

### Maryland Integrated Science Assessment (MISA) Achievement SY2019 & SY2022

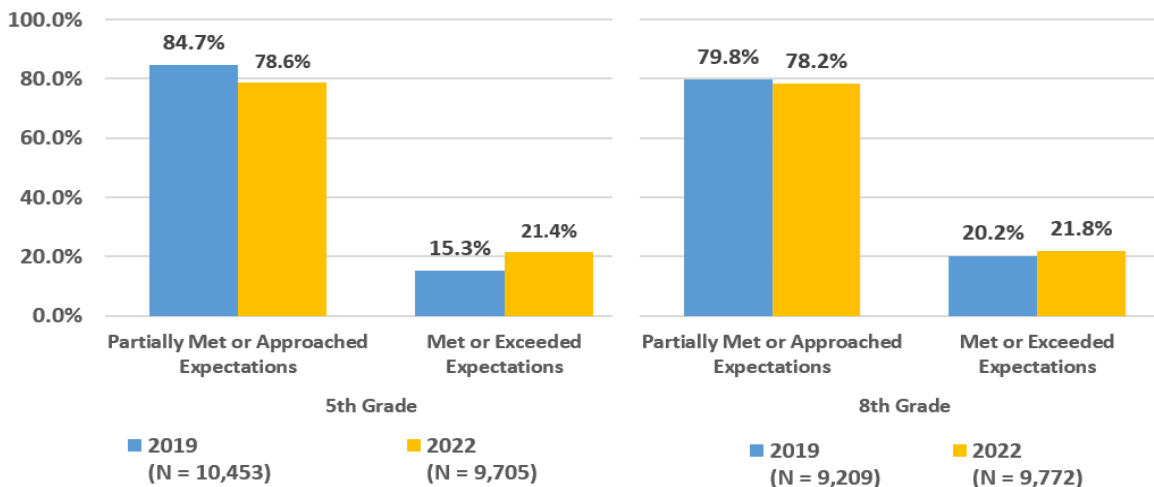
#### Key Findings

- From 2019 to 2022, the percentage of fifth and eighth grade students who met or exceeded expectations on the MISA increased by 40% and 8.4%, respectively. Still, more than three-fourths did not meet expectations in either year.
- When compared to the state, PGCPS had a lower percentage of fifth and eighth grade students in 2019 and 2022 meet or exceed expectations.
- Achievement increased among a 2019 cohort of fifth grade students when they took the test in eighth grade.

The Maryland Integrated Science Assessment (MISA) is a test designed to measure student progress on the Next Generation Science Standards ([Maryland State Department of Education, 2022](#)). Administered annually to fifth and eighth grade students, the assessment helps schools determine the degree to which students are prepared for further studies in the science content ([Maryland State Department of Education, 2019a](#)). In this data brief, findings of both the 2019 and 2022 MISA are discussed. Areas of interest include district performance levels, both independently and in conjunction with the state, a breakdown of district performance by subgroups, and a comparison of data from students with both fifth and eighth grade scores.

**District Performance Levels:** In 2019 and 2022, 15.3% and 21.4% of fifth grade students met or exceeded expectations on the MISA (Figure 1), which represents grade-level growth of 40% in the percentage of students meeting or exceeding expectations. During these same years, 20.2% and 21.8% of eighth grade students met or exceeded expectations, which equals a growth rate of 8.4%. Still, more than three-fourths of fifth and eighth grade students who took the MISA in 2019 and 2022 partially met or approached expectations.

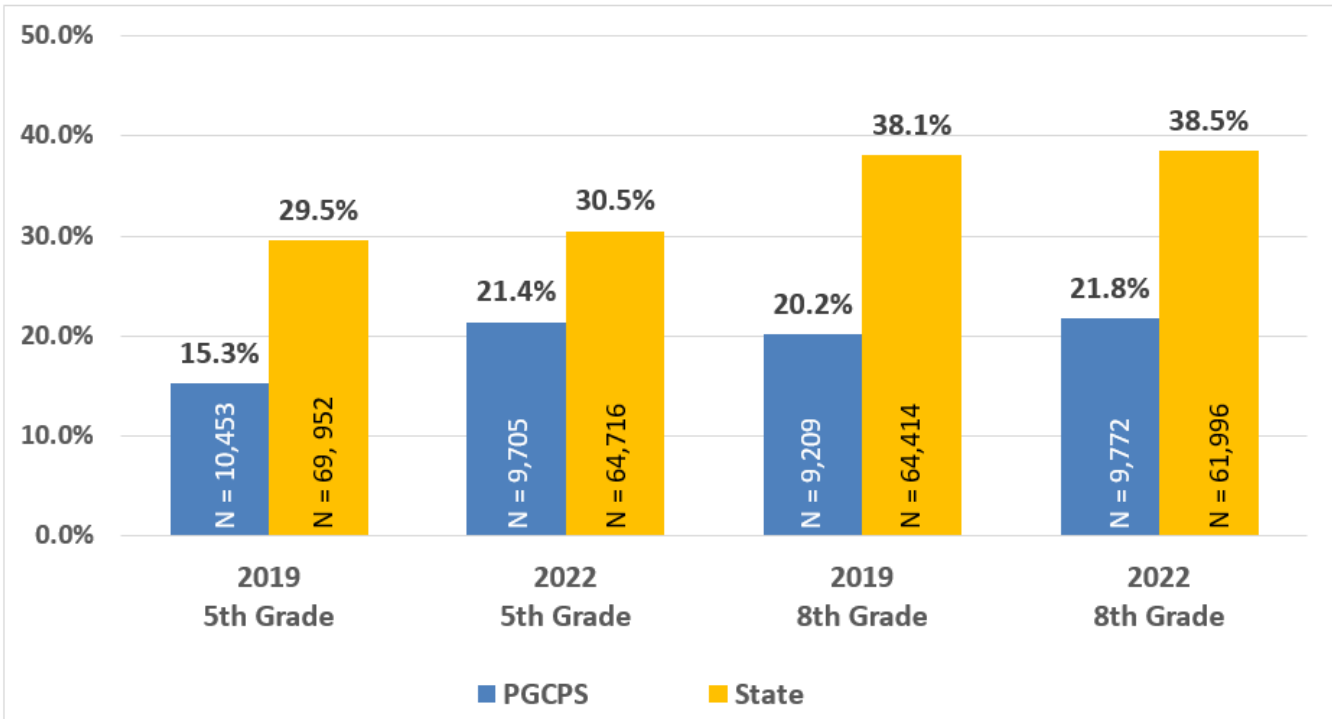
**Figure 1. MISA Results by Performance Level, SY2019 & SY2022**



**District and State Performance Levels:** When compared to the state, PGCPS had a lower percentage of fifth and eighth grade students in 2019 and 2022 who met or exceeded meet expectations on the MISA (Figure 2). During these years, 15.3% and 21.4% of fifth grade students in the district met or exceeded expectations. At the state level, however, 29.5% and 30.5% of fifth grade students met or exceeded expectations. Likewise, 20.2% and 21.8% of eighth grade students in the district met or exceeded expectations in 2019 and 2022 respectively. At the state level, 38.1% and 38.5% of eighth grade students demonstrated this level of performance.

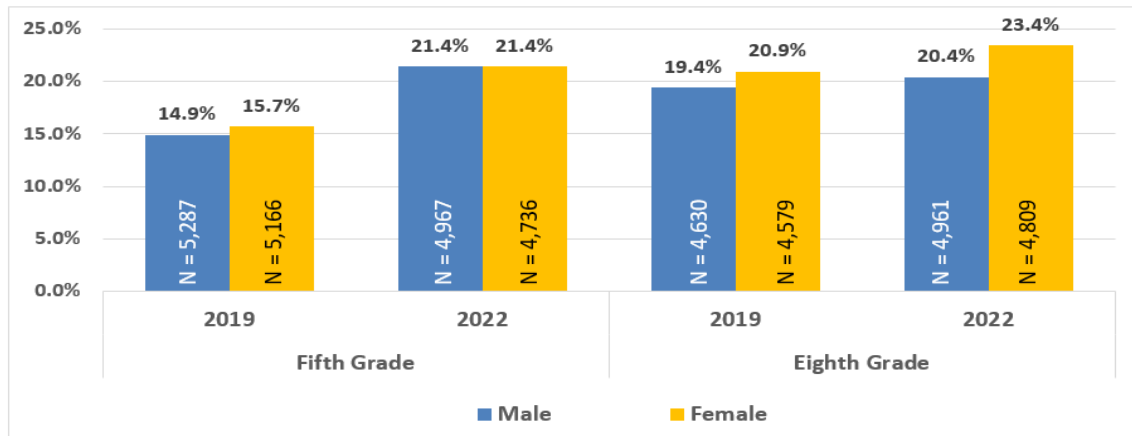
While achievement among PGCPS students lags in comparison to statewide levels, grade level achievement increased at a higher rate for PGCPS students compared with the state. Between 2019 and 2022, there was a 40% increase in the percentage of PGCPS fifth grade students who met or exceeded expectations on the MISA; among fifth grade students throughout the state, the increase was 3.3%. Similarly, the percentage of PGCPS eighth-graders who met or exceeded expectations increased by 8.4% between 2019 and 2022; across the state, the increase was 1.3%.

**Figure 2. Percentage of Students Who Met or Exceeded Expectations, PGCPS and Statewide**



**Performance Levels by Gender:** A higher percentage of male and female students in both fifth and eighth grade met or exceeded expectations in 2022 than in 2019 (Figure 3). In 2019, 14.9% of fifth grade males and 19.4% of eighth grade males met or exceeded expectations; in 2022, those percentages increased to 21.4% and 20.4%, respectively. Similarly, in 2019, 15.7% of fifth grade females and 20.9% of eighth grade females met or exceeded expectations. In 2022, 21.4% and 23.4% of fifth and eighth grade girls respectively met or exceeded expectations.

**Figure 3. Percentage of Students Who Met or Exceeded Expectations by Gender**



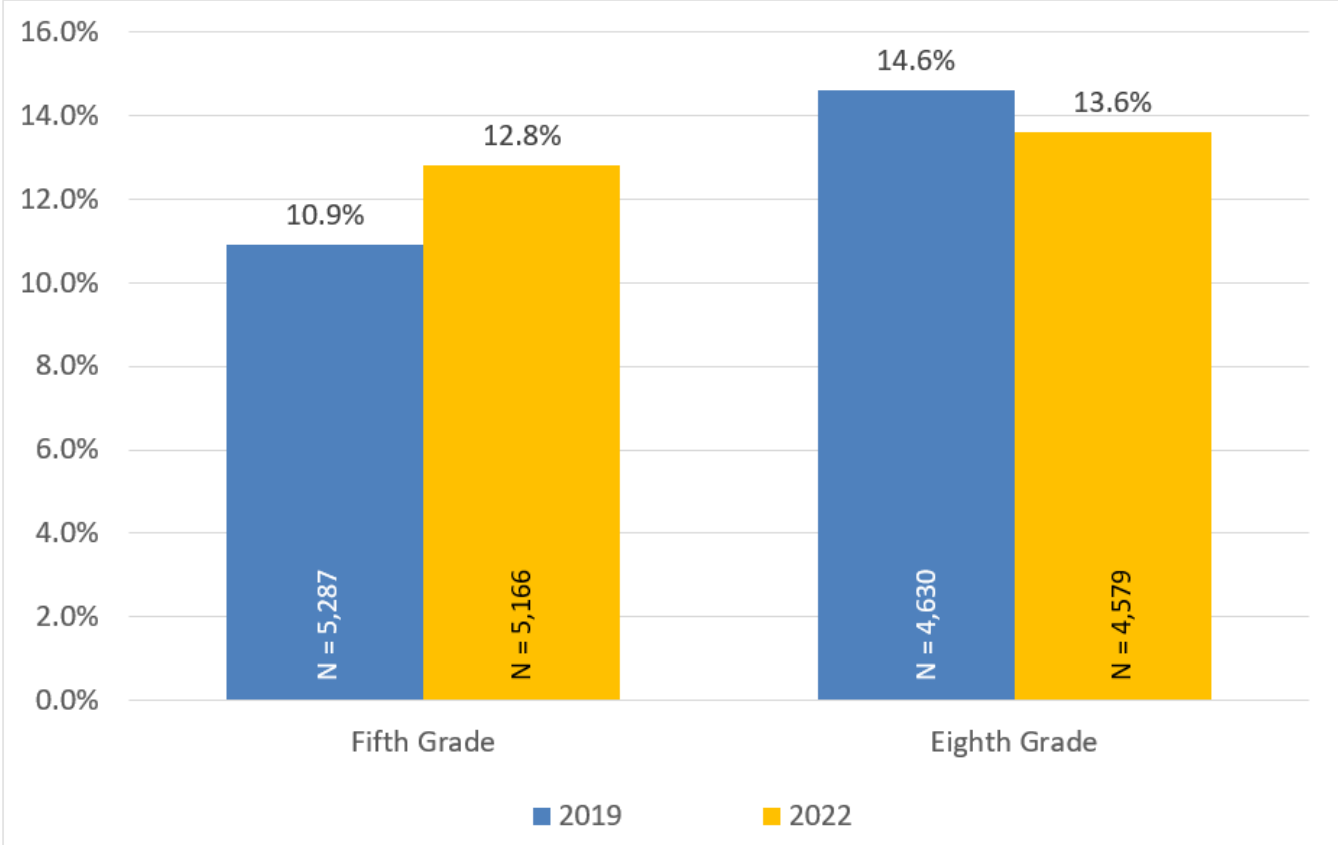
**Performance Levels by Race/Ethnicity:** Most racial/ethnic groups in both fifth and eighth grade had higher percentages of students meeting or exceeding expectations in 2022 than in 2019 (Table 1). These groups include students who are Asian, Black/African American, Hispanic/Latino, and White. Fifth grade students of two or more races had a higher percentage of students meeting or exceeding expectations in 2022 than in 2019. Conversely, eighth grade students within this group had a higher percentage of students meeting or exceeding expectations in 2019 than in 2022. In both fifth and eighth grade, students who are American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander had higher percentages of students meeting or exceeding expectations in 2019 than in 2022.

**Table 1. Percentage of Students Who Met or Exceeded Expectations by Race/Ethnicity**

Race/Ethnicity	Fifth Grade		Eighth Grade	
	2019	2022	2019	2022
Am. Indian or Alaska Native	17.2% N = 29	15.6% N = 32	44.4% N = 27	20.0% N = 25
Asian	34.2% N = 272	37.1% N = 256	45.7% N = 230	52.6% N = 232
Black or African American	15.9% N = 5,934	23.8% N = 5,166	20.1% N = 5,373	23.3% N = 5,404
Hispanic or Latino	10.2% N = 3,677	13.9% N = 3,749	14.6% N = 3,135	15.2% N = 3,677
Native Hawaiian or OPI	26.1% N = 23	18.8% N = 16	44.0% N = 25	31.8% N = 22
White	37.3% N = 394	50.7% N = 359	48.5% N = 324	49.1% N = 293
Two or More Races	24.2% N = 124	36.6% N = 123	35.8% N = 95	33.3% N = 114

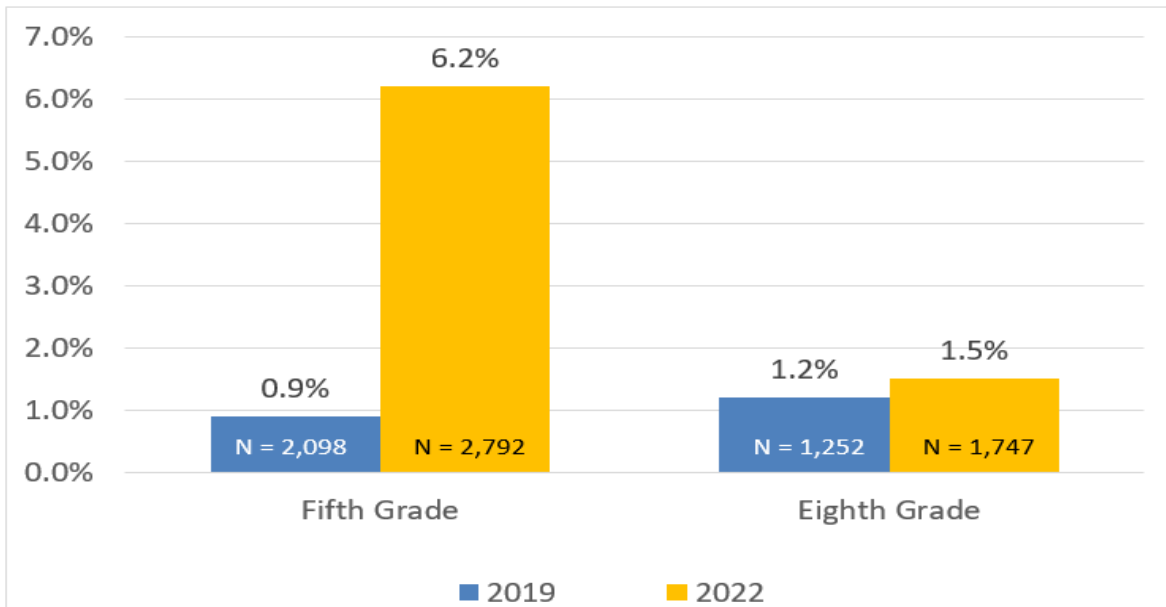
**Performance Levels by FaRMs Status:** In 2022, the percentage of fifth grade Free and Reduced Meals (FaRMs) students who met or exceeded expectations increased compared with 2019 levels (Figure 4). Specifically, in 2019, 10.9% of this group of students met or exceeded expectations on the MISA; in 2022, the percentage increased to 12.8%. Among eighth grade FaRMs students, the percentage who met or exceeded expectations declined between 2019 and 2022. In 2019, 14.6% of eighth grade FaRMs students met or exceeded expectations, but in SY2022, 13.6% did so.

**Figure 4.** Percentage of FaRMs Students Who Met or Exceeded Expectations



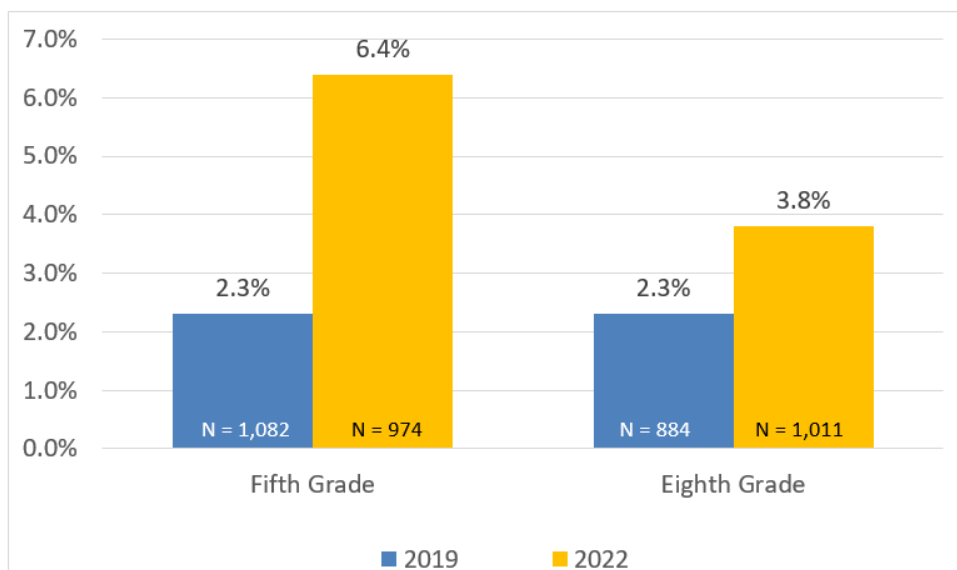
**Performance Levels by ELL Status:** A higher percentage of English language learners (ELLs) in both fifth and eighth grade met expectations in 2022 than in 2019 (Figure 5). In 2019, 0.9% and 1.2% of fifth and eighth grade ELLs met expectations on the MISA. In 2022, the percentages increased to 6.2% and 1.5% respectively.

**Figure 5. Percentage of ELLs Who Met or Exceeded Expectations**



**Performance Levels by SpEd Status:** A higher percentage of students receiving special education (SpEd) services in both fifth and eighth grade met or exceeded expectations in 2022 than in 2019 (Figure 6). In these two years respectively, 2.3% and 6.4% of fifth grade students receiving SpEd attained this level of performance on the MISA. Similarly, in 2019 and 2022, 2.3% and 3.8% of eighth grade students receiving SpEd services met or exceeded expectations.

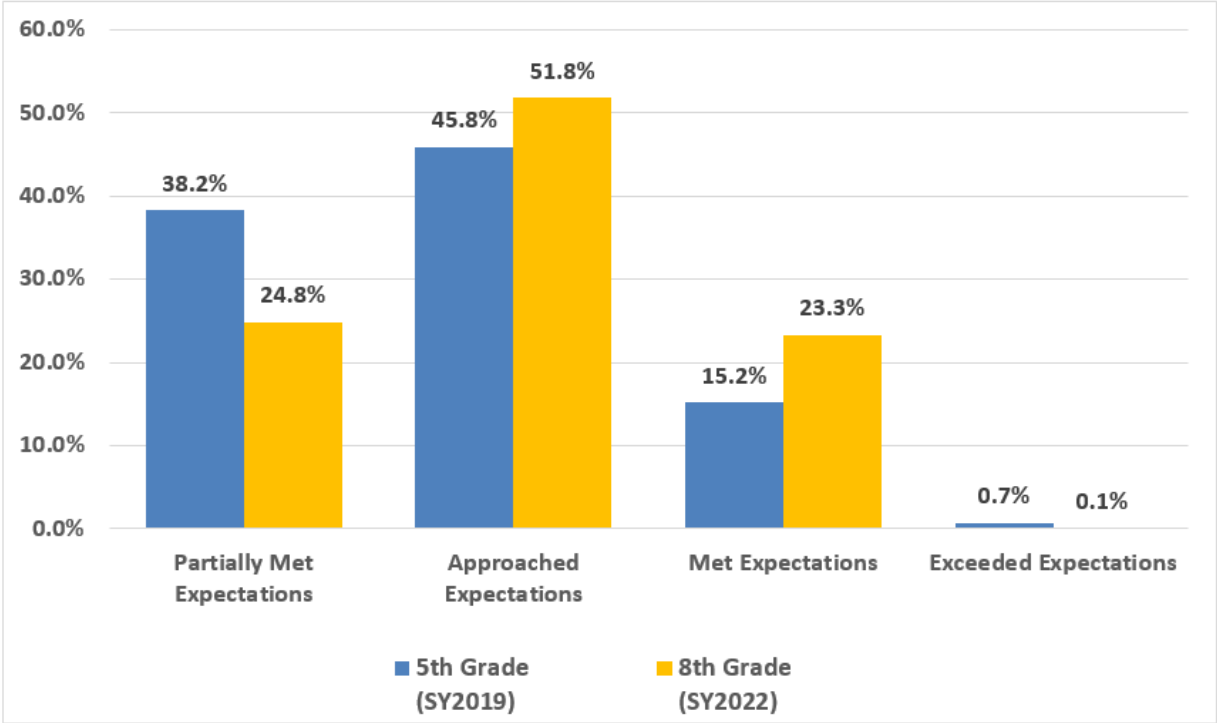
**Figure 6. Percentage of SpEd Students Who Met or Exceeded Expectations**



**Cohort Performance Levels:** A comparison of scores from a cohort of students ( $N = 8,090$ ) reveals that the percentage of students who met or exceeded expectations grew between fifth and eighth grade

(Figure 7). When the cohort was in fifth grade (i.e., SY2019), 84.0% partially met or approached expectations and 15.9% met or exceeded expectations. However, in eighth grade (i.e., SY2022), 76.6% of these students partially met or approached expectations and 23.4% of these students met or exceeded expectations.

**Figure 7.** Percentage of Cohort Students in Each Performance Level (N = 8,090)



**Cohort Performance Levels by Gender and Race/Ethnicity:** Cohort students by gender and racial/ethnic groups had higher performance levels in eighth grade than in fifth grade (Table 2). In 2019, 15.8% and 16.0% of fifth grade male and female cohort students respectively met or exceeded expectations. In 2022, 22.1% and 24.7% of male and female cohort students respectively demonstrated this level of performance. In addition, cohort students of each racial/ethnic group had higher percentages of students meeting or exceeding expectations in eighth grade than in fifth grade.

**Table 2. Percentage of Cohort Students Who Met or Exceeded Expectations by Gender and Race/Ethnicity**

Gender	# of Test-takers	% Met or Exceeded Expectations	
		2019	2022
Male	4,081	15.8%	22.1%
Female	4,009	16.0%	24.7%
<b>Race/Ethnicity</b>			
Am. Indian or Alaska Native	19	10.0%	15.8%
Asian	190	37.9%	57.4%
Black or African American	4,525	17.0%	24.5%
Hispanic or Latino	3,011	10.6%	17.0%
Native Hawaiian or OPI	16	22.2%	37.5%
White	228	39.6%	50.4%
Two or More Races	101	29.3%	33.7%

**Cohort Performance Levels by FaRMs, ELL, and SpEd Status:** Cohort students by FaRMs, ELL, and SpEd status had higher performance levels in eighth grade than in fifth grade (Table 3). In 2019, 11.5%, 1.0%, and 2.5% of cohort fifth grade students in these groups respectively met or exceeded expectations on the MISA. However, in 2022, 18.0% of students receiving FaRMs, 4.3% of ELLs, and 3.8% of students receiving SpEd services demonstrated this level of proficiency.

**Table 3. Percentages of Cohort Students Meeting or Exceeding Expectations by FaRMs, ELL, and SpEd Status**

	2019		2022	
	# of Test-takers	% Met or Exceeded Expectations	# of Test-takers	% Met or Exceeded Expectations
FaRMs	5,412	11.5%	4,987	18.0%
English Language Learners	1,671	1.0%	1,232	4.3%
Special Education	804	2.5%	845	3.8%

**Conclusion:** Although a majority of PGCPs fifth and eighth grade students did not meet expectations on the 2019 and 2022 MISA, the data indicate that a higher percentage of students met or exceeded expectations in 2022 than in 2019 (Figure 1). This finding was consistent with data from the state (Figure 2) and observed within district-level gender, racial/ethnic, FaRMs, ELL, and SpEd subgroups (Figures 3-6, Table 1). Higher performance level percentages were also observed within a cohort of district students who had scores in 2019 as fifth graders and in 2022 as eighth graders (Figure 7, Tables 2 and 3).

Higher performance level percentages are certainly something to celebrate. However, caution should be taken when interpreting these results. For example, these data cannot be used to say that the higher percentages were a result of student growth in ability. Throughout this data brief, comparisons were made between grade level students of one year to their grade level counterparts of another year, specifically fifth and eighth grade students of 2019 to fifth and eighth grade students of 2022. Consequently, growth cannot be concluded because data that were reported came from different students in many cases. In addition, while the performance levels of a cohort of students were compared at two different times, the standards on which these students were assessed in grades five and grade eight differ ([Maryland State Department of Education, 2019b](#)). As a result, growth from fifth to eighth grade cannot be concluded because the assessments of those particular grade levels measured different skills.

Another question that these data cannot be used to answer is the degree to which key factors influenced student performance on the MISA. Teachers are often linked to student achievement (RAND Corporation, 2019). Moreover, the COVID-19 pandemic has adversely impacted student growth and achievement (U.S. Department of Education, 2021). With these ideas in mind, one would naturally conclude that these factors influenced student outcomes on the MISA. The study conducted, however, did not explore and control for these variables; rather, the study's purpose was to discover how students performed on the MISA. Consequently, data from this brief cannot be used to attribute student performance to specific factors.

In sum, PGCPs did have higher percentages of students meeting or exceeding expectations on the 2022 MISA than on the 2019. More research is needed, though, to determine the degree to which students grew and the degree to which factors related to student performance impacted student outcomes.



# Prince George's County Public Schools

## Definitions

The following definitions come directly from the 2019 *Maryland Integrated Science Assessment: Score Report Interpretation Guide*. It is important to note that the phrase “partially met expectations,” instead of “did not yet meet expectations,” is used for the 2022 MISA. However, the score report guide for this year is not currently available.

- **Met or Exceeded Expectations**: Students in this category are likely academically well prepared to engage successfully in further studies in the dimension of science content area and may need instructional enrichment.
- **Approached Expectations**: Students in this category likely need academic support to engage successfully in further studies in the dimension of science content area.
- **Did Not Yet Meet Expectations**: Students in this category are likely not academically well prepared to engage successfully in further studies in the dimension of science content area. Such students likely need instructional interventions to increase achievement in the dimension of science content area.

## References

Maryland State Department of Education. (2019a). *Maryland integrated science assessment: Score report interpretation guide*. Retrieved from

[https://support.mdassessments.com/resources/reporting/MISA\\_Score\\_Report\\_InterpGuide.pdf](https://support.mdassessments.com/resources/reporting/MISA_Score_Report_InterpGuide.pdf)

Maryland State Department of Education. (2019b). *Technical manual for the Maryland integrated science assessment: Grades 5 and 8*. Retrieved from

[https://marylandpublicschools.org/about/Documents/DAAIT/Assessment/MISA/MISATEchnicalReport\\_5\\_8\\_20182019.pdf](https://marylandpublicschools.org/about/Documents/DAAIT/Assessment/MISA/MISATEchnicalReport_5_8_20182019.pdf)

Maryland State Department of Education. (2022). *Maryland integrated science assessments (MISA)*.

Retrieved from <https://marylandpublicschools.org/about/Pages/DAAIT/Assessment/MISA/index.aspx>

RAND Corporation. (2019). *Teachers matter: Understanding teachers' impact on student achievement*. Retrieved from

[https://www.rand.org/content/dam/rand/pubs/research\\_reports/RR4300/RR4312/RAND\\_RR4312.pdf](https://www.rand.org/content/dam/rand/pubs/research_reports/RR4300/RR4312/RAND_RR4312.pdf)

U.S. Department of Education. (2021). *Education in a pandemic: The disparate impacts of COVID-19 on America's students*. Retrieved from

<https://www2.ed.gov/about/offices/list/ocr/docs/20210608-impacts-of-covid19.pdf>