



THE SCHOOL DISTRICT OF
PHILADELPHIA

Grades K-5 Math Assessment Data Snapshot

End of Year (EOY) 2020-2021

September 2021

Office of Research and Evaluation

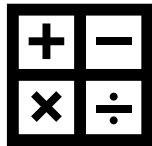
This slide deck provides a District-level overview of K-5th grade student performance on the aimswebPlus Math Assessments from fall to spring.



AimswwebPlus is a universal screening, benchmarking, and progress-monitoring tool from Pearson.



During the 2020-21 school year, aimswebPlus was administered three times (fall, winter, and spring) in grades K-5. Students in each grade take multiple assessments, or “subtests.” Each subtest measures a discrete numeracy skill. Subtest scores are combined into a “composite score.” Composite scores measure student performance on a combination of key skills that are critical to becoming proficient in math.



AimswwebPlus math assessments focus on emerging numeracy skills such as number recognition for kindergarten. In first grade, skills shift to number pair comparisons and math facts. In second through fifth grade, assessments measure mental computation, triad number comparisons, and math concepts.

The District tracks student progress toward Board Goals by using *Leading Indicators*

The **Leading Indicator** toward Goal 3 for the 2020-2021 school year is that by Spring 2021, 54.7% of students in grades 3-8 will test at target on their within-year math assessment.

Board Goal #3
The percentage of students in grades 3-8 who are proficient on the state math assessment will grow from 21.6% in August 2019 to 52.0% by August 2026.



For more information, please visit the District's [Office of Evaluation, Research, and Accountability's Goals and Guardrails page](#).

K-5 students must take the following subtests in order to receive a Composite Score:

Grade Level	Subtest Name (Required for Composite Score)	Skill Assessed
Kindergarten	Number Naming Fluency (NNF)	Amount of numbers between 0 and 20 that students can identify in one minute.
	Quantity Total Fluency (QTF)	The total sum of dots within each presented box students can identify in one minute.
	Concepts and Applications (CA)	The number of one- and two-step word problems students can solve correctly. This subtest is untimed and 25 questions in length.
First	Concepts and Applications (CA)	The number of one- and two-step word problems student can solve correctly. This subtest is untimed and 25 questions in length.
	Number Comparison Fluency -Pairs (NCF-P)	Number of instances a student can identify the larger number in a given pair in one minute.
	Math Facts Fluency -1 Digit (MFF-1D)	The number of simple addition and subtraction problems students can solve correctly in one minute.
Second through Fifth	Concepts and Applications (CA)	The number of multiple-choice math word problems students answer correctly. This subtest is untimed and 29-31 questions in length.
	Number Comparison Fluency-Triads (NCF-T)	The number of instances a student can correctly identify where a given number falls on the number line between the two choices in three minutes.
	Mental Computation Fluency (MCF)	The number of multiple-choice mental math problems students can solve and answer correctly in four minutes.

The following sections present student performance for all K-5th grade students who took aimswebPlus **Math** assessments in 2020-21.

- Student performance and growth on the key metrics outlined on the previous slide is presented as follows:
 - Overall and by grade
 - By racial/ethnic subgroup (separately for K-3 and 4-5)
 - By other student subgroups (economically disadvantaged status, special education, English Learner)
- Tier levels are presented first, followed by Average National Percentile Rank.

We measure **student performance** using the following metrics:

Metric	Description	Analytic Purpose
Average National Percentile	A student's National Percentile; a norm-referenced performance measure that compares a student's scaled score to her grade-level peers nationwide.	The Percentile Rank is useful for understanding a student's reading ability compared to other students in the same grade nationally.
Tier Level	<p>Based on a student's Percentile Rank, Tiers are used to identify the level of intervention students need in order to reach proficiency. There are four tier levels:</p> <ul style="list-style-type: none"> • Tier 1 indicates that students are testing "at target" and are on track to read proficiently. • Tier 2 indicates that students need strategic intervention to ensure progress towards proficiency. • Tier 3 indicates that students require intensive intervention to make progress towards becoming a proficient reader. 	Tier Levels are useful for understanding District-wide performance trends, as well as for identifying students who need additional supports in the classroom.

Student Participation in Assessments, K-5

How many students participated in 2020-21 within-year assessments?

Participation rates decreased between fall and spring for K-3rd grade students, although for some grades they had risen between fall and winter.

Grade Level	Term	Number of students eligible to participate in assessment	Number of students who were assessed	Participation rate (percentage of students who were assessed)
K-3 Overall	Fall	26,359	22,413	85.0%
	Winter	26,581	23,367	87.9%
	Spring	26,625	22,395	84.1%
Kindergarten	Fall	7,376	6,294	91.8%
	Winter	7,615	6,779	93.3%
	Spring	7,702	6,686	90.7%
1st Grade	Fall	9,501	8,139	93.0%
	Winter	9,482	8,278	92.4%
	Spring	9,480	7,960	89.6%
2nd Grade	Fall	9,347	7,821	84.8%
	Winter	9,327	8,172	88.3%
	Spring	9,300	7,855	84.8%
3rd Grade	Fall	9,482	7,980	85.9%
	Winter	9,484	8,310	87.6%
	Spring	9,443	7,749	83.1%

Participation rates decreased between fall and spring for 4th-5th grade students.

Grade Level	Term	Number of students eligible to participate in assessment	Number of students who were assessed	Participation rate (percentage of students who were assessed)
4-5 Overall	Fall	18,241	15,309	83.9%
	Winter	18,196	15,881	87.3%
	Spring	18,205	14,409	79.1%
4th Grade	Fall	9,169	7,725	84.9%
	Winter	9,132	7,965	86.7%
	Spring	9,130	7,236	79.1%
5 th Grade	Fall	9,072	7,584	84.6%
	Winter	9,064	7,916	86.8%
	Spring	9,075	7,173	77.8%

A higher percentage of Asian and white K-5 students took the spring aimswebPlus assessments when compared to Black/African American, Hispanic/Latinx, and Multi-racial/Other K-5 students.

Race/Ethnicity	Term	Number of students eligible to participate in assessment	Number of students who were assessed	Participation rate (percentage of students who were assessed)
Asian	Fall	4,854	4,371	93.8%
	Winter	4,844	4,484	94.2%
	Spring	4,795	4,310	91.4%
Black / African American	Fall	25,324	20,833	83.8%
	Winter	25,446	21,783	86.5%
	Spring	25,494	20,163	79.9%
Hispanic/Latinx	Fall	12,781	10,429	88.2%
	Winter	12,908	11,115	89.7%
	Spring	13,019	10,641	85.7%
Multi-racial/Other	Fall	2,126	1,849	88.4%
	Winter	2,119	1,881	89.5%
	Spring	2,121	1,752	83.2%
White	Fall	8,695	7,916	92.7%
	Winter	8,621	8,009	92.8%
	Spring	8,534	7,654	89.8%

The decline in participation rates among K-5 students was larger in the subset of students with an IEP.

Subgroup	Term	Number of students eligible to participate in assessment	Number of students who were assessed	Participation rate (percentage of students who were assessed)
Economically Disadvantaged	Fall	39,784	32,990	86.2%
	Winter	40,790	35,255	88.1%
	Spring	41,849	33,835	82.6%
ELs (English Learners)	Fall	7,314	6,124	90.1%
	Winter	7,395	6,590	91.6%
	Spring	7,402	6,299	88.1%
Has IEP (Individualized Education Plan*)	Fall	8,722	6,173	72.8%
	Winter	8,756	6,341	72.5%
	Spring	8,723	5,753	66.5%

* All students are required to participate except for students who are exempted based on their Individualized Education Plan (IEP). For the Special Education student group, participation rate includes all students, including those who are exempted, in the denominator.

K-3 Performance

The percentage of K-1st grade students testing in Tier 3 decreased in spring, whereas for 2nd-3rd grade students the percentage increased.

Grade Level	Term	Tier 1	Tier 2	Tier 3
Kindergarten	Fall	25.0%	24.3%	50.7%
	Winter	33.2%	20.0%	46.7%
	Spring	46.9%	11.5%	41.7%
1st Grade	Fall	22.0%	18.0%	60.1%
	Winter	28.7%	13.6%	57.7%
	Spring	42.1%	10.0%	47.9%
2nd Grade	Fall	51.3%	16.4%	32.2%
	Winter	38.2%	17.5%	44.3%
	Spring	42.5%	11.6%	45.9%
3rd Grade	Fall	34.4%	20.7%	44.9%
	Winter	31.1%	17.7%	51.2%
	Spring	30.1%	9.0%	60.9%

The percentage of K-3 students who are ELs or Economically Disadvantaged and scored at Tier 1 increased, whereas the percentage of Tier 1 scores decreased slightly for K-3 students with IEPs.

Subgroup	Term	Tier 1	Tier 2	Tier 3
ELs (English Learners)	Fall	25.4%	17.8%	56.8%
	Winter	26.2%	16.1%	57.7%
	Fall	34.8%	10.5%	54.6%
Economically Disadvantaged	Fall	28.0%	19.6%	52.5%
	Winter	26.5%	17.2%	56.3%
	Fall	33.7%	10.9%	55.4%
Has IEP (Individualized Education Plan*)	Fall	22.7%	13.8%	63.5%
	Winter	18.8%	12.4%	68.8%
	Fall	21.1%	7.9%	70.9%

* All students are required to participate except for students who are exempted based on their Individualized Education Plan (IEP). For the Special Education student group, participation rate includes all students, including those who are exempted, in the denominator.

The percentage of K-3 students who scored at Tier 1 increased for all racial/ethnic groups, and the percentage who scored at Tier 3 remained consistent or decreased slightly.

Race/Ethnicity	Term	Tier 1	Tier 2	Tier 3
Asian	Fall	52.0%	20.4%	27.6%
	Winter	56.6%	17.1%	26.3%
	Spring	67.4%	9.4%	23.2%
Black / African American	Fall	25.8%	19.7%	54.5%
	Winter	22.8%	17.2%	59.9%
	Spring	29.3%	10.8%	59.9%
Hispanic / Latinx	Fall	24.4%	18.4%	57.2%
	Winter	22.0%	17.5%	60.5%
	Spring	29.0%	11.1%	60.0%
Multi-racial / Other	Fall	42.3%	23.9%	33.8%
	Winter	46.6%	16.7%	36.8%
	Spring	53.5%	10.0%	36.6%
White	Fall	52.2%	19.5%	28.3%
	Winter	56.8%	15.9%	27.3%
	Spring	64.5%	9.5%	26.0%

4-5 Performance

5th grade students showed more improvement from fall to spring than did 4th grade students, based on change in percentage of students scoring at Tier 1 and Tier 3.

Grade Level	Term	Tier 1	Tier 2	Tier 3
4th Grade	Fall	33.8%	21.0%	45.2%
	Winter	33.4%	22.1%	44.5%
	Spring	34.9%	10.9%	54.2%
5th Grade	Fall	27.4%	20.2%	52.4%
	Winter	31.1%	20.2%	48.7%
	Spring	39.0%	14.6%	46.3%

The percentage of 4th-5th grade students who scored at Tier 1 and Tier 3 increased from fall to spring, especially among 4th-5th grade students who are ELs or Economically Disadvantaged.

Subgroup	Term	Tier 1	Tier 2	Tier 3
ELs (English Learners)	Fall	25.1%	22.9%	52.1%
	Winter	28.2%	23.4%	48.3%
	Spring	32.4%	14.1%	53.5%
Economically Disadvantaged	Fall	24.6%	21.2%	54.2%
	Winter	26.6%	21.9%	51.5%
	Spring	31.1%	13.5%	55.4%
Has IEP (Individualized Education Plan*)	Fall	11.1%	14.4%	74.5%
	Winter	12.2%	13.4%	74.4%
	Spring	13.1%	8.8%	78.1%

* All students are required to participate except for students who are exempted based on their Individualized Education Plan (IEP). For the Special Education student group, participation rate includes all students, including those who are exempted, in the denominator.

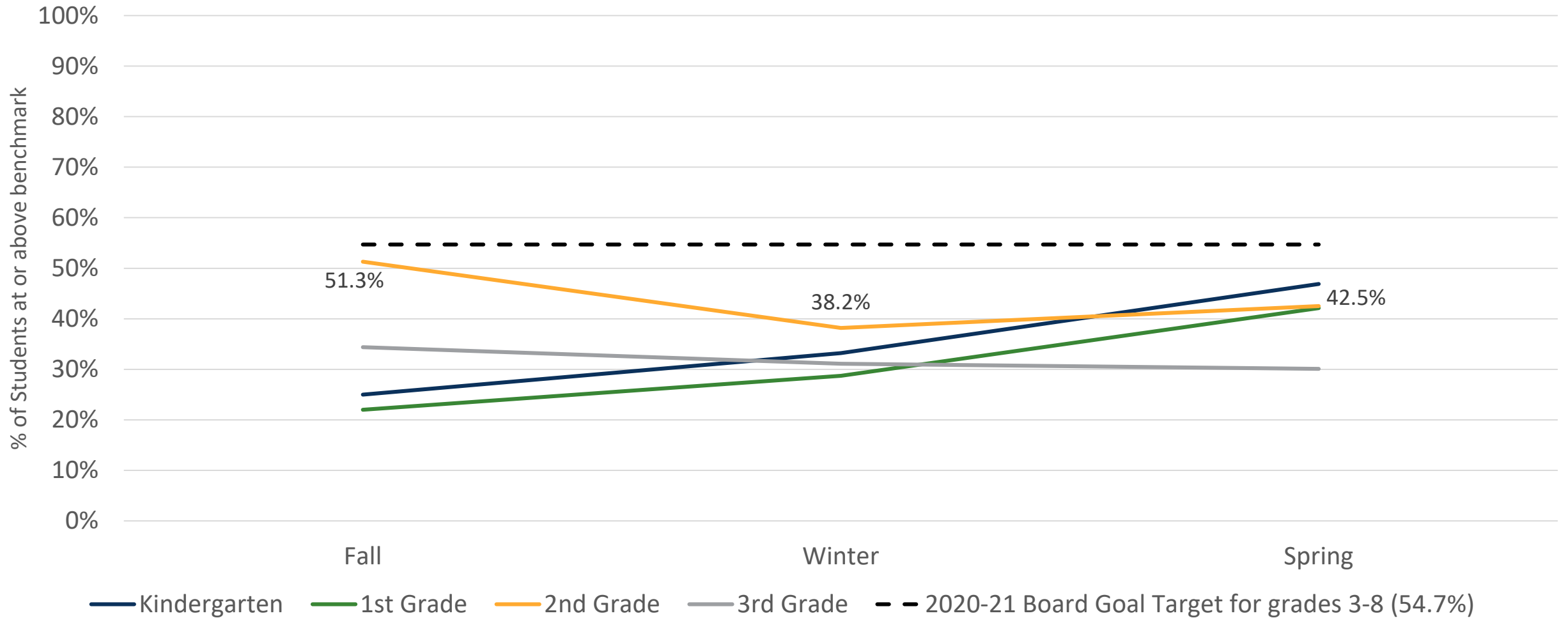
The percentage of 4th-5th grade students who scored at Tier 1 increased from fall to spring for all racial/ethnic students groups. The percentage of students scoring in Tier 3 increased, and the percentage of students scoring in Tier 2 decreased.

Race/Ethnicity	Term	Tier 1	Tier 2	Tier 3
Asian	Fall	62.2%	18.2%	19.6%
	Winter	63.2%	17.3%	19.5%
	Spring	69.0%	10.2%	20.8%
Black / African American	Fall	20.3%	21.8%	57.9%
	Winter	22.1%	22.2%	55.7%
	Spring	26.4%	13.8%	59.8%
Hispanic / Latinx	Fall	20.9%	22.1%	57.0%
	Winter	23.8%	22.6%	53.7%
	Spring	28.0%	13.2%	58.7%
Multi-racial / Other	Fall	37.5%	19.6%	42.8%
	Winter	37.8%	20.9%	41.3%
	Spring	45.4%	11.3%	43.4%
White	Fall	56.6%	16.5%	26.9%
	Winter	57.9%	17.9%	24.2%
	Spring	61.6%	10.8%	27.6%

Source: Qlik Aimsweb-Star App. Accessed 07/27/2021.

Tier 1 Performance, K-3 and 4-5

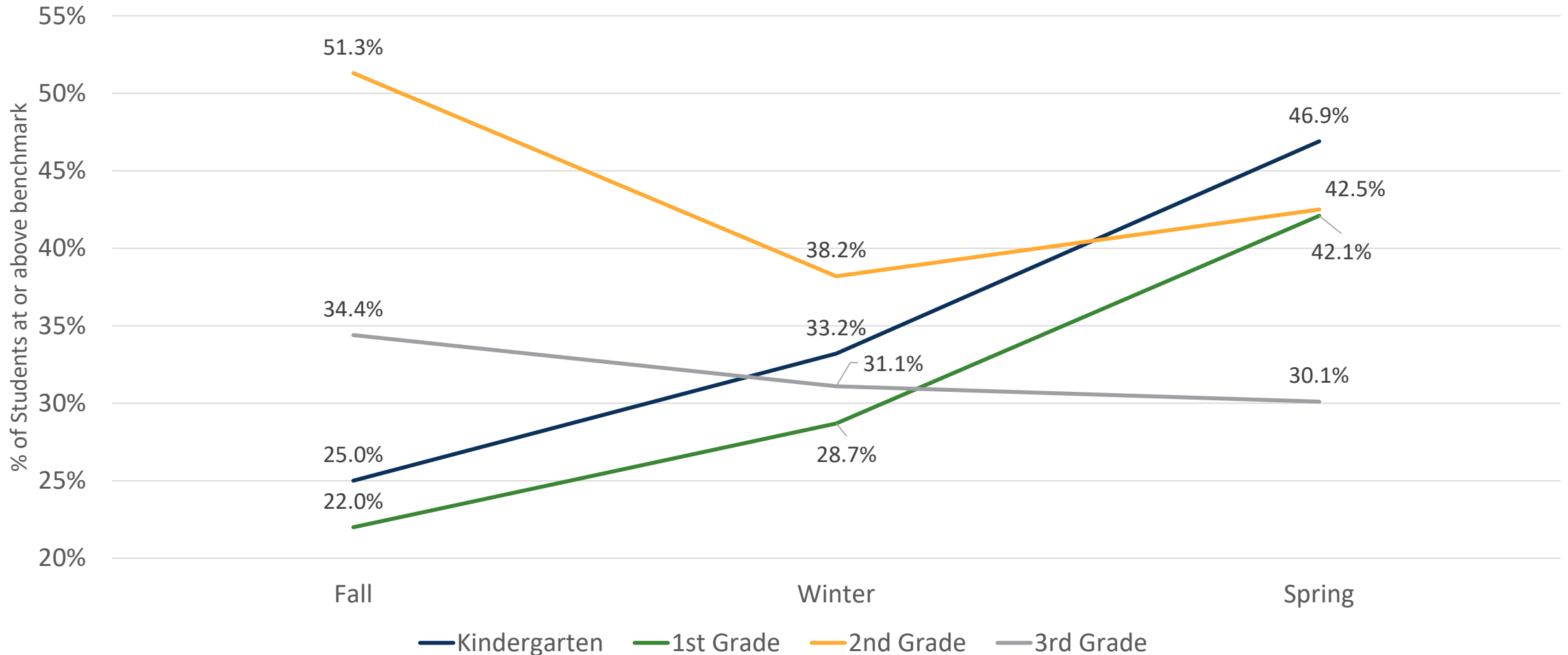
According to their spring assessments, Kindergarten students made the most progress toward achieving the Goal 3 leading indicator target.



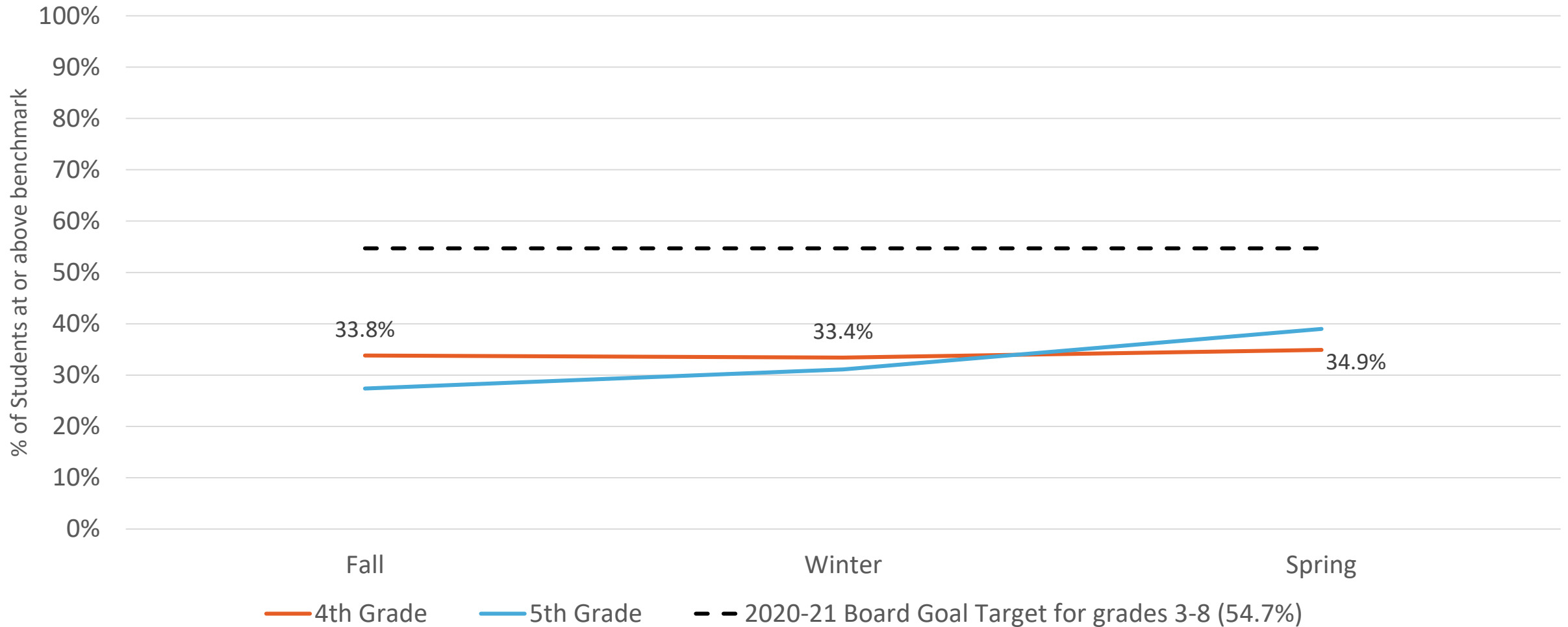
Data labels refer to 2nd grade. See next slide for detailed information about all groups. For more information about annual targets and the Board of Education's Goals and Guardrails, please visit philasd.org/era/goals-and-guardrails and click on the "Progress Monitoring Data".

Source: Qlik Aimsweb-Star App. Accessed 07/27/2021.

The percentage of Kindergarten and 1st grade students scoring in Tier 1 increased from fall to spring, while the percentage of 2nd and 3rd grade students scoring in Tier 1 decreased.



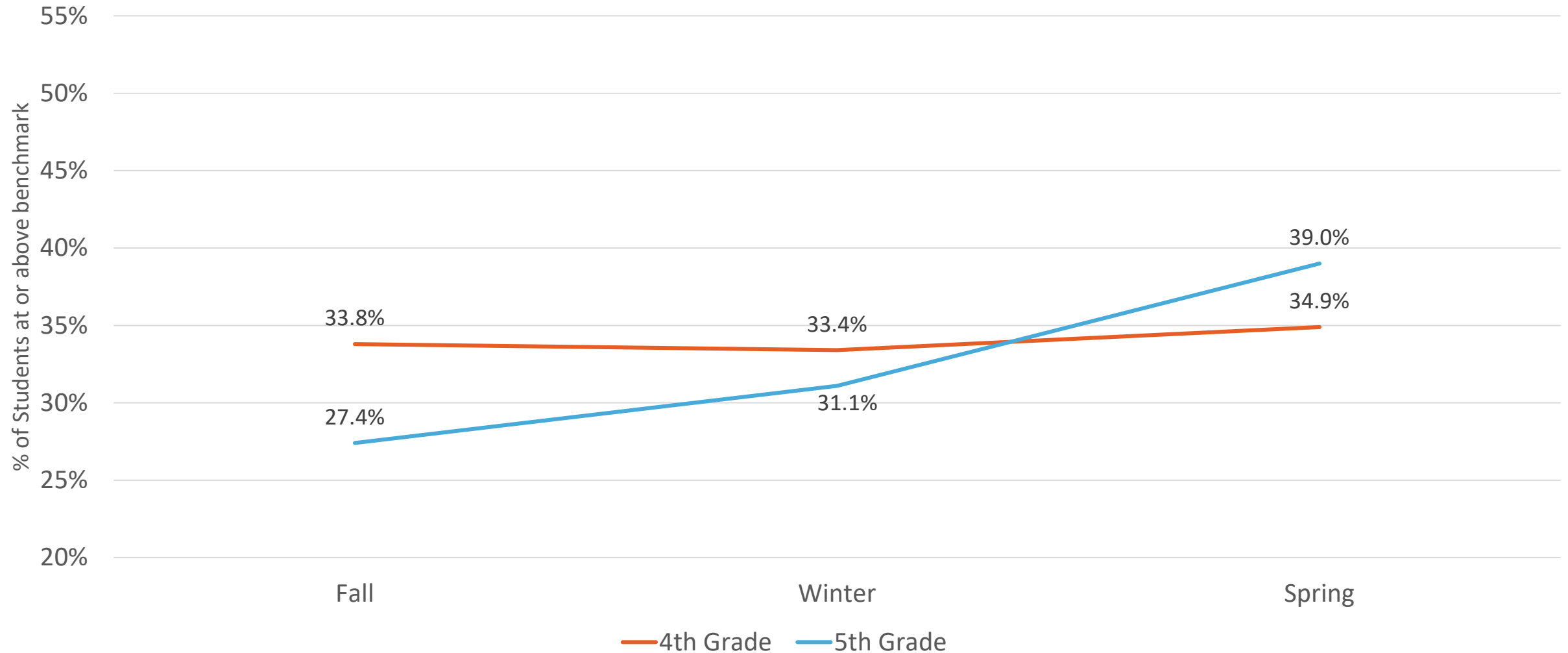
On average, 4th and 5th grade students did not meet the Goal 3 leading indicator targets on the spring assessment.



Data labels refer to 4th grade. See next slide for detailed information about all groups. For more information about annual targets and the Board of Education's Goals and Guardrails, please visit philasd.org/era/goals-and-guardrails and click on the "Progress Monitoring Data".

Source: Qlik Aimsweb-Star App. Accessed 07/27/2021.

Across fall, winter, and spring assessments, the percentage of 5th grade students scoring at Tier 1 increased far more than the percentage of 4th grade students scoring Tier 1.



Source: Qlik Aimsweb-Star App. Accessed 07/27/2021.

Average National Percentile Rank, K-3 and 4-5

How are students performing compared to the national sample?

Average NPR (National Percentile Rank) increased from fall to spring administrations for K-1st grade students, decreased for 2nd-4th grade students, and showed little change for 5th grade students.

Grade Level	Average National Percentile Rank		
	Fall	Winter	Spring
Kindergarten	28.9	32.4	34.6
1st Grade	24.6	26.7	31.4
2nd Grade	46.6	35.1	31.8
3rd Grade	34.1	29.9	23.2
4th Grade	34.9	34.7	26.6
5th Grade	30.6	32.8	31.2

Average NPR increased from fall to spring administrations for Asian K-3 students, decreased for Hispanic / Latinx and Black / African American students, and showed little change for white and Multi-racial / Other students.

Race / Ethnicity	Average National Percentile Rank		
	Fall	Winter	Spring
Asian	46.7	47.8	48.7
Black / African American	28.5	24.1	22.6
Hispanic / Latinx	26.6	23.0	21.8
Multi-racial / Other	41.6	40.7	41.0
White	47.4	47.9	47.0

Average NPR decreased from fall to spring administrations for K-3 ELs, students who were Economically Disadvantaged, and students with IEPs.

Subgroup	Average National Percentile Rank		
	Fall	Winter	Spring
ELs (English Learners)	27.2	25.3	25.1
Economically Disadvantaged	29.9	26.6	25.6
Has IEP (Individualized Education Plan*)	24.4	19.8	17.1

* All students are required to participate except for students who are exempted based on their Individualized Education Plan (IEP). For the Special Education student group, participation rate includes all students, including those who are exempted, in the denominator.

Average NPR decreased between fall and spring administrations for 4th-5th grade students in all racial/ethnic groups.

Race / Ethnicity	Average National Percentile Rank		
	Fall	Winter	Spring
Asian	55.4	56.5	53.7
Black / African American	25.3	26.4	21.1
Hispanic Latinx	25.6	27.0	21.8
Multi-racial / Other	37.3	37.8	33.4
White	50.7	51.1	45.7

Average NPR decreased from fall to spring administrations for 4th-5th grade ELs, students who were Economically Disadvantaged, and students with IEPs.

Subgroup	Average National Percentile Rank		
	Fall	Winter	Spring
ELs (English Learners)	27.3	28.8	23.5
Economically Disadvantaged	28.7	29.9	24.9
Has IEP (Individualized Education Plan*)	17.7	17.4	13.2

* All students are required to participate except for students who are exempted based on their Individualized Education Plan (IEP). For the Special Education student group, participation rate includes all students, including those who are exempted, in the denominator.

Summary – AimswebPlus Math, Grades K-5

- K-5 students' aimswebPlus math participation rates decreased between fall and spring.
- On average, the percentage of K-5 students scoring in Tier 1 increased for all racial/ethnic groups from fall to spring.
- No grade level in K-5 met their leading indicator targets (54.7% of students scoring at Tier 1). K-1 students made the most progress toward this goal.
- On average, K-5 students performed lower than their peers nationwide.