	-2	-8	-1	5	-14	
Low Average	25th	-10	-9	-9	-9	-6	-9	-52	
Low Performing	10th	-16	-14	-16	-18	-10	-22	-96	
ISAT Mathematics - Growth from 2019 to 2016									
Percentile		3rd	4th	5th	6th	7th	8th		
High Performing	90th	24	30	28	31	30	43	186	
High Average	75th	13	18	16	19	23	27	116	
Average	50th	2	7	3	7	16	10	45	
Low Average	25th	-9	-6	-9	-5	-4	-7	-40	
Low Performing	10th	-20	-17	-21	-18	-17	-22	-115	

When students receive instruction at their “ability level,” we should expect that students in the 3rd grade, for example, would achieve an average scale score this year that is either at or above what 3rd graders had last year.

- In English Language Arts, the students at high performing and high average levels likely received a level of instruction that was appropriate for their “ability level” while Idaho’s average, low average and low performing students were not as fortunate.
- In Mathematics, the high performing, high average and average for grade level likely received a level of instruction that was appropriate for their “ability level” while Idaho’s low average students and low performing students were not as fortunate.

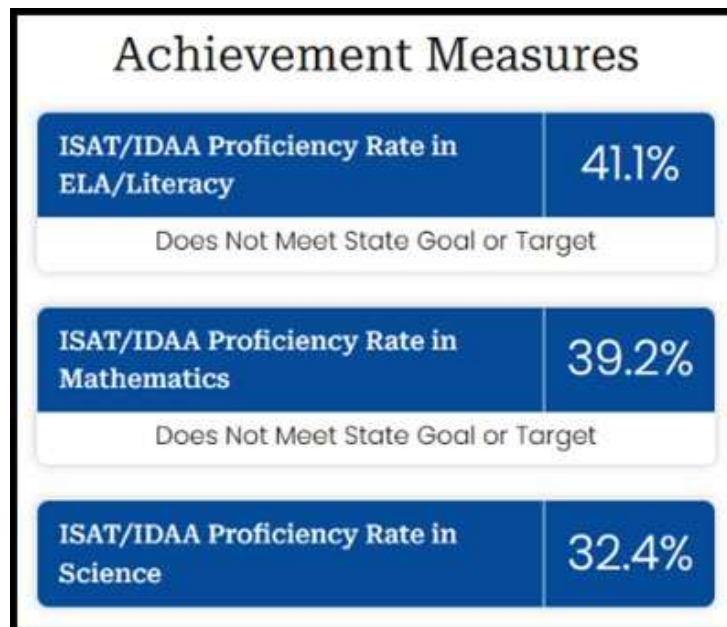
Issues to Investigate and Resolve?

The common growth patterns suggest issues in Idaho's public education system, but they do not directly suggest any possible causes or solutions. That is the responsibility of Idaho's educators. Two issues that Idaho educators might consider investigating are (1) the state's "K-12 comprehensive educational program" and (2) the way the state reports student achievement results on state tests to the public.

Issue #1. Has the Idaho legislature established a comprehensive educational program that provides for our K-12 Idaho students at their individual ability levels? If so, what does it look like? Is the program being faithfully implemented in all districts and schools across the state?

Issue #2. What is the impact of Idaho's routine of annual reporting of ISAT results only for students deemed "proficient and advanced" while remaining silent about the progress or lack thereof among our "basic and below basic" students?

The chart of Achievement Measures (i.e., ISAT) below was retrieved from the State Department of Education's website. It's assumed that the data must be the most recent available (2026). With a focus only on "proficiency" it provides a limited picture of academic achievement today in a school that I attended back in the 1950's.



The “cut score” as a metric for evaluating growth is problematic, especially in states, districts and schools like Idaho’s that have limited financial resources. Andrew Ho¹ noted a reason why students just below the proficiency cut score often receive disproportionate classroom attention and make larger scale score gains. The zero-sum problem is something our state assessment and evaluation officials must consider.

The selection of a cut score can also be motivated by its predicted impact on classroom practice. A recent accumulation of quantitative and qualitative evidence supports the hypothesis that “bubble kids”—students just below the proficiency cut score—receive disproportionate classroom attention and make larger score gains under NCLB (Booher-Jennings, 2005; Choi, Seltzer, Herman, & Yamashiro, 2007; Neal & Schanzenbach, 2007). There are particular concerns if school and teacher resources are “zero-sum,” that is, if increases in gains for bubble kids must coincide with decreases in gains for other students and sum to zero. Schools with limited resources may face the greatest pressure to focus on bubble kids in a zero-sum manner, simply because there are no surpluses available for broader allocation. A high cut score may therefore serve to increase real score disparities, as the lowest scoring students face triage.

#

¹ Ho, A.D. (2008). The Problem With “Proficiency”: Limitations of Statistics and Policy Under No Child Left Behind. *Educational Researcher*, Aug/Sep 2008; 37,6.