



## TECHNICAL REPORT

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# National Norms for IXL's Diagnostic in Grades K-12

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## Overview

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The following report presents national norms for the IXL Diagnostic in mathematics and English language arts (ELA) from kindergarten through twelfth grade. Norm tables are presented by grade and time of year in which these measures are used for benchmarking: beginning of year (BOY; August-November), middle of year (MOY; December-February), or end of year (EOY; March-June). The national norms presented in this technical report are based on IXL Diagnostic Snapshot data from the 2022-23 school year.

## IXL Diagnostic development and administration modes

The IXL Diagnostic is a formative and interim assessment developed by a collaborative team of educators and subject matter experts that covers material aligned with the Common Core and other academic standards (see Bashkov et al., 2021). IXL's Diagnostic is especially valuable because it provides insights for students and educators about students' knowledge levels in key strands of math and ELA.

IXL's Diagnostic is a reliable, valid assessment that can be used in two ways to best meet students' and educators' needs. In *Real-Time* mode, students can use the diagnostic anytime, allowing for real-time assessment of their current knowledge. After completing the initial assessment, which takes only 45 minutes per subject, students can answer just a handful of diagnostic questions each week to keep their diagnostic results and personalized recommendations up to date, ensuring that they make meaningful progress on their learning goals. Teachers can use the immediate insights from the Real-Time Diagnostic to understand exactly what students need to improve on a day-to-day basis and to easily differentiate instruction.

IXL's Diagnostic can also be used in *Snapshot* mode, which serves as a flexible, lightweight benchmark assessment. Snapshot mode allows administrators to capture student knowledge levels at a fixed point in time, across all students in a target grade level, school, or district. Unlike the Diagnostic's Real-Time mode, which provides assessment to ensure that students' personalized recommendations stay up-to-date, Snapshot mode is designed to be used one or more discrete times throughout the school year to provide a high-level overview of students' grade-level proficiency in key math and ELA strands. For example, a school administrator may administer the Diagnostic Snapshot for beginning-of-year benchmarking and then conduct a mid-year Snapshot to see how students' knowledge has grown. Snapshot mode allows administrators to easily track student progress between Snapshots, which can help inform school or district-level planning and decision-making.

## **IXL Diagnostic strands and scoring**

To measure students' knowledge levels, the IXL Diagnostic applies item response theory to estimate the numeric scores that represent student knowledge levels in math and ELA overall and across key strands (i.e., broad skill categories). For math, the strands include (a) Numbers & Operations, (b) Algebra & Algebraic Thinking, (c) Fractions, (d) Geometry, (e) Measurement, and (f) Data, Statistics, & Probability. For ELA, the strands include (a) Reading Strategies, (b) Vocabulary, (c) Writing Strategies, and (d) Grammar & Mechanics. A Reading Level score for ELA is also provided. The overall diagnostic scores for math and ELA are weighted averages of the strand scores. IXL Diagnostic scores are scaled such that scores correspond to grade levels. For example, a score of 350 indicates that the student has acquired about 50% of third-grade material, whereas a score of 400 indicates that the student is ready to learn fourth-grade material.

## **Reliability and validity**

Numerous studies have examined the psychometric properties of the IXL Diagnostic and have yielded desirable reliability and validity evidence, including coherent internal structure (IXL Learning, 2020a), multi-group measurement invariance (An et al., 2022), high reliability (IXL Learning, 2020a; Schonberg, 2021a), and strong predictive validity coefficients using multiple well-established assessments as criterion measures (An, 2021, 2022a, 2022b, 2022c, 2023; Hargis, 2022, 2023; IXL Learning, 2020b; Schonberg, 2021a, 2021b, 2022, 2023).

## **Norming**

Assessment norms provide information about the typical levels of performance for an identifiable population of students or schools. For example, a student may achieve the highest test score in her class on a given assessment but still fall below the national average of students at her grade level who have completed the same assessment (i.e., a percentile rank < 50). This information allows educators to compare their students' scores to the scores of students across the United States who completed the same assessment. Such comparisons are often used to help educators to appropriately target resources to maximize student learning and achievement.

## Norming Sample

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The sample included IXL Diagnostic Snapshots administered to 734,064 students from 2,690 schools in 48 states and Washington D.C. during the 2022-23 academic year. School-level demographic data were obtained from the National Center for Education Statistics (NCES; <https://nces.ed.gov/ccd>). After matching the IXL Diagnostic sample with school-level demographics, we were able to compare the IXL Diagnostic student demographics with the national averages. As seen in Table 1, the IXL Diagnostic sample is sufficiently representative of student demographics nationwide.

**Table 1. Demographics**

	National %	IXL %
<b>Gender</b>		
Female	48.8	48.9
Male	51.1	51.1
<b>Race/ethnicity</b>		
American Indian or Alaska Native	0.8	1.3
Asian	5.0	5.4
Black or African American	15.4	18.5
Hispanic or Latino	30.3	28.2
Native Hawaiian or Pacific Islander	0.3	0.2
White	48.5	46.6
<b>Free or reduced-price lunch</b>	50.1	48.0

## IXL Diagnostic Norms

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The tables in the appendices show percentile ranks and corresponding IXL Diagnostic scores by grade. Percentile ranks indicate the percentage of students scoring below a specific score. This allows for the comparison of individual student scores to students nationwide. For example, if a fifth-grade student at the beginning of the year earned an overall score of 450 on the IXL Diagnostic in math, then that student scored in the 65th percentile (see Table A1). In other words, the student scored higher than 65% of students who completed the IXL Diagnostic math assessment.

School and district administrators can also see students' percentile ranks directly within the [Diagnostic Levels](#) and [Diagnostic Strands](#) reports in IXL Analytics.

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## Appendix A: Beginning-of-Year Mathematics K-8

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**Table A1. Beginning-of-Year Math: Overall**

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	10	20	50	70	100	110	140	160
<b>5</b>	-	30	60	100	160	220	240	280	310
<b>10</b>	10	40	80	140	210	270	290	340	370
<b>15</b>	10	50	90	170	240	300	330	370	420
<b>20</b>	20	60	110	190	270	320	350	400	450
<b>25</b>	20	70	130	210	280	340	380	430	480
<b>30</b>	20	70	140	220	300	360	400	460	510
<b>35</b>	30	80	150	230	310	370	410	480	540
<b>40</b>	30	80	170	240	320	390	430	500	560
<b>45</b>	40	90	180	250	330	400	450	520	590
<b>50</b>	40	90	190	260	350	410	470	540	610
<b>55</b>	40	100	200	270	360	420	480	560	630
<b>60</b>	50	100	200	280	370	440	500	580	650
<b>65</b>	50	110	210	290	380	450	520	610	680
<b>70</b>	60	120	220	300	390	460	540	630	700
<b>75</b>	60	140	230	310	400	480	560	650	720
<b>80</b>	70	150	240	320	410	500	580	680	750
<b>85</b>	80	160	250	330	430	510	600	700	780
<b>90</b>	80	180	270	350	440	540	640	740	820
<b>95</b>	100	210	290	370	470	580	690	790	870
<b>99</b>	170	280	350	430	550	680	780	900	980

**Table A2. Beginning-of-Year Math: Numbers & Operations**

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	-	40	70	90	110	140	160
<b>5</b>	-	-	60	100	170	240	270	320	360
<b>10</b>	-	40	80	160	240	310	350	390	420
<b>15</b>	-	50	90	190	270	350	390	430	470
<b>20</b>	-	60	120	210	300	370	420	460	510
<b>25</b>	10	60	140	230	320	390	440	490	560
<b>30</b>	10	70	160	240	340	410	460	520	590
<b>35</b>	20	70	170	260	360	420	480	550	630
<b>40</b>	30	80	180	270	370	440	500	570	660
<b>45</b>	40	80	190	280	380	450	520	590	690
<b>50</b>	40	90	210	290	390	460	530	620	720
<b>55</b>	50	100	220	300	410	470	560	640	740
<b>60</b>	50	110	230	320	420	480	570	660	760
<b>65</b>	60	120	240	330	430	500	590	680	780
<b>70</b>	60	140	240	340	430	510	610	710	790
<b>75</b>	60	150	260	350	440	530	630	730	810
<b>80</b>	70	160	260	370	450	550	650	760	830
<b>85</b>	70	180	280	390	460	560	670	780	850
<b>90</b>	80	200	290	410	480	580	700	820	880
<b>95</b>	100	230	330	430	510	620	750	860	920
<b>99</b>	180	310	410	490	590	720	860	940	1030

**Table A3. Beginning-of-Year Math: Algebra & Algebraic Thinking**

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	-	10	50	70	70	90	100
<b>5</b>	-	-	50	70	100	150	160	220	260
<b>10</b>	-	20	60	90	150	200	210	310	360
<b>15</b>	-	50	80	120	180	230	270	370	430
<b>20</b>	-	50	80	150	210	270	310	420	490
<b>25</b>	-	60	90	170	230	290	350	470	560
<b>30</b>	10	60	100	180	250	330	380	520	600
<b>35</b>	20	70	120	200	270	350	400	560	630
<b>40</b>	30	70	130	210	280	370	440	590	660
<b>45</b>	40	70	150	220	310	380	460	620	670
<b>50</b>	50	80	160	230	330	400	480	640	690
<b>55</b>	50	80	170	240	350	420	510	650	720
<b>60</b>	50	90	180	250	360	440	540	670	740
<b>65</b>	60	90	200	260	380	460	570	690	750
<b>70</b>	60	100	210	270	390	480	600	710	770
<b>75</b>	60	120	220	280	410	500	630	730	790
<b>80</b>	70	140	230	300	430	530	650	750	810
<b>85</b>	70	160	250	330	450	570	660	770	850
<b>90</b>	80	180	260	350	470	620	690	790	880
<b>95</b>	90	210	290	400	530	660	750	840	930
<b>99</b>	170	280	390	490	650	750	820	940	1060

**Table A4. Beginning-of-Year Math: Fractions**

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	-	-	100	100	100	110	120
<b>5</b>	-	-	-	100	200	250	260	280	280
<b>10</b>	-	-	100	160	250	290	310	320	330
<b>15</b>	-	-	110	200	280	320	330	340	350
<b>20</b>	-	-	140	220	290	340	350	360	370
<b>25</b>	-	-	170	230	310	350	360	380	400
<b>30</b>	-	-	180	240	320	360	380	400	430
<b>35</b>	-	-	200	260	330	370	390	430	450
<b>40</b>	-	100	210	260	340	390	420	450	470
<b>45</b>	-	110	220	270	340	400	440	460	490
<b>50</b>	-	120	230	270	350	420	450	480	510
<b>55</b>	-	130	240	280	360	430	470	500	540
<b>60</b>	-	160	250	280	370	450	480	530	560
<b>65</b>	-	170	260	290	370	460	500	540	590
<b>70</b>	100	190	270	300	380	470	530	570	630
<b>75</b>	110	200	270	310	390	480	540	600	680
<b>80</b>	120	220	270	320	400	490	570	650	730
<b>85</b>	130	240	280	330	420	510	600	700	780
<b>90</b>	160	250	290	340	440	530	640	770	800
<b>95</b>	200	270	310	360	470	560	710	800	800
<b>99</b>	260	310	360	430	530	670	800	800	800

**Table A5. Beginning-of-Year Math: Geometry**

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	-	-	-	20	0	50	50
<b>5</b>	-	-	-	40	70	90	90	110	130
<b>10</b>	-	-	40	70	100	150	150	210	240
<b>15</b>	-	10	60	80	130	230	230	260	290
<b>20</b>	-	30	70	90	190	260	260	310	340
<b>25</b>	-	50	80	100	230	300	300	340	370
<b>30</b>	-	60	80	120	250	330	330	360	410
<b>35</b>	-	70	90	130	270	340	350	390	440
<b>40</b>	10	70	100	150	290	360	380	420	470
<b>45</b>	20	80	100	180	320	380	410	450	510
<b>50</b>	30	80	110	200	330	400	430	480	550
<b>55</b>	40	90	130	230	340	420	450	510	580
<b>60</b>	50	100	140	230	350	440	470	550	630
<b>65</b>	60	100	150	240	370	450	500	580	660
<b>70</b>	70	110	180	260	380	460	520	610	680
<b>75</b>	70	120	200	270	400	480	550	650	710
<b>80</b>	80	140	230	300	420	500	570	670	750
<b>85</b>	90	160	230	320	430	510	600	690	780
<b>90</b>	100	200	250	340	450	530	640	730	830
<b>95</b>	120	230	280	370	490	570	690	790	880
<b>99</b>	230	280	350	450	560	690	790	890	990

**Table A6. Beginning-of-Year Math: Measurement**

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	30	30	30	30	30	70	50	110	120
<b>5</b>	30	30	30	130	170	190	190	210	220
<b>10</b>	30	30	100	180	210	220	220	240	250
<b>15</b>	30	30	150	200	220	230	240	260	280
<b>20</b>	30	50	160	210	230	250	260	280	310
<b>25</b>	30	80	180	220	240	260	270	300	330
<b>30</b>	30	90	190	230	250	270	290	320	360
<b>35</b>	30	110	190	230	260	290	310	340	390
<b>40</b>	30	130	200	240	270	300	320	370	420
<b>45</b>	30	140	210	250	290	320	340	390	450
<b>50</b>	40	150	210	250	300	330	360	410	480
<b>55</b>	50	160	220	260	310	350	380	440	510
<b>60</b>	70	170	220	270	320	370	400	470	530
<b>65</b>	80	180	230	280	330	380	420	500	560
<b>70</b>	90	190	230	290	350	400	450	520	580
<b>75</b>	100	190	240	300	360	420	480	550	610
<b>80</b>	110	200	240	310	380	450	510	580	660
<b>85</b>	130	210	250	330	390	470	540	610	690
<b>90</b>	160	220	270	350	420	510	580	680	700
<b>95</b>	180	240	290	370	460	560	660	700	700
<b>99</b>	230	280	360	440	550	690	700	700	700

**Table A7. Beginning-of-Year Math: Data, Statistics, & Probability**

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	-	-	40	70	70	90	100
<b>5</b>	-	-	40	80	110	160	170	210	240
<b>10</b>	-	10	70	110	160	220	250	290	310
<b>15</b>	-	40	90	140	200	260	290	330	350
<b>20</b>	-	60	100	160	240	300	320	360	390
<b>25</b>	-	70	110	170	270	310	340	390	430
<b>30</b>	10	70	120	190	290	330	370	420	450
<b>35</b>	10	80	140	220	310	360	390	450	480
<b>40</b>	30	90	150	240	320	380	410	470	500
<b>45</b>	50	90	160	250	340	390	430	490	540
<b>50</b>	60	100	170	270	350	410	450	510	580
<b>55</b>	70	100	180	280	370	430	460	540	600
<b>60</b>	70	110	200	300	380	450	480	580	640
<b>65</b>	70	120	220	310	390	460	500	600	660
<b>70</b>	80	140	240	320	420	470	520	620	690
<b>75</b>	90	150	250	330	440	490	550	650	730
<b>80</b>	90	160	270	350	450	510	580	670	760
<b>85</b>	100	170	290	380	460	550	610	700	800
<b>90</b>	110	200	310	390	480	590	640	740	850
<b>95</b>	150	250	330	450	520	630	690	810	910
<b>99</b>	230	320	420	500	640	730	850	940	1040

## Appendix B: Beginning-of-Year ELA K-8

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**Table B1. Beginning-of-Year ELA: Overall**

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	20	30	50	70	70	80	90
<b>5</b>	-	20	50	80	110	160	160	210	240
<b>10</b>	-	30	70	100	170	210	230	280	310
<b>15</b>	-	40	90	130	200	250	270	330	370
<b>20</b>	-	50	100	160	230	280	300	370	420
<b>25</b>	10	60	110	180	250	310	330	410	460
<b>30</b>	10	70	120	200	270	330	360	440	510
<b>35</b>	20	70	140	210	290	350	390	480	550
<b>40</b>	20	80	150	230	310	370	410	510	590
<b>45</b>	20	90	170	240	320	400	440	550	630
<b>50</b>	30	90	180	260	340	420	470	580	660
<b>55</b>	30	100	190	270	360	440	490	610	700
<b>60</b>	40	100	200	280	380	470	520	650	740
<b>65</b>	40	110	220	300	400	490	550	680	770
<b>70</b>	50	130	230	310	420	520	590	710	810
<b>75</b>	50	140	240	330	450	550	620	750	850
<b>80</b>	60	150	260	360	480	590	660	790	900
<b>85</b>	70	180	280	390	510	630	700	840	950
<b>90</b>	80	200	300	420	560	680	750	900	1020
<b>95</b>	100	240	350	480	630	760	840	1000	1110
<b>99</b>	200	330	480	620	770	920	1020	1160	1210

**Table B2.** Beginning-of-Year ELA: Reading Level

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	10	20	30	50	50	70	70
<b>5</b>	-	-	30	70	100	140	150	200	230
<b>10</b>	-	20	60	100	160	210	230	290	320
<b>15</b>	-	30	80	120	200	260	290	340	370
<b>20</b>	-	40	90	150	240	300	330	380	410
<b>25</b>	-	50	100	180	270	330	360	410	450
<b>30</b>	-	60	120	200	290	350	380	440	480
<b>35</b>	10	70	140	220	310	370	400	460	510
<b>40</b>	10	80	150	240	330	390	430	490	550
<b>45</b>	10	80	170	260	350	410	450	520	590
<b>50</b>	20	90	180	280	370	430	470	550	640
<b>55</b>	20	90	200	290	380	450	490	590	680
<b>60</b>	30	100	220	310	400	470	510	630	730
<b>65</b>	30	110	230	330	410	490	540	670	770
<b>70</b>	30	120	250	340	430	510	570	710	820
<b>75</b>	40	140	270	360	450	540	610	750	870
<b>80</b>	50	160	290	380	480	580	660	800	920
<b>85</b>	60	180	310	400	510	630	710	860	990
<b>90</b>	80	220	340	430	560	680	770	940	1070
<b>95</b>	100	260	380	480	640	780	890	1050	1190
<b>99</b>	220	360	480	630	820	980	1100	1250	1300

**Table B3.** Beginning-of-Year ELA: Reading Strategies

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	-	-	10	30	20	40	40
<b>5</b>	-	-	10	50	80	100	110	160	190
<b>10</b>	-	-	50	80	130	190	210	260	290
<b>15</b>	-	10	70	100	180	240	260	310	340
<b>20</b>	-	20	80	130	220	280	310	350	380
<b>25</b>	-	30	90	160	250	310	340	380	410
<b>30</b>	-	50	100	190	280	340	360	400	440
<b>35</b>	-	60	120	210	300	360	380	430	470
<b>40</b>	-	70	140	230	320	380	400	460	500
<b>45</b>	-	70	160	250	340	390	430	480	550
<b>50</b>	-	80	170	270	360	410	450	520	610
<b>55</b>	10	80	190	280	370	430	470	560	660
<b>60</b>	10	90	210	300	390	450	490	610	700
<b>65</b>	20	100	230	320	400	470	520	660	750
<b>70</b>	20	100	240	340	430	500	560	700	800
<b>75</b>	30	120	260	360	450	530	610	750	860
<b>80</b>	40	150	280	370	470	570	660	800	920
<b>85</b>	50	170	300	400	500	620	710	860	980
<b>90</b>	70	210	330	430	550	680	780	950	1060
<b>95</b>	90	250	380	480	650	790	910	1070	1210
<b>99</b>	210	350	480	640	850	1010	1140	1300	1300

**Table B4.** Beginning-of-Year ELA: Vocabulary

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	-	30	70	100	110	140	150
<b>5</b>	-	-	70	120	170	200	220	260	310
<b>10</b>	-	30	110	160	210	270	300	360	390
<b>15</b>	-	60	140	190	250	320	350	400	440
<b>20</b>	-	80	160	200	290	360	380	440	480
<b>25</b>	-	90	170	220	320	380	400	470	530
<b>30</b>	-	100	180	240	340	400	430	500	570
<b>35</b>	10	120	190	260	360	420	450	540	620
<b>40</b>	10	130	200	290	380	440	470	570	650
<b>45</b>	30	140	210	310	390	460	490	600	700
<b>50</b>	40	150	220	320	400	470	520	630	740
<b>55</b>	50	160	230	340	420	490	540	660	770
<b>60</b>	60	170	250	350	430	510	570	700	810
<b>65</b>	70	180	260	370	450	540	600	740	840
<b>70</b>	80	190	290	380	470	570	620	770	880
<b>75</b>	90	200	310	390	490	600	650	800	930
<b>80</b>	100	210	330	410	520	630	680	840	1000
<b>85</b>	120	230	350	440	550	670	730	880	1070
<b>90</b>	150	260	370	470	600	730	780	970	1160
<b>95</b>	180	310	410	520	670	810	870	1110	1250
<b>99</b>	270	390	510	670	820	1020	1140	1300	1300

**Table B5.** Beginning-of-Year ELA: Writing Strategies

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	-	-	-	-	-	-	-
<b>5</b>	-	-	-	-	-	-	200	200	200
<b>10</b>	-	-	-	-	-	200	210	220	250
<b>15</b>	-	-	-	-	-	210	220	270	320
<b>20</b>	-	-	-	-	200	230	260	330	380
<b>25</b>	-	-	-	-	220	260	290	380	450
<b>30</b>	-	-	-	200	240	290	330	430	510
<b>35</b>	-	-	-	220	260	320	360	480	570
<b>40</b>	-	-	-	220	280	350	410	540	630
<b>45</b>	-	-	200	240	300	390	450	580	700
<b>50</b>	-	-	210	260	330	430	490	640	760
<b>55</b>	-	200	220	270	350	460	530	700	790
<b>60</b>	-	210	230	280	380	490	570	750	810
<b>65</b>	-	220	250	300	410	540	620	780	840
<b>70</b>	200	220	260	320	450	570	680	810	860
<b>75</b>	220	240	280	340	480	610	740	830	900
<b>80</b>	220	260	290	370	530	680	780	860	960
<b>85</b>	220	270	310	430	580	760	820	910	1020
<b>90</b>	250	290	350	480	650	800	850	990	1110
<b>95</b>	280	340	420	570	770	860	960	1110	1230
<b>99</b>	390	520	600	780	870	1060	1170	1300	1300

**Table B6.** Beginning-of-Year ELA: Grammar & Mechanics

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	-	-	20	40	20	40	40
<b>5</b>	-	-	30	60	70	80	80	110	140
<b>10</b>	-	20	60	70	90	130	140	190	240
<b>15</b>	-	40	70	80	120	170	190	250	300
<b>20</b>	-	50	70	90	150	200	230	290	360
<b>25</b>	-	60	80	110	170	240	260	340	410
<b>30</b>	-	60	90	130	200	260	280	380	450
<b>35</b>	10	70	90	150	230	290	320	420	480
<b>40</b>	10	70	100	160	250	320	350	450	520
<b>45</b>	20	70	110	180	260	350	380	480	560
<b>50</b>	30	80	130	190	290	380	410	510	590
<b>55</b>	40	80	140	210	320	410	440	550	620
<b>60</b>	50	90	150	230	340	430	460	580	660
<b>65</b>	50	90	160	250	360	460	490	610	690
<b>70</b>	60	100	170	270	390	480	530	640	730
<b>75</b>	60	110	190	290	420	510	570	680	760
<b>80</b>	70	120	210	330	450	540	600	720	800
<b>85</b>	70	140	230	360	470	580	640	760	850
<b>90</b>	80	150	250	400	520	610	700	810	900
<b>95</b>	90	190	310	460	580	690	770	900	980
<b>99</b>	140	270	450	590	720	850	950	1020	1100

## Appendix C: Middle-of-Year Mathematics K-8

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**Table C1.** Middle-of-Year Math: Overall

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	10	30	50	70	100	140	170	180	200
<b>5</b>	20	50	90	140	200	250	290	300	330
<b>10</b>	30	70	120	190	250	300	340	360	400
<b>15</b>	40	80	150	220	280	330	380	400	450
<b>20</b>	40	90	170	240	300	350	410	430	490
<b>25</b>	50	90	180	250	320	370	430	460	520
<b>30</b>	50	100	200	260	340	390	450	490	550
<b>35</b>	60	110	210	280	350	410	470	510	570
<b>40</b>	60	120	220	290	360	420	490	540	600
<b>45</b>	70	130	220	300	370	440	510	560	620
<b>50</b>	70	140	230	310	380	450	530	580	650
<b>55</b>	70	150	240	310	390	470	550	600	670
<b>60</b>	80	160	250	320	400	480	560	620	690
<b>65</b>	80	170	250	330	420	500	580	640	710
<b>70</b>	90	180	260	340	430	510	600	660	740
<b>75</b>	90	190	270	350	440	530	620	690	760
<b>80</b>	90	200	280	360	450	540	640	710	790
<b>85</b>	100	210	290	380	470	560	660	740	820
<b>90</b>	120	230	300	390	490	590	690	770	850
<b>95</b>	150	250	330	420	520	630	730	820	910
<b>99</b>	220	300	390	480	590	720	830	930	990

**Table C2.** Middle-of-Year Math: Numbers & Operations

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	50	70	90	150	170	180	200
<b>5</b>	-	50	90	150	220	280	340	350	380
<b>10</b>	10	70	130	210	280	360	400	420	450
<b>15</b>	30	80	170	240	330	390	440	460	510
<b>20</b>	40	80	190	270	360	420	480	500	560
<b>25</b>	50	90	210	290	380	440	510	540	600
<b>30</b>	50	100	220	310	400	460	540	580	640
<b>35</b>	60	120	230	330	420	480	560	600	670
<b>40</b>	60	130	240	340	430	490	580	630	710
<b>45</b>	60	150	250	350	440	510	600	650	730
<b>50</b>	70	150	260	360	450	530	620	670	750
<b>55</b>	70	160	260	370	460	540	640	690	770
<b>60</b>	70	170	270	380	460	550	650	710	790
<b>65</b>	80	180	280	390	470	560	660	730	810
<b>70</b>	80	190	290	400	480	570	670	750	820
<b>75</b>	80	200	300	410	490	580	680	770	840
<b>80</b>	90	220	310	420	500	600	700	780	860
<b>85</b>	100	230	320	440	510	620	720	800	880
<b>90</b>	120	250	340	450	530	640	750	830	900
<b>95</b>	160	270	380	470	560	670	790	870	940
<b>99</b>	240	340	440	530	650	760	880	950	1050

**Table C3.** Middle-of-Year Math: Algebra & Algebraic Thinking

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	30	50	70	80	90	100	120
<b>5</b>	-	40	70	90	130	170	200	230	280
<b>10</b>	10	60	80	120	180	220	270	340	400
<b>15</b>	30	60	100	150	210	260	330	400	490
<b>20</b>	40	70	110	180	240	290	370	470	570
<b>25</b>	50	70	130	200	260	330	420	540	630
<b>30</b>	50	80	150	210	290	360	460	590	660
<b>35</b>	50	90	170	230	320	380	490	620	680
<b>40</b>	60	90	180	240	350	400	540	650	720
<b>45</b>	60	100	190	260	360	430	570	670	750
<b>50</b>	60	110	200	270	380	450	600	690	770
<b>55</b>	70	120	210	280	400	470	620	710	790
<b>60</b>	70	140	220	300	420	490	640	740	810
<b>65</b>	70	150	230	320	440	520	650	750	830
<b>70</b>	70	160	250	340	450	540	670	770	850
<b>75</b>	80	170	260	360	470	570	680	780	870
<b>80</b>	80	190	260	370	480	590	690	800	890
<b>85</b>	90	200	280	390	500	630	720	820	910
<b>90</b>	100	220	300	420	530	650	750	840	940
<b>95</b>	130	250	330	460	600	680	780	890	980
<b>99</b>	210	310	430	560	680	760	870	1010	1070

**Table C4. Middle-of-Year Math: Fractions**

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	-	100	100	170	180	180	190
<b>5</b>	-	-	100	180	240	280	290	290	310
<b>10</b>	-	-	160	220	280	320	330	330	340
<b>15</b>	-	-	190	240	300	340	350	350	360
<b>20</b>	-	-	210	260	320	350	380	370	380
<b>25</b>	-	100	230	270	330	370	400	400	420
<b>30</b>	-	130	240	270	340	380	430	430	440
<b>35</b>	-	150	240	280	350	400	460	450	460
<b>40</b>	-	170	250	290	360	420	480	470	480
<b>45</b>	-	180	260	300	360	440	500	490	510
<b>50</b>	-	200	260	300	370	450	520	520	530
<b>55</b>	100	210	270	310	380	470	530	540	550
<b>60</b>	110	230	270	320	390	480	550	560	580
<b>65</b>	130	240	270	330	410	490	570	590	610
<b>70</b>	150	240	280	340	420	510	590	620	650
<b>75</b>	170	250	290	340	430	530	610	660	700
<b>80</b>	180	260	300	350	450	540	640	700	760
<b>85</b>	210	270	310	360	460	570	670	750	790
<b>90</b>	230	270	320	380	480	590	710	790	800
<b>95</b>	250	290	340	400	510	620	770	800	800
<b>99</b>	290	330	390	470	580	730	800	800	800

**Table C5.** Middle-of-Year Math: Geometry

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	-	-	30	60	60	60	70
<b>5</b>	-	-	50	70	90	110	130	130	170
<b>10</b>	-	40	70	80	120	200	220	230	260
<b>15</b>	-	60	80	100	180	250	260	270	320
<b>20</b>	20	70	90	120	230	280	310	320	360
<b>25</b>	30	70	100	140	250	320	340	340	390
<b>30</b>	40	80	100	170	270	340	360	370	430
<b>35</b>	50	80	120	200	300	360	390	390	460
<b>40</b>	60	90	130	230	320	380	420	420	490
<b>45</b>	70	90	140	240	340	410	450	450	530
<b>50</b>	70	100	160	250	350	430	480	480	570
<b>55</b>	80	110	170	260	370	440	500	510	610
<b>60</b>	80	120	190	280	380	460	530	540	650
<b>65</b>	90	130	220	300	400	480	550	580	670
<b>70</b>	90	140	230	320	410	490	580	620	700
<b>75</b>	100	150	240	330	430	510	610	660	740
<b>80</b>	100	180	240	350	450	520	640	680	780
<b>85</b>	120	210	260	370	470	540	660	710	820
<b>90</b>	140	230	290	390	490	570	680	760	860
<b>95</b>	180	250	330	430	520	620	730	830	910
<b>99</b>	250	310	400	500	590	720	870	940	1020

**Table C6.** Middle-of-Year Math: Measurement

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	30	30	30	50	90	150	150	150	160
<b>5</b>	30	30	130	170	190	210	210	220	230
<b>10</b>	30	80	160	200	220	230	240	240	260
<b>15</b>	30	100	180	220	230	240	260	270	290
<b>20</b>	30	130	190	230	240	260	280	290	320
<b>25</b>	50	150	200	230	250	270	300	310	350
<b>30</b>	60	150	210	240	260	290	310	330	380
<b>35</b>	80	160	220	250	270	300	330	360	410
<b>40</b>	80	170	220	250	280	320	350	380	440
<b>45</b>	90	180	230	260	300	340	370	410	470
<b>50</b>	100	190	230	270	310	350	390	440	500
<b>55</b>	120	190	240	280	320	370	420	470	530
<b>60</b>	130	200	240	290	340	390	440	500	550
<b>65</b>	140	200	250	300	350	410	470	520	570
<b>70</b>	150	210	250	310	360	430	490	550	590
<b>75</b>	160	220	260	320	380	450	520	570	630
<b>80</b>	170	220	270	340	400	480	550	590	670
<b>85</b>	180	230	290	360	420	510	570	640	700
<b>90</b>	190	240	300	370	450	550	610	690	700
<b>95</b>	220	250	330	400	490	580	690	700	700
<b>99</b>	250	310	390	480	570	700	700	700	700

**Table C7.** Middle-of-Year Math: Data, Statistics, & Probability

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	-	50	70	90	100	100	110
<b>5</b>	-	30	70	100	150	180	210	230	260
<b>10</b>	-	70	90	140	190	260	280	290	320
<b>15</b>	20	70	110	160	240	290	310	330	360
<b>20</b>	40	80	130	190	270	320	340	370	400
<b>25</b>	50	90	150	220	300	340	370	400	440
<b>30</b>	70	90	160	250	320	360	390	430	460
<b>35</b>	70	100	170	260	330	380	420	450	480
<b>40</b>	70	110	180	280	350	400	440	470	500
<b>45</b>	70	120	200	300	370	420	460	480	540
<b>50</b>	80	130	220	310	380	440	470	510	580
<b>55</b>	90	140	240	320	390	460	480	540	610
<b>60</b>	90	150	250	340	420	460	500	580	640
<b>65</b>	90	160	260	350	430	480	530	610	660
<b>70</b>	100	170	280	370	450	490	560	640	700
<b>75</b>	110	180	290	380	460	510	590	660	730
<b>80</b>	120	210	310	390	460	550	620	690	770
<b>85</b>	130	230	320	420	480	580	640	730	810
<b>90</b>	150	260	340	450	500	610	670	780	860
<b>95</b>	180	290	380	460	560	650	730	850	920
<b>99</b>	270	360	460	530	650	780	890	1000	1030

## Appendix D: Middle-of-Year ELA K-8

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**Table D1.** Middle-of-Year ELA: Overall

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	10	40	60	70	90	90	100	120
<b>5</b>	10	40	80	110	150	190	210	230	270
<b>10</b>	20	60	100	150	210	250	280	310	340
<b>15</b>	20	70	120	180	240	290	320	360	400
<b>20</b>	30	80	140	210	270	330	360	410	460
<b>25</b>	30	90	160	230	300	360	400	450	500
<b>30</b>	40	100	170	250	320	380	430	490	550
<b>35</b>	50	100	190	260	340	410	470	530	590
<b>40</b>	50	110	200	280	360	430	490	560	630
<b>45</b>	60	120	210	290	380	460	520	600	670
<b>50</b>	60	130	220	310	400	480	550	640	710
<b>55</b>	70	140	230	320	420	510	580	670	750
<b>60</b>	70	150	250	340	440	530	610	700	780
<b>65</b>	80	160	260	350	460	560	640	740	820
<b>70</b>	80	180	270	370	480	590	670	770	860
<b>75</b>	90	190	290	390	510	620	700	810	900
<b>80</b>	100	200	300	410	540	650	740	850	940
<b>85</b>	100	220	330	440	580	690	780	900	1000
<b>90</b>	120	240	350	480	630	740	830	960	1070
<b>95</b>	160	280	400	540	690	820	930	1060	1150
<b>99</b>	260	380	520	680	830	1000	1110	1200	1240

**Table D2. Middle-of-Year ELA: Reading Level**

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	20	40	60	80	80	90	90
<b>5</b>	-	30	70	100	140	190	210	230	260
<b>10</b>	-	50	90	150	210	260	290	310	340
<b>15</b>	10	70	110	180	250	300	340	370	390
<b>20</b>	20	80	140	210	290	340	370	400	440
<b>25</b>	20	90	160	240	310	370	400	430	470
<b>30</b>	30	90	180	260	330	390	430	470	510
<b>35</b>	30	100	190	280	350	410	450	500	550
<b>40</b>	40	110	210	290	370	430	480	530	590
<b>45</b>	40	120	230	310	390	450	510	570	640
<b>50</b>	50	130	240	330	400	470	530	610	690
<b>55</b>	60	150	260	340	420	490	560	650	730
<b>60</b>	60	160	270	360	440	510	600	690	770
<b>65</b>	70	170	280	370	460	540	630	730	820
<b>70</b>	80	180	300	390	480	570	660	770	860
<b>75</b>	80	200	320	400	500	600	690	810	910
<b>80</b>	90	220	330	420	530	630	730	850	960
<b>85</b>	100	240	350	450	560	670	780	910	1020
<b>90</b>	120	270	380	480	620	740	850	990	1110
<b>95</b>	160	310	420	530	700	840	960	1110	1230
<b>99</b>	290	400	530	690	880	1040	1180	1280	1300

**Table D3. Middle-of-Year ELA: Reading Strategies**

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	-	20	50	60	60	60	70
<b>5</b>	-	-	60	80	120	160	180	200	220
<b>10</b>	-	30	80	130	190	240	260	280	310
<b>15</b>	-	50	100	170	240	290	320	330	360
<b>20</b>	-	70	120	200	270	330	350	370	390
<b>25</b>	-	80	140	230	300	350	380	400	430
<b>30</b>	10	80	160	250	330	370	400	430	470
<b>35</b>	20	90	180	270	350	390	430	460	500
<b>40</b>	20	90	200	290	360	420	460	490	550
<b>45</b>	30	100	210	310	380	440	480	530	610
<b>50</b>	40	120	230	320	400	460	510	580	660
<b>55</b>	50	130	250	340	410	480	540	630	710
<b>60</b>	50	150	260	350	430	500	580	670	750
<b>65</b>	60	160	280	370	450	530	620	710	790
<b>70</b>	70	170	290	380	470	560	650	750	840
<b>75</b>	80	190	310	400	500	590	690	790	890
<b>80</b>	80	210	330	420	520	620	720	840	950
<b>85</b>	90	230	350	440	560	660	770	900	1010
<b>90</b>	100	260	370	470	610	730	850	980	1100
<b>95</b>	150	310	420	530	700	850	970	1120	1240
<b>99</b>	270	390	520	690	910	1070	1220	1300	1300

**Table D4. Middle-of-Year ELA: Vocabulary**

<b>Percentile</b>	<b>K</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>1</b>	-	-	30	70	100	140	140	150	170
<b>5</b>	-	50	110	160	190	240	260	300	340
<b>10</b>	-	80	150	190	250	320	360	380	420
<b>15</b>	-	100	170	220	310	370	400	430	470
<b>20</b>	20	120	180	250	340	400	430	470	520
<b>25</b>	40	140	200	280	370	420	460	510	570
<b>30</b>	50	150	210	310	380	440	490	550	620
<b>35</b>	60	160	220	330	400	470	510	590	660
<b>40</b>	70	170	240	350	410	480	540	630	700
<b>45</b>	80	170	250	360	430	500	570	660	750
<b>50</b>	90	180	270	370	450	530	600	700	780
<b>55</b>	100	190	290	380	470	550	630	740	820
<b>60</b>	110	200	310	400	480	580	660	770	850
<b>65</b>	120	210	320	410	500	610	680	800	890
<b>70</b>	130	220	340	420	520	640	720	830	940
<b>75</b>	150	230	360	440	550	660	750	870	1010
<b>80</b>	160	250	370	460	590	700	780	910	1070
<b>85</b>	170	280	390	490	620	750	820	980	1140
<b>90</b>	190	310	410	520	670	790	880	1080	1210
<b>95</b>	230	360	460	600	750	880	1010	1190	1290
<b>99</b>	340	440	590	750	910	1120	1220	1300	1300

**Table D5.** Middle-of-Year ELA: Writing Strategies

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	-	-	-	-	-	-	200
<b>5</b>	-	-	-	-	-	200	200	200	210
<b>10</b>	-	-	-	-	200	210	230	250	280
<b>15</b>	-	-	-	-	210	250	270	310	350
<b>20</b>	-	-	-	200	230	280	330	360	430
<b>25</b>	-	-	-	210	260	320	370	430	490
<b>30</b>	-	-	-	220	280	350	420	480	560
<b>35</b>	-	-	200	240	310	390	470	540	630
<b>40</b>	-	-	210	260	330	430	520	590	710
<b>45</b>	-	-	220	270	360	460	560	650	760
<b>50</b>	-	-	230	290	390	500	600	720	790
<b>55</b>	-	200	240	310	430	530	650	760	810
<b>60</b>	-	220	260	330	460	570	700	790	840
<b>65</b>	-	220	270	340	490	600	750	810	870
<b>70</b>	200	240	280	370	520	650	780	840	900
<b>75</b>	210	250	300	400	560	710	810	870	960
<b>80</b>	230	270	320	440	590	770	830	910	1010
<b>85</b>	250	280	340	480	660	800	860	980	1070
<b>90</b>	280	300	380	550	750	840	920	1050	1160
<b>95</b>	320	340	460	630	810	920	1040	1180	1270
<b>99</b>	430	520	620	820	950	1140	1250	1300	1300

**Table D6. Middle-of-Year ELA: Grammar & Mechanics**

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	20	40	60	60	60	60	70
<b>5</b>	-	40	60	70	90	110	120	150	180
<b>10</b>	-	50	70	90	130	170	200	240	270
<b>15</b>	20	60	80	110	170	220	250	300	340
<b>20</b>	30	70	90	140	200	260	290	350	400
<b>25</b>	40	70	100	160	230	290	330	400	450
<b>30</b>	50	80	110	180	250	330	370	440	480
<b>35</b>	50	80	130	200	280	360	400	470	520
<b>40</b>	60	90	140	230	300	390	440	500	570
<b>45</b>	60	90	160	240	330	420	460	540	600
<b>50</b>	60	100	170	260	350	450	490	580	630
<b>55</b>	70	100	180	270	380	470	520	600	670
<b>60</b>	70	110	190	300	400	490	560	640	710
<b>65</b>	80	120	210	320	430	510	580	680	740
<b>70</b>	80	140	230	340	450	540	610	710	770
<b>75</b>	90	150	240	360	470	570	640	740	800
<b>80</b>	90	160	260	380	490	590	680	770	830
<b>85</b>	90	180	280	420	530	620	720	800	880
<b>90</b>	100	200	320	450	570	680	760	850	930
<b>95</b>	130	230	380	510	630	750	840	940	990
<b>99</b>	200	330	500	630	780	910	990	1050	1100

## Appendix E: End-of-Year Mathematics K-8

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**Table E1.** End-of-Year Math: Overall

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	10	40	70	90	130	170	190	190	210
<b>5</b>	30	70	120	180	230	280	310	320	350
<b>10</b>	50	90	160	220	280	320	370	380	420
<b>15</b>	60	100	190	250	310	360	410	430	470
<b>20</b>	60	120	200	270	340	380	440	470	510
<b>25</b>	70	130	220	290	360	410	470	500	550
<b>30</b>	70	150	230	300	370	430	490	530	580
<b>35</b>	80	160	240	320	390	450	510	560	610
<b>40</b>	80	170	250	330	400	470	530	580	640
<b>45</b>	90	180	250	340	420	490	550	600	660
<b>50</b>	90	180	260	350	430	500	570	630	690
<b>55</b>	90	190	270	360	440	520	590	650	710
<b>60</b>	100	200	280	370	450	530	610	670	740
<b>65</b>	110	210	290	380	470	550	630	690	760
<b>70</b>	120	220	290	390	480	570	650	720	780
<b>75</b>	130	230	300	400	490	580	670	740	810
<b>80</b>	140	240	310	410	510	600	690	770	840
<b>85</b>	150	250	320	420	520	620	710	790	870
<b>90</b>	170	260	340	440	540	650	740	830	900
<b>95</b>	190	280	370	470	580	690	780	880	950
<b>99</b>	250	340	430	540	690	810	890	980	1040

**Table E2.** End-of-Year Math: Numbers & Operations

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	30	60	80	130	170	190	200	220
<b>5</b>	20	70	120	190	250	310	360	380	400
<b>10</b>	40	80	170	240	320	380	430	440	470
<b>15</b>	50	100	210	280	360	420	470	490	540
<b>20</b>	60	120	230	300	390	440	520	540	600
<b>25</b>	60	140	240	330	410	460	550	580	640
<b>30</b>	70	160	250	350	430	480	580	610	680
<b>35</b>	70	170	260	360	440	500	600	640	720
<b>40</b>	80	180	270	370	450	520	620	660	750
<b>45</b>	80	190	280	380	460	530	640	690	770
<b>50</b>	90	200	290	390	470	550	650	710	790
<b>55</b>	90	210	290	400	480	560	670	730	810
<b>60</b>	100	220	300	410	490	570	680	750	830
<b>65</b>	100	230	310	420	500	590	700	770	840
<b>70</b>	120	240	320	430	510	600	710	780	860
<b>75</b>	130	240	340	440	520	620	730	800	880
<b>80</b>	150	250	350	440	530	640	750	820	890
<b>85</b>	160	260	370	450	550	660	770	840	920
<b>90</b>	180	280	390	470	570	690	800	870	950
<b>95</b>	210	310	420	490	610	730	840	920	1000
<b>99</b>	270	390	480	580	730	850	920	1030	1100

**Table E3.** End-of-Year Math: Algebra & Algebraic Thinking

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	50	60	80	90	100	100	130
<b>5</b>	20	50	70	100	150	180	230	250	300
<b>10</b>	40	70	90	150	200	240	330	370	420
<b>15</b>	50	70	120	180	240	280	400	450	520
<b>20</b>	50	80	140	200	270	330	470	530	600
<b>25</b>	60	90	160	220	300	360	520	590	640
<b>30</b>	60	100	180	240	340	390	560	630	670
<b>35</b>	70	110	190	260	360	420	590	660	710
<b>40</b>	70	120	200	270	380	450	620	680	740
<b>45</b>	70	140	220	290	400	470	640	700	760
<b>50</b>	70	150	230	320	420	490	660	720	780
<b>55</b>	80	160	240	340	440	520	670	740	810
<b>60</b>	80	170	250	360	460	550	680	760	840
<b>65</b>	80	180	260	370	470	570	690	770	860
<b>70</b>	90	190	270	390	490	600	700	790	870
<b>75</b>	90	200	280	400	510	630	720	810	890
<b>80</b>	100	220	290	420	530	650	740	830	920
<b>85</b>	120	230	310	450	570	660	760	850	960
<b>90</b>	150	250	330	470	610	690	780	890	990
<b>95</b>	180	270	370	510	660	740	820	940	1030
<b>99</b>	240	350	470	640	750	830	920	1060	1130

**Table E4.** End-of-Year Math: Fractions

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	100	100	180	210	200	190	190
<b>5</b>	-	-	160	240	280	300	300	300	310
<b>10</b>	-	100	200	270	320	340	340	340	340
<b>15</b>	-	140	230	290	340	360	360	360	370
<b>20</b>	-	170	240	310	360	390	380	380	400
<b>25</b>	-	190	250	320	380	420	410	410	430
<b>30</b>	-	200	260	330	400	450	440	440	450
<b>35</b>	-	220	260	340	410	470	460	460	470
<b>40</b>	100	230	270	350	430	490	480	480	500
<b>45</b>	120	240	270	360	440	510	500	510	530
<b>50</b>	140	240	270	360	450	530	520	530	550
<b>55</b>	160	250	280	370	460	540	540	560	580
<b>60</b>	170	260	280	380	470	560	560	580	600
<b>65</b>	180	260	290	390	480	570	580	620	650
<b>70</b>	200	270	300	390	490	580	600	660	700
<b>75</b>	220	270	310	400	500	600	630	710	750
<b>80</b>	230	270	320	410	510	610	660	750	790
<b>85</b>	240	280	330	420	520	630	700	790	800
<b>90</b>	260	290	340	440	540	660	750	800	800
<b>95</b>	270	310	360	460	570	710	800	800	800
<b>99</b>	310	350	430	520	660	800	800	800	800

**Table E5.** End-of-Year Math: Geometry

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	-	30	60	70	70	70	80
<b>5</b>	-	40	60	80	110	160	160	180	210
<b>10</b>	20	60	80	120	210	250	240	260	290
<b>15</b>	40	70	90	160	250	320	300	320	350
<b>20</b>	50	80	100	220	300	350	340	360	390
<b>25</b>	60	90	120	240	330	390	380	400	430
<b>30</b>	70	90	130	260	360	420	420	430	480
<b>35</b>	80	100	150	280	380	450	450	470	520
<b>40</b>	80	110	170	300	400	470	490	520	560
<b>45</b>	80	120	190	320	420	490	520	560	600
<b>50</b>	90	130	220	340	430	500	550	600	650
<b>55</b>	90	140	230	350	450	520	580	640	680
<b>60</b>	100	150	240	360	460	530	610	670	710
<b>65</b>	110	160	250	380	470	550	640	700	750
<b>70</b>	120	180	270	400	480	560	660	730	780
<b>75</b>	130	200	280	410	500	570	680	760	820
<b>80</b>	140	220	300	430	510	590	700	780	850
<b>85</b>	150	230	320	440	520	610	720	810	880
<b>90</b>	190	250	340	470	540	650	750	850	910
<b>95</b>	230	280	370	500	570	690	800	890	960
<b>99</b>	290	350	470	560	690	830	910	990	1080

**Table E6.** End-of-Year Math: Measurement

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	30	30	40	90	140	160	150	160	160
<b>5</b>	30	90	160	190	210	220	220	230	230
<b>10</b>	40	130	200	220	230	240	240	250	270
<b>15</b>	70	160	210	230	240	260	270	280	300
<b>20</b>	80	170	220	240	250	280	290	310	330
<b>25</b>	90	180	230	250	270	290	310	330	360
<b>30</b>	110	190	230	260	280	310	330	360	400
<b>35</b>	120	200	240	270	300	330	350	390	440
<b>40</b>	130	200	250	280	320	350	380	420	470
<b>45</b>	140	210	250	290	330	370	410	450	500
<b>50</b>	150	220	260	300	350	400	430	480	530
<b>55</b>	160	220	270	310	370	420	460	510	550
<b>60</b>	170	220	280	330	380	450	490	540	570
<b>65</b>	180	230	280	340	400	470	510	560	590
<b>70</b>	180	230	290	350	420	490	540	580	630
<b>75</b>	190	240	300	370	440	510	560	600	670
<b>80</b>	200	240	310	380	470	540	580	650	690
<b>85</b>	210	250	320	400	490	560	620	680	700
<b>90</b>	220	260	340	420	520	580	670	700	700
<b>95</b>	230	280	360	460	560	650	700	700	700
<b>99</b>	260	340	420	540	670	700	700	700	700

**Table E7.** End-of-Year Math: Data, Statistics, & Probability

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	40	70	90	100	110	110	120
<b>5</b>	-	70	90	120	170	220	230	250	260
<b>10</b>	40	80	120	160	240	280	300	320	340
<b>15</b>	60	90	140	200	280	310	340	360	390
<b>20</b>	70	100	160	240	310	340	380	410	440
<b>25</b>	70	110	170	270	320	370	420	440	460
<b>30</b>	70	120	190	290	350	400	450	460	490
<b>35</b>	80	140	210	310	370	420	460	490	530
<b>40</b>	90	150	240	320	390	440	480	520	580
<b>45</b>	90	160	250	340	410	460	510	570	610
<b>50</b>	90	160	270	350	430	470	550	600	650
<b>55</b>	100	170	280	370	450	480	580	630	680
<b>60</b>	110	180	290	380	460	490	600	650	710
<b>65</b>	110	200	310	390	460	510	620	680	740
<b>70</b>	120	220	310	410	470	540	640	710	770
<b>75</b>	140	240	320	430	490	570	660	740	800
<b>80</b>	150	260	340	450	510	600	680	770	820
<b>85</b>	160	280	370	460	540	620	690	800	860
<b>90</b>	170	300	390	470	580	650	730	850	890
<b>95</b>	220	320	430	500	620	700	790	920	950
<b>99</b>	300	390	480	600	740	880	970	1050	1070

## Appendix F: End-of-Year ELA K-8

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**Table F1.** End-of-Year ELA: Overall

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	20	50	70	80	90	90	100	130
<b>5</b>	20	60	90	120	170	200	220	240	270
<b>10</b>	30	80	120	170	230	270	290	320	360
<b>15</b>	40	90	150	210	260	310	340	370	420
<b>20</b>	50	100	170	230	290	340	390	420	480
<b>25</b>	60	110	190	250	320	370	430	470	530
<b>30</b>	70	120	200	270	340	410	460	510	570
<b>35</b>	70	130	220	290	370	430	500	550	620
<b>40</b>	80	150	230	300	390	460	530	590	660
<b>45</b>	80	160	240	320	410	490	560	630	700
<b>50</b>	90	170	250	340	430	510	590	660	740
<b>55</b>	90	180	270	350	450	540	630	700	780
<b>60</b>	100	190	280	370	480	570	660	730	810
<b>65</b>	100	200	290	390	500	600	690	770	850
<b>70</b>	110	210	310	410	530	630	720	810	890
<b>75</b>	120	230	320	430	550	660	750	840	930
<b>80</b>	130	240	340	450	590	690	790	890	980
<b>85</b>	150	260	370	490	630	730	830	940	1040
<b>90</b>	170	280	400	530	680	780	890	1010	1100
<b>95</b>	200	320	460	600	750	870	1000	1110	1180
<b>99</b>	290	420	580	750	900	1070	1170	1220	1260

**Table F2.** End-of-Year ELA: Reading Level

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	10	30	50	70	80	80	80	100
<b>5</b>	10	40	80	120	160	200	210	230	270
<b>10</b>	20	70	110	170	230	270	290	310	350
<b>15</b>	30	90	150	210	270	310	340	360	400
<b>20</b>	40	100	170	240	300	350	380	400	440
<b>25</b>	40	110	190	260	330	370	410	440	480
<b>30</b>	50	130	210	280	350	400	440	470	530
<b>35</b>	60	140	230	300	370	420	470	500	570
<b>40</b>	70	150	250	320	390	440	500	540	620
<b>45</b>	80	170	260	340	410	470	530	580	670
<b>50</b>	80	180	280	350	420	490	560	630	720
<b>55</b>	90	190	290	370	440	510	590	670	760
<b>60</b>	90	200	300	380	460	540	630	720	800
<b>65</b>	100	210	320	400	480	570	660	760	840
<b>70</b>	110	230	330	410	510	600	700	800	890
<b>75</b>	120	240	350	430	530	630	730	850	940
<b>80</b>	130	260	370	450	570	670	770	890	990
<b>85</b>	150	280	390	480	610	710	820	950	1060
<b>90</b>	180	310	410	510	660	780	910	1030	1150
<b>95</b>	220	350	460	590	740	900	1020	1160	1260
<b>99</b>	330	440	580	760	940	1110	1250	1300	1300

**Table F3.** End-of-Year ELA: Reading Strategies

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	10	40	60	70	60	60	70
<b>5</b>	-	30	70	90	140	170	180	200	220
<b>10</b>	-	60	90	150	210	250	270	280	310
<b>15</b>	10	80	130	190	250	300	320	330	360
<b>20</b>	20	90	160	220	290	330	360	370	400
<b>25</b>	30	90	180	250	320	360	380	400	440
<b>30</b>	40	110	200	270	350	380	410	430	470
<b>35</b>	50	130	220	290	360	410	440	460	520
<b>40</b>	60	140	240	310	380	430	470	500	580
<b>45</b>	70	150	250	330	400	450	500	540	630
<b>50</b>	70	170	270	350	420	470	530	600	680
<b>55</b>	80	180	280	360	440	500	570	650	730
<b>60</b>	80	190	290	370	460	520	610	690	770
<b>65</b>	90	210	310	390	480	550	650	730	810
<b>70</b>	90	220	320	400	500	590	680	780	860
<b>75</b>	100	240	340	420	530	620	710	830	910
<b>80</b>	120	260	360	450	560	650	750	870	970
<b>85</b>	140	280	380	470	600	700	810	940	1040
<b>90</b>	170	310	410	510	650	770	900	1020	1140
<b>95</b>	210	350	460	590	740	900	1020	1160	1280
<b>99</b>	330	450	580	770	960	1130	1280	1300	1300

**Table F4.** End-of-Year ELA: Vocabulary

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	50	80	110	140	140	150	170
<b>5</b>	-	80	130	170	200	250	280	300	350
<b>10</b>	20	110	170	210	270	340	370	390	430
<b>15</b>	50	130	190	250	330	380	410	440	490
<b>20</b>	60	150	200	280	360	410	450	490	550
<b>25</b>	80	160	220	310	380	440	490	530	600
<b>30</b>	90	170	240	340	400	470	520	580	650
<b>35</b>	100	180	260	360	420	490	550	620	700
<b>40</b>	110	190	280	370	440	510	590	660	740
<b>45</b>	120	190	300	380	460	540	620	700	780
<b>50</b>	130	200	320	400	480	560	640	740	820
<b>55</b>	140	220	330	410	490	590	670	780	850
<b>60</b>	150	230	350	420	520	620	710	810	900
<b>65</b>	160	240	360	440	540	640	740	840	940
<b>70</b>	170	260	370	460	570	670	770	880	1000
<b>75</b>	180	280	390	470	600	710	800	920	1060
<b>80</b>	190	300	400	490	640	750	840	980	1130
<b>85</b>	200	320	430	520	670	790	890	1060	1190
<b>90</b>	220	350	460	580	730	840	970	1150	1250
<b>95</b>	270	380	500	650	800	950	1120	1240	1300
<b>99</b>	370	470	660	800	990	1180	1300	1300	1300

**Table F5.** End-of-Year ELA: Writing Strategies

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	-	-	-	-	-	-	200
<b>5</b>	-	-	-	-	-	200	200	200	210
<b>10</b>	-	-	-	-	200	220	240	250	290
<b>15</b>	-	-	-	-	220	260	300	320	370
<b>20</b>	-	-	-	200	250	300	350	380	450
<b>25</b>	-	-	-	220	280	340	410	450	530
<b>30</b>	-	-	200	240	320	380	460	500	600
<b>35</b>	-	-	210	260	340	420	510	570	670
<b>40</b>	-	-	220	280	370	460	570	630	750
<b>45</b>	-	-	240	290	410	490	610	700	780
<b>50</b>	-	200	250	320	440	530	670	760	810
<b>55</b>	-	210	260	340	470	570	730	790	840
<b>60</b>	-	220	280	360	500	600	770	810	860
<b>65</b>	-	230	290	380	540	650	790	840	890
<b>70</b>	200	250	300	420	570	720	810	860	940
<b>75</b>	210	260	330	450	610	770	840	900	990
<b>80</b>	220	280	350	490	660	800	870	960	1040
<b>85</b>	250	290	380	540	750	830	910	1020	1120
<b>90</b>	280	310	440	590	790	870	990	1090	1210
<b>95</b>	310	370	530	720	850	980	1110	1220	1290
<b>99</b>	490	530	720	860	1020	1190	1300	1300	1300

**Table F6.** End-of-Year ELA: Grammar & Mechanics

Percentile	K	1	2	3	4	5	6	7	8
<b>1</b>	-	-	30	50	60	60	60	60	70
<b>5</b>	10	50	70	80	100	120	140	150	200
<b>10</b>	40	60	80	100	150	190	210	250	300
<b>15</b>	50	70	90	140	190	240	270	320	370
<b>20</b>	50	80	100	170	230	280	330	370	430
<b>25</b>	60	80	130	190	250	330	370	420	470
<b>30</b>	60	90	140	220	280	360	410	460	510
<b>35</b>	70	90	160	240	320	390	450	490	550
<b>40</b>	70	100	170	260	340	430	480	540	590
<b>45</b>	70	110	190	270	370	450	510	570	630
<b>50</b>	80	120	200	300	390	470	550	600	670
<b>55</b>	80	130	220	320	420	500	570	640	700
<b>60</b>	90	140	230	340	440	530	600	670	740
<b>65</b>	90	150	250	360	460	560	630	710	760
<b>70</b>	90	170	260	380	480	580	660	740	790
<b>75</b>	100	180	280	410	510	600	700	770	820
<b>80</b>	100	190	310	430	540	630	730	800	860
<b>85</b>	110	220	340	460	570	670	770	840	910
<b>90</b>	130	240	380	490	610	730	810	890	960
<b>95</b>	160	270	440	570	680	800	890	970	1010
<b>99</b>	240	380	560	690	820	960	1020	1080	1100

## Appendix G: High School

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**Table G1. Math: Overall**

Percentile	Grade 9			Grade 10			Grade 11			Grade 12		
	BOY	MOY	EOY	BOY	MOY	EOY	BOY	MOY	EOY	BOY	MOY	EOY
<b>1</b>	120	170	170	170	180	180	160	190	190	100	120	100
<b>5</b>	290	320	330	320	330	340	330	340	350	300	300	300
<b>10</b>	360	390	410	390	410	420	400	420	430	380	390	390
<b>15</b>	400	440	460	440	460	480	450	480	490	440	450	460
<b>20</b>	440	480	500	470	500	520	490	520	540	490	500	500
<b>25</b>	470	510	540	510	540	560	530	560	580	520	530	540
<b>30</b>	500	540	570	540	560	590	560	590	610	560	570	580
<b>35</b>	530	570	600	560	590	620	590	620	640	590	600	610
<b>40</b>	550	590	620	590	620	640	610	640	670	620	630	640
<b>45</b>	580	620	650	610	640	670	640	670	690	640	660	670
<b>50</b>	600	640	670	640	670	690	660	700	720	670	680	700
<b>55</b>	630	660	690	660	690	710	690	720	740	700	710	730
<b>60</b>	650	690	720	690	720	740	710	740	770	720	740	760
<b>65</b>	680	710	740	710	740	760	740	770	800	750	770	780
<b>70</b>	700	730	770	740	770	790	760	800	830	780	800	820
<b>75</b>	730	760	790	760	790	820	790	830	860	810	830	850
<b>80</b>	760	790	820	790	830	850	820	860	890	840	860	890
<b>85</b>	790	820	850	820	860	890	860	900	930	890	910	940
<b>90</b>	830	860	890	860	910	940	900	940	980	930	960	990
<b>95</b>	890	910	950	920	970	1010	970	1010	1060	1020	1060	1080
<b>99</b>	990	1010	1050	1040	1090	1130	1110	1130	1190	1180	1200	1210

Note. BOY = beginning of year; MOY = middle of year; EOY = end of year

**Table G2. ELA: Overall**

Percentile	Grade 9			Grade 10			Grade 11			Grade 12		
	BOY	MOY	EOY	BOY	MOY	EOY	BOY	MOY	EOY	BOY	MOY	EOY
1	80	80	90	90	100	100	110	130	140	90	100	90
5	230	240	250	250	260	270	280	290	300	270	270	270
10	320	330	340	350	370	370	380	390	400	380	380	370
15	390	390	410	420	440	440	460	470	480	460	460	450
20	440	450	470	490	510	510	530	530	550	540	540	520
25	490	500	520	540	570	570	590	600	610	600	610	590
30	550	550	570	600	620	630	650	660	670	670	670	660
35	590	600	620	650	670	680	710	710	720	720	720	710
40	640	650	670	700	720	730	760	760	770	780	770	760
45	680	690	720	740	770	780	800	800	820	830	820	820
50	720	740	760	790	810	830	840	850	860	870	870	860
55	760	780	810	830	860	870	890	890	910	910	920	910
60	800	820	850	870	900	920	920	930	950	950	960	960
65	840	860	890	910	940	960	960	970	1000	990	1000	1000
70	880	910	940	950	980	1000	1000	1020	1040	1030	1040	1040
75	930	950	990	990	1020	1040	1040	1060	1080	1070	1070	1080
80	970	1000	1040	1030	1060	1080	1070	1100	1120	1100	1110	1120
85	1020	1060	1090	1080	1110	1130	1110	1130	1160	1140	1150	1150
90	1080	1110	1140	1130	1150	1170	1160	1170	1190	1180	1180	1190
95	1160	1180	1200	1190	1200	1210	1200	1210	1220	1210	1220	1220
99	1240	1250	1270	1240	1270	1290	1260	1280	1290	1280	1300	1300

Note. BOY = beginning of year; MOY = middle of year; EOY = end of year

**Table G3. Reading Level**

Percentile	Grade 9			Grade 10			Grade 11			Grade 12		
	BOY	MOY	EOY	BOY	MOY	EOY	BOY	MOY	EOY	BOY	MOY	EOY
<b>1</b>	60	60	70	70	80	80	80	90	100	70	80	70
<b>5</b>	220	230	240	240	260	260	280	280	280	260	260	250
<b>10</b>	330	330	340	350	360	360	380	380	380	380	370	350
<b>15</b>	380	390	390	410	420	410	440	440	440	440	440	420
<b>20</b>	430	440	440	470	470	470	500	490	500	500	500	480
<b>25</b>	470	480	480	510	520	520	560	550	550	570	560	530
<b>30</b>	510	520	530	560	580	570	620	620	620	640	620	590
<b>35</b>	560	570	580	630	640	630	700	690	680	710	700	660
<b>40</b>	610	620	630	690	710	700	760	750	750	780	770	730
<b>45</b>	660	680	690	740	770	770	820	810	810	840	830	800
<b>50</b>	720	730	750	800	820	830	870	860	870	900	880	860
<b>55</b>	770	790	810	850	870	880	920	920	920	960	940	920
<b>60</b>	820	840	860	900	920	930	970	970	980	1000	1000	980
<b>65</b>	870	890	920	950	970	980	1010	1020	1030	1040	1040	1030
<b>70</b>	920	940	970	990	1020	1030	1050	1060	1080	1090	1090	1080
<b>75</b>	970	990	1020	1040	1060	1080	1090	1110	1130	1140	1130	1130
<b>80</b>	1020	1040	1080	1090	1110	1130	1130	1160	1190	1190	1190	1190
<b>85</b>	1070	1100	1140	1140	1170	1190	1190	1220	1250	1240	1250	1250
<b>90</b>	1150	1190	1220	1220	1240	1260	1250	1270	1280	1280	1280	1290
<b>95</b>	1250	1270	1290	1280	1290	1300	1290	1300	1300	1300	1300	1300
<b>99</b>	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300

Note. BOY = beginning of year; MOY = middle of year; EOY = end of year