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Stuck at Red: Persistent Early Literacy Gaps and Later State Test Performance

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Fall 2025

For 4 years, the Massachusetts Department of Elementary and Secondary Education (DESE) has collected and analyzed early literacy screening assessment data from schools and districts that participated in targeted state grants. In 2023/24, the 1st year that screening was required for all kindergarten through grade 3 students statewide, data were collected for nearly half the state's population of kindergarten through grade 3 students.

Using data from 2023/24 and prior school years, this brief examines student performance on screening assessments across years and the relationship between performance on the screening assessments and performance on subsequent state tests. Specifically, this brief addresses two questions:

1. How do students identified as at risk on screening assessments perform on screening assessments 1 and 2 years later? Do students identified as at risk stay at risk?

2. How do students identified as at risk on screening assessments perform on the Massachusetts Comprehensive Assessment System (MCAS) 1 and 2 years later?

Screening Assessment Performance 1 and 2 Years After Being Identified as Significantly Below Benchmark

As the screening data sample has increased, the ability to track students across years has also increased. Over 37,000 students had spring/end-of-year (EOY) scores across 2 school years, and over 4,000 students had EOY scores across 3 school years. Tables 1 and 2 show the numbers of students in the screening data who moved up one grade (e.g., grade 1 to grade 2) and two grades (e.g., grade 1 to grade 3), respectively, after their first literacy screening.

Table 1. Number of Students With EOY Scores 1 Year After Initial Screening

Students with scores 1 year later	Number
Grade K to grade 1	13,568
Grade 1 to grade 2	9,785
Grade 2 to grade 3	13,719
Total	37,072

Note. Students with scores 1 year later include students with EOY scores across 2 years, in 2021/22 and 2022/23 and in 2022/23 and 2023/24. *Source*: Early literacy screening assessment data.

Table 2. Number of Students With EOY Scores 2 Years After Initial Screening

Students with scores 2 years later	Number
Grade K to grade 2	2,263
Grade 1 to grade 3	2,009
Total	4,272

Note. Students with scores 2 years later include students with EOY scores across 3 years, in 2021/22, 2022/23, and 2023/24. *Source*: Early literacy screening assessment data.

> Most students who were identified as significantly below benchmark at EOY were still significantly below benchmark 1 and 2 years later, but there were differences by student group and grade level.

Two thirds of students (67%) who were identified as at significant risk at EOY in 1 year were still at significant risk the following year, and 84 percent of those students were still at significant risk another year later (Figure 1). In total, about 65 percent of students identified as at significant risk at the end of a school year were still at significant risk 2 years

later. Students identified as at or above benchmark were largely still at or above benchmark 1 and 2 years later (90% after 1 year and 93% of those students after 2 years). Of students in between—those who performed below benchmark but not significantly below—about 50 percent were at benchmark 1 year later and, in total, just under 50 percent were at benchmark 2 years later.

Figure 1. Most Students Significantly Below Benchmark Were Still Significantly Below Benchmark 1 and 2 Years After Initial Identification
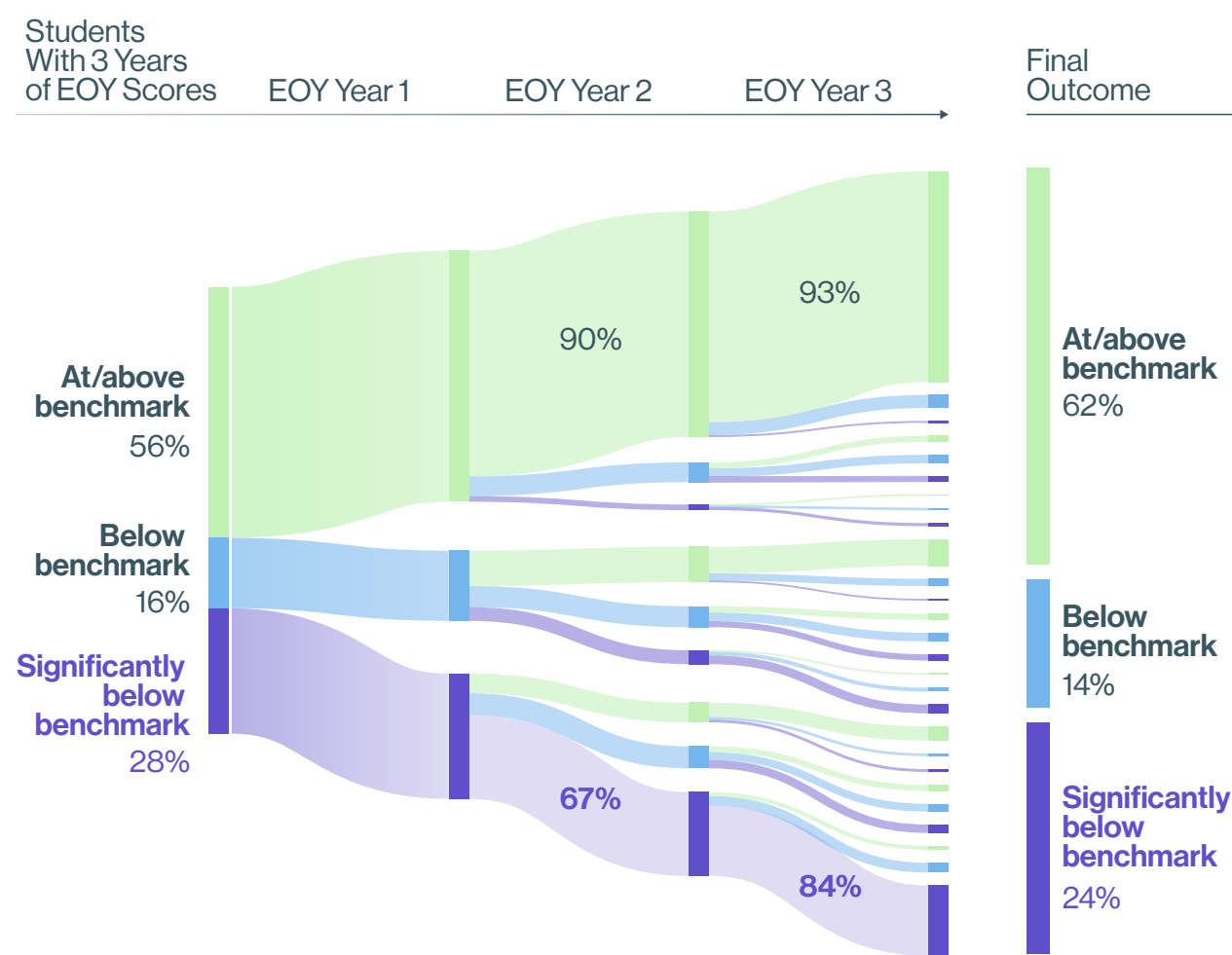

Note. Students with EOY scores in 2021/22, 2022/23, and 2023/24. See **Figure 1 in the appendix** for a full description of this figure. *Source*: Early literacy screening assessment data.

Also, as in previous analyses, more students in later grades remained significantly below benchmark across years than did students in earlier grades. For example, 64 perc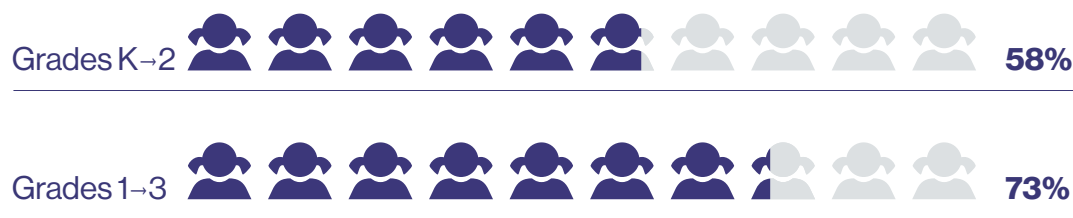ent of students who ended kindergarten significantly below benchmark were still significantly below benchmark at the end of grade 1 compared with 80 percent of grade 1 students who moved to grade 2 and 78 percent of grade 2 students who moved to grade 3 (Figure 2).[1]

Figure 2. More Students in Grades 1 and 2 Were Still Significantly Below Benchmark 1 and 2 Years After Initial Identification Than Students in Grade K

1 Year Later

Grades K→1   64%

Grades 1→2   80%

Grades 2→3   78%

2 Years Later

Grades K→2   58%

Grades 1→3   73%
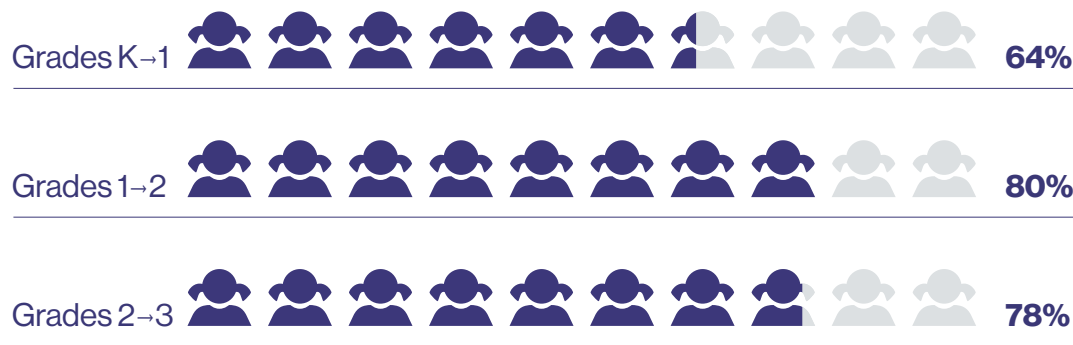
Note. Figure 2 shows EOY to EOY performance across grades. For example, 64 percent of students significantly below benchmark at EOY in kindergarten were still significantly below benchmark at EOY of grade 1, and 58 percent were still significantly below benchmark at EOY of grade 2. *Source*: Early literacy screening assessment data.

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[1] Using the 25th percentile and below to identify students as at significant risk shows a similar pattern: Sixty-two percent of grade K students remained significantly below benchmark at the next grade level compared with 70 percent of grade 1 students and 73 percent of grade 2 students.

MCAS Performance 1 and 2 Years After Being Identified as Significantly Below Benchmark

Students begin taking required state assessments in English language arts in grade 3. Prior analysis shows that students who are identified as below or significantly below benchmark on screening assessments in grades 2 and 3 are unlikely to meet expectations on MCAS. Indeed, even students who meet screening assessment benchmarks may not meet MCAS expectations, likely due to differences between the purpose of and skills measured by screening assessments compared with those of MCAS. Screening assessments focus on foundational reading and language skills, with the goal of identifying students who need additional support to gain these skills, whereas MCAS assesses a broader range of grade-level standards in reading, writing, and language. Thus, meeting benchmarks on screening assessments may be considered necessary but not sufficient for meeting expectations on MCAS. However, identifying and supporting students early *can* help create the conditions for improved MCAS performance.

Using data from 2023/24 and prior years, we examined grades 3 and 4 MCAS performance for two groups of students, grade 5 performance for one group, and MCAS performance both 1 and 2 years after students took screening assessments. Just under 6,000 students had either grade 3 or 4 MCAS scores 1 year after being identified as at significant risk on an EOY screening assessment, and about the same number had MCAS scores 2 years later.

Eleven percent of students identified in grade 1 met expectations by grade 3, compared with 10 percent of those identified in grade 2 and tested in grade 4 and only 6 percent of those identified in grade 3 and tested in grade 5 (Figure 3). Similarly, nearly twice as many students who were identified as significantly below benchmark at grade 2 in either 2021/22 or 2022/23 met expectations as grade 3 students (about 10%) than did students identified at grade 3 as grade 4 students (5%).

> Most students who were identified as significantly below benchmark on screening assessments at grades 1, 2, or 3 did not meet expectations on MCAS 1 or 2 years later. But more students who were identified as significantly below benchmark in earlier grade levels met MCAS expectations than those identified later, again suggesting the importance of early intervention.

Figure 3. MCAS Meeting or Exceeding Rates Are Higher for Students Identified as At Significant Risk in Earlier Grades, Though Low Overall

Percentage of Students Meeting or Exceeding Expectations on MCAS **2 Years** After Significant Risk Identification at EOY

11%	10%	6%
Grades 1→3	Grades 2→4	Grades 3→5
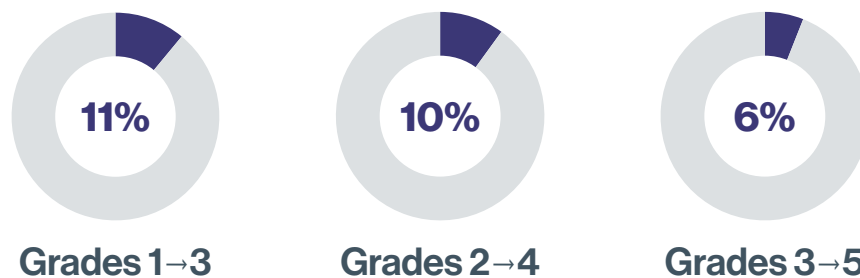
Percentage of Students Meeting or Exceeding Expectations on MCAS **1 Year** After Significant Risk Identification at EOY

10%	5%
Grades 2→3	Grades 3→4
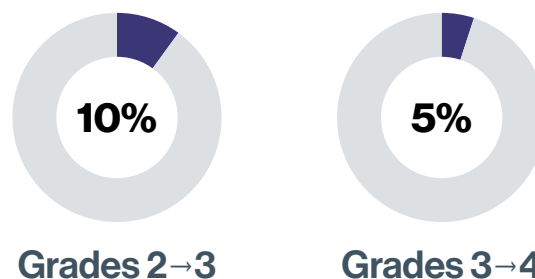
Note. Using the 25th percentile as an indicator of risk, percentages meeting or exceeding expectations on MCAS are 7 percent (grade 1 to 3), 6 percent (grade 2 to 4), and 2 percent (grade 3 to 5). *Source*: Early literacy screening assessment data and state-provided MCAS data.

Pathways to Grade 3 MCAS After Risk Identification

Because grade 3 is the first time students around the state all take the same assessment, MCAS is an important indicator of statewide achievement. The previous section examined performance from EOY to performance on MCAS; this section reports on data for a group of students who were identified as at risk early (fall/beginning of year [BOY] of grade 1) in order to more deeply examine patterns of performance leading up to grade 3. Starting with students at the beginning of the year in grade 1 (because we can reliably track students only for 2 years with current data), four categories of students were identified based

on whether and when they achieved screening benchmarks:

- students who never met benchmark prior to grade 3

- students who first met benchmark at EOY of grade 1

- students who first met benchmark at BOY of grade 2

- students who first met benchmark at EOY of grade 2

The goal of using these categories was to assess how MCAS performance differs for students who attain benchmark and those who do not. Not all students who met benchmark at a given time period stayed at benchmark. Some students met benchmark but then were identified as at risk or at significant risk in a subsequent time period. Nonetheless, the students did get on track at least temporarily prior to MCAS and did so at different times.

As shown in Figure 4, the most common pathways for students identified as below benchmark at BOY in grade 1 were to remain at risk through the remainder of
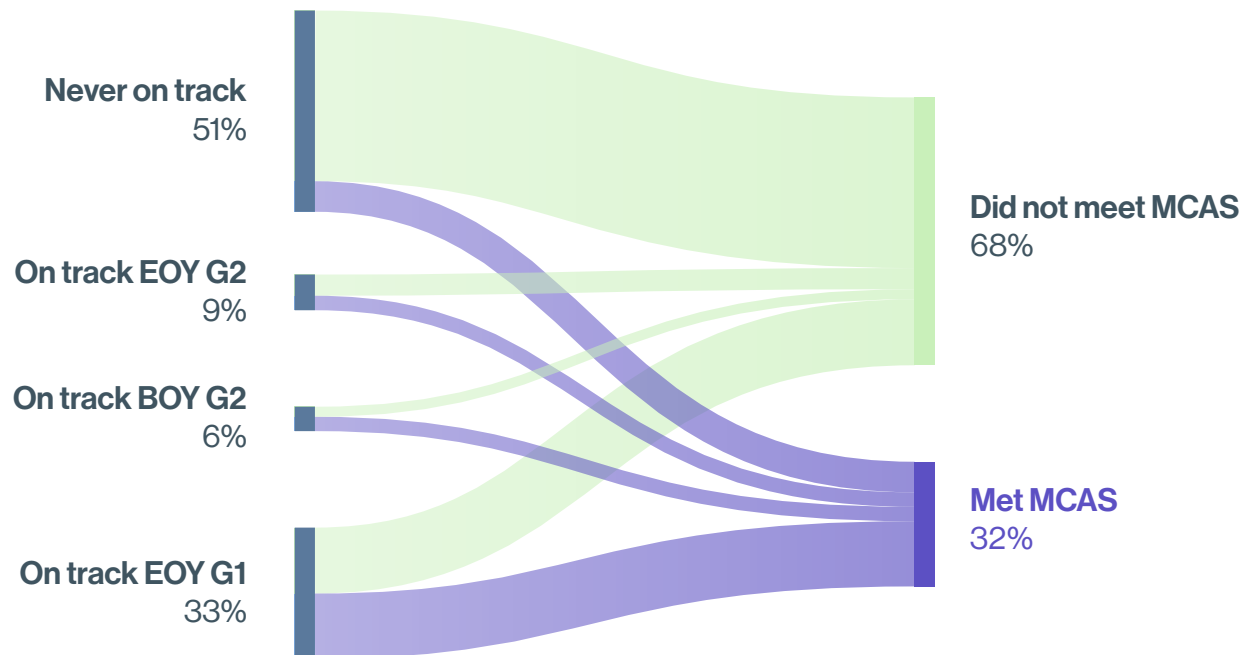
grades 1 and 2 ("never on track") or to get on track by the end of grade 1 ("on track EOY G1"). In total, over 80 percent of students followed these patterns. Only a small number of students got on track at any time in grade 2 before MCAS. Among students who met benchmark, those who remained at benchmark were more likely to meet expectations on MCAS.

Two thirds (67%) of students who met screening assessment benchmarks at BOY of grade 1 met or exceeded expectations on MCAS. Of students who were below or significantly below benchmark at BOY of grade 1, 50 percent who met benchmark by EOY of grade 1 met or exceeded expectations on MCAS. Students who met benchmark later were less likely to meet MCAS expectations, and only 15 percent of students who never met benchmark in grades 1 or 2 met MCAS expectations.

> Meeting screening benchmarks earlier is associated with greater rates of meeting or exceeding expectations on MCAS.

Figure 4. Students Who Got on Track Earlier Based on Screening Assessment Data Had Higher MCAS Proficiency Rates Than Did Students Who Never Met Screener Benchmarks

Never on track 51%
On track EOY G2 9%
On track BOY G2 6%
On track EOY G1 33%
Did not meet MCAS 68%
Met MCAS 32%

Note. Includes students identified as at significant risk at BOY grade 1. *Source*: Early literacy screening assessment data and state-provided MCAS data.

Implications for Policy and Practice

These results indicate that students who finish a school year below benchmark are likely to continue below benchmark in subsequent years. This risk increases as students move from kindergarten through grade 3, highlighting the need for early, targeted interventions to disrupt these trajectories. The results also indicate that the current supports, interventions, and opportunities provided to students who perform below benchmark have not yet fully achieved desired improvements in student outcomes and progress after 1 or 2 years.

Along with other data, these findings once again point to the importance and benefit of helping students meet benchmark as early as possible. However, it is important to note that differences between screening assessments and MCAS mean that performance pathways to MCAS may not directly align with screening assessment benchmark performance.

Appendix. Description of Figure 1

This Sankey diagram tracks the academic progression of students who have 3 years of EOY assessment scores, showing how performance levels change across the academic years and into final outcomes.

Initial distribution (EOY year 1)

- At/above benchmark: 56% of students
- Below benchmark: 16% of students
- Significantly below benchmark: 28% of students

From EOY year 1 to EOY year 2

- Of students at/above benchmark in year 1, 90% maintained that performance level in year 2
- Of students significantly below benchmark in year 1, 67% remained at that performance level in Year 2

From EOY year 2 to EOY year 3

- Of students who remained at/above benchmark from year 1 to year 2, 93% maintained that performance level in year 3
- Of students who remained significantly below benchmark from year 1 to year 2, 84% maintained that performance level in year 3

Final outcomes

- At/above benchmark: 62% of students
- Below benchmark: 14% of students
- Significantly below benchmark: 24% of students

Note. See [Figure 1](#).

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