**Star Data:** *An Updated Report on Student Assessment Results*
March 1, 2023
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## Summary

Beginning in 2021, Shrewsbury looked to the results of universal academic screening to help us assess the impact of the pandemic. The purchase of the Star Reading and Math assessments enabled educators and district leaders to measure student performance against state benchmarks and national norms. What's more, this platform allowed educators across the district to monitor student performance over the course of the year. Currently we see that reading scores have been more impacted than math scores. More to the point, achievement scores to date suggest that most readers in Grades K-3 are on track to meet grade level goals. For this reason, using data to support students in Grades 4 and above will be a priority moving forward.
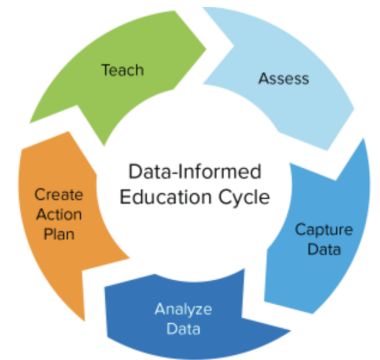
The use of the Star assessments continues to empower educators and teacher teams to identify, support and track academic outcomes for our students, all in one place. As a result, curriculum leaders can see firsthand the impact of strong instruction and intervention efforts. Taken together, these two aspects of the Star assessment system make implementing student supports within and across grade spans more effective and equitable.

## I. Introduction

How has student academic progress been impacted by the pandemic? There are different answers to this question. We now know that, nationwide, most students did fall behind academically. The impact of lost instructional time, together with disrupted schedules and mental health challenges that amplified the impact for some students. In many districts in Massachusetts and in Shrewsbury, state testing results show that student scores in Math have recovered more quickly than English Language Arts. Although it's hard to compare student cohorts, it's clear that students that experienced the loss of in-person instructional time during their foundational years will take longer to recover. Additionally, there's universal agreement that the pandemic exacerbated achievement opportunity gaps for children that were struggling to meet grade level benchmarks.

This report will depict the most recent Star testing results. This information, taken together with other measures of student performance, give us a helpful lens to look through as we try to assess the current state of academic recovery in Shrewsbury.

## II. Star Data

On the Star platform, screening results are generally reported by percentile rank, which compares students at a given grade level to all other students that took the test during the same administration window. In 2021

we assessed students during three screening windows, with the option of administering the test more frequently. This year we plan to administer screening assessments four times.

| Trimester 1 | Trimester 2 | Trimester 3 | Final Assessment |
|---|---|---|---|
| September 2022 | December 2022 | April 2023 | June 2023 |

Until children demonstrate the ability to read independently in English, they take the Star Early Literacy Assessment. Given that most students in grades K-8 were independent readers in September, the vast majority of children in Shrewsbury were tested in both Star Reading and Star Math from the beginning. However, it's helpful to have a monitoring tool that's well-matched to the needs of Kindergarteners, English learner beginners, and students reading significantly below grade level benchmarks. The Early Literacy test includes both reading and math items together.

Early Literacy Assessment Results
This assessment is designed for students that are not yet able to read independently. This year 16% of students in Grades K-5 took the Early Literacy test in lieu of the Star Reading assessment, including three students who took the test in Spanish. Comparing scores from September to December depicts the transition students make as they grow from emergent to early readers. Students that experience significant challenges with reading may continue to take the Early Literacy assessment beyond first grade. In this way students can access the accommodations they may need to be successful with the Math portion of the assessment.

*Star Early Literacy Assessment Results: September, 2022*

| Grade | # Students Tested | At/ Above Benchmark  At/Above 40 Percentile Rank | On Watch  25-39 Percentile Rank | Intervention  10-24 Percentile Rank | Urgent Intervention  Below 10 Percentile Rank |
|---|---|---|---|---|---|
| K | 341 | 219 (64%) | 33 (10%) | 47 (14%) | 42 (12%) |
| 1 | 326 | 227 (70%) | 36 (11%) | 43 (13%) | 20 (6%) |
| 2 | 44 | 13 (30%) | 5 (11%) | 10 (23%) | 16 (36%) |
| 3 | 13 | 0% | 0% | 3 (23%) | 10 (77%) |
| Total | 724 | | | | |

*Star Early Literacy Assessment Results: December, 2022*

| Grade | # Students Tested | At/ Above Benchmark<br><br>At/Above 40 Percentile Rank | On Watch<br><br>25-39 Percentile Rank | Intervention<br><br>10-24 Percentile Rank | Urgent Intervention<br><br>Below 10 Percentile Rank |
|-------|-------------------|-------------------------------------------------------|---------------------------------------|-------------------------------------------|-----------------------------------------------------|
| K     | 348               | 279 (80%)                                             | 32 (9%)                               | 23 (7%)                                   | 14 (4%)                                             |
| 1     | 210               | 151 (73%)                                             | 18 (9%)                               | 28 (13%)                                  | 11 (5%)                                             |
| 2     | 24                | 3 (13%)                                              | 2 (8%)                                | 3 (13%)                                   | 16 (67%)                                           |
| 3     | 13                | 0%                                                   | 0%                                    | 3 (25%)                                   | 9 (75%)                                            |
| Total | 595               |                                                      |                                       |                                           |                                                     |

As shown above, most children in Kindergarten and first grade are progressing as expected.

Star Reading Results

74% of students in Grades K-8 were screened using the Star Reading assessment, including five students that took a Spanish version of the test. (This percentage is lower than the screening percentage for Math because emergent readers take the Early Literacy test instead.) The table below provides a summary of this year's screening results by percentile rank, which compares students in the same grade who took the test in the same time period. Note that percentages listed are 'percentages of students who took STAR', and not a percentage of the entire grade as there are students who did not test.

*Star Reading Assessment Results: September, 2022*

| Grade | # Students Tested | At/ Above Benchmark<br><br>At/Above 40 Percentile Rank | On Watch<br><br>25-39 Percentile Rank | Intervention<br><br>10-24 Percentile Rank | Urgent Intervention<br><br>Below 10 Percentile Rank |
|-------|-------------------|-------------------------------------------------------|---------------------------------------|-------------------------------------------|-----------------------------------------------------|
| 1     | 28                | 28 (100%)                                            | 0%                                    | 0%                                        | 0%                                                 |
| 2     | 300               | 221 (74%)                                            | 39 (13%)                              | 34 (11%)                                  | 6 (2%)                                             |
| 3     | 386               | 269 (70%)                                            | 47 (12%)                              | 37 (10%)                                  | 33 (9%)                                            |

| | | | | | |
|---|---|---|---|---|---|
| 4 | 419 | 333 (79%) | 35 (8%) | 30 (7%) | 21 (5%) |
| 5 | 415 | 306 (74%) | 58 (14%) | 32 (8%) | 19 (5%) |
| 6 | 475 | 337(71%) | 67 (14%) | 53 (11%) | 18 (4%) |
| 7 | 442 | 288 (65%) | 57 (13%) | 64 (14%) | 33 (7%) |
| 8 | 457 | 296 (65%) | 74 (16%) | 45 (10%) | 42 (9%) |
| Total | 2,922 | | | | |

### Star Reading Assessment Results: December, 2022

By December, 47% of Shrewsbury's first graders transitioned to the Star Reading Assessment. 93% of students in Grade 2 and above were screened using this assessment within this period.

| Grade | # Students Tested | At/ Above Benchmark<br><br>At/Above 40 Percentile Rank | On Watch<br><br>25-39 Percentile Rank | Intervention<br><br>10-24 Percentile Rank | Urgent Intervention<br><br>Below 10 Percentile Rank |
|---|---|---|---|---|---|
| K | 2 | 2 (100%) | 0% | 0% | 0% |
| 1 | 28 | 172 (97%) | 3 (2%) | 3 (2%) | 0% |
| 2 | 300 | 288 (85%) | 27 (8%) | 15 (4%) | 10 (3%) |
| 3 | 386 | 304 (77%) | 43 (11%) | 31 (8%) | 18 (5%) |
| 4 | 419 | 353 (82%) | 31 (7%) | 26 (6%) | 20 (5%) |
| 5 | 415 | 322 (77%) | 51 (12%) | 22 (5%) | 21 (5%) |
| 6 | 475 | 319 (69%) | 65(14%) | 43 (9%) | 34 (7%) |
| 7 | 442 | 263 (61%) | 67(15%) | 62 (14%) | 42 (10%) |
| 8 | 457 | 292 (64%) | 78 (17%) | 47 (10%) | 39 (9%) |
| Total | 2,922 | | | | |

Districts can customize the percentile rank metric used to monitor student progress.  Initially the district was advised to use a score of at/above 40 PR as the benchmark for grade level proficiency. Because we used the

same measure for both 2020-2021 and 2021-2022, we can compare scores over time. It's evident that students in Grades K-4 are recovering reading skills faster than their peers in the upper grades.

*Star Reading Assessment Subgroup Scores : December 2022*

The table below shows the percentage of students in each subgroup that are on track to meet state benchmarks in Reading.
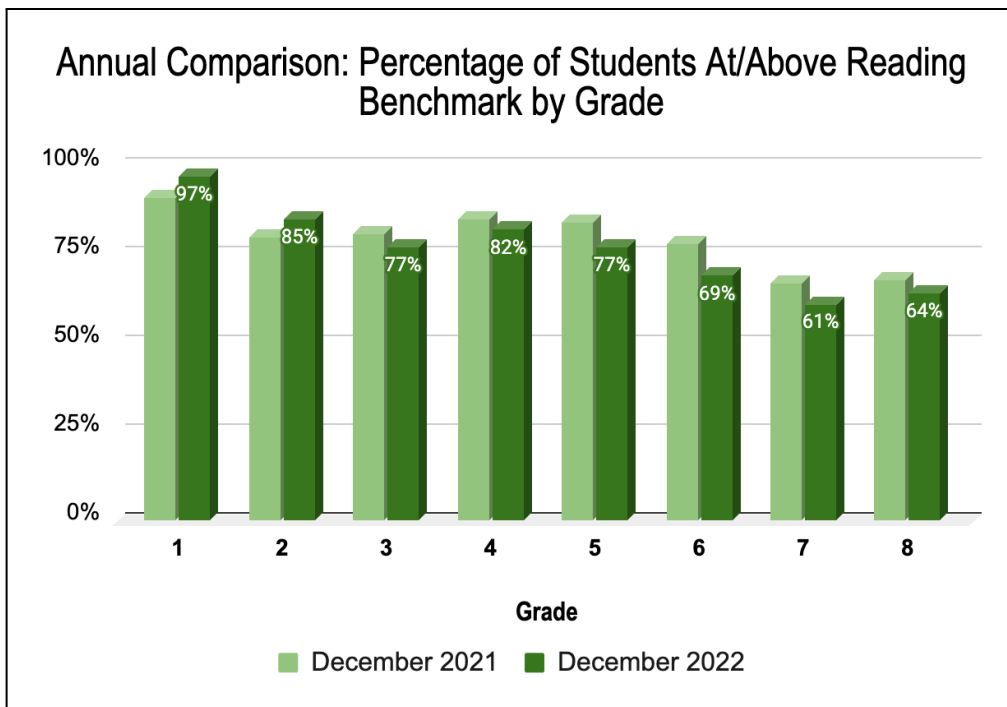
| Accountability Subgroups | % On Track to Meet State Benchmarks in Reading |
|---|---|
| Boys | 58% |
| Girls | 64% |
| Students w/ Disabilities | 26% |
| EL and Former EL | 22% |
| Low Income | 40% |

| Race & Ethnicity Subgroups | % On Track to Meet State Benchmarks in Reading |
|---|---|
| African American / Black | 48% |
| American Indian / Alaska Native | 67% |
| Asian | 71% |
| Hispanic / Latinx | 52% |
| White | 57% |

*Star Reading Annual Comparison 2021 to 2022*

| Grade | # Students Tested 2021 | At/ Above Benchmark **Dec 2021** At/Above 40 Percentile Rank | # Students Tested 2022 | At/ Above Benchmark **Dec 2022** At/Above 40 Percentile Rank |
|-------|------------------------|-------------------------------------------------------------|------------------------|-------------------------------------------------------------|
| 1 | 174 | 91% | 179 | 97% |
| 2 | 371 | 80% | 342 | 85% |
| 3 | 389 | 81% | 399 | 77% |
| 4 | 391 | 85% | 432 | 82% |
| 5 | 319 | 84% | 418 | 77% |
| 6 | 298* | 78% | 468 | 69% |
| 7 | 440 | 67% | 436 | 61% |
| 8 | 365 | 68% | 458 | 64% |
| Total | 2,747 | | 3,132 | |



Annual Comparison: Percentage of Students At/Above Reading Benchmark by Grade

Star Math Results

Again, most students in Shrewsbury were administered this numeracy assessment. The table below shows the range of scores during the first two administration windows this year.

*Star Math Assessment Results: September, 2022*

| Grade | # Students Tested | At/ Above Benchmark<br><br>At/Above 40 Percentile Rank | On Watch<br><br>25-39 Percentile Rank | Intervention<br><br>10-24 Percentile Rank | Urgent Intervention<br><br>Below 10 Percentile Rank |
|---|---|---|---|---|---|
| K | 1 | 0% | 0% | 0% | 1 (100%) |
| 1 | 348 | 287 (82%) | 30 (9%) | 24 (7%) | 7 (2%) |
| 2 | 327 | 261 (80%) | 31 (9%) | 24 (7%) | 11 (3%) |
| 3 | 398 | 331 (83%) | 19 (5%) | 26 (7%) | 22 (6%) |
| 4 | 426 | 355 (83%) | 39 (9%) | 18 (4%) | 14 (3%) |
| 5 | 414 | 352 (85%) | 29 (7%) | 14 (3%) | 19 (5%) |
| 6 | 478 | 385 (81%) | 40 (8%) | 35 (7%) | 18 (4%) |
| 7 | 441 | 359 (81%) | 30 (7%) | 36 (8%) | 16 (4%) |
| 8 | 457 | 356 (78%) | 43 (9%) | 31 (7%) | 27 (6%) |
| **Total** | **3290** | **2686 (82%)** | **261 (8%)** | **208 (6%)** | **135 (4%)** |

*Star Math Assessment Results: December, 2022*

| Grade | # Students Tested | At/ Above Benchmark<br><br>At/Above 40 Percentile Rank | On Watch<br><br>25-39 Percentile Rank | Intervention<br><br>10-24 Percentile Rank | Urgent Intervention<br><br>Below 10 Percentile Rank |
|-------|-------------------|-------------------------------------------------------|---------------------------------------|-------------------------------------------|----------------------------------------------------|
| K | 0 | 0% | 0% | 0%) | 0% |
| 1 | 359 | 328 (91%) | 19 (5%) | 10 (3%) | 2 (1%) |
| 2 | 358 | 314 (88%) | 14 (4%) | 25 (7%) | 5 (1%) |
| 3 | 408 | 361 (88%) | 18 (4%) | 14 (3%) | 15 (4%) |
| 4 | 440 | 395 (90%) | 17 (4%) | 15 (3%) | 13 (3%) |
| 5 | 428 | 362 (85%) | 27 (6%) | 24 (6%) | 15 (4%) |
| 6 | 484 | 375 (77%) | 65 (13%) | 25 (5%) | 19 (4%) |
| 7 | 440 | 355 (81%) | 31 (7%) | 27 (6%) | 27 (6%) |
| 8 | 460 | 378 (82%) | 37 (8%) | 25 (5%) | 20 (4%) |
| **Total** | **3377** | **2868 (85%)** | **228 (7%)** | **165 (5%)** | **116 (3%)** |

### *Star Math Assessment Subgroup Scores : December 2022*

The table below shows the percentage of students in each subgroup that are on track to meet state benchmarks in Math.

| Accountability Subgroups | % On Track to Meet State Benchmarks in Math |
|---|---|
| Boys | 67% |
| Girls | 63% |
| Students w/ Disabilities | 27% |
| EL and Former EL | 36% |
| Low Income | 40% |

| Race & Ethnicity Subgroups | % On Track to Meet State Benchmarks in Math |
|---|---|
| African American / Black | 45% |
| American Indian / Alaska Native | 63% |
| Asian | 81% |
| Hispanic / Latinx | 52% |
| White | 59% |

*Star Math Annual Comparison 2021 to 2022*

| Grade | # Students Tested 2021 | At/ Above Benchmark **Dec 2021** At/Above 40 Percentile Rank | # Students Tested 2022 | At/ Above Benchmark **Dec 2022** At/Above 40 Percentile Rank |
|---|---|---|---|---|
| 1 | 343 | 87% | 359 | 91% |
| 2 | 403 | 80% | 358 | 88% |
| 3 | 422 | 87% | 408 | 88% |
| 4 | 425 | 85% | 440 | 90% |
| | | | | |
| 5 | 428 | 81% | 428 | 85% |
| 6 | 460 | 83% | 484 | 77% |
| 7 | 465 | 77% | 440 | 81% |
| 8 | 372 | 85% | 460 | 82% |
| Total | 3,311 | | 3,377 | |



Annual Comparison: Percentage of Students At/Above Math Benchmark by Grade
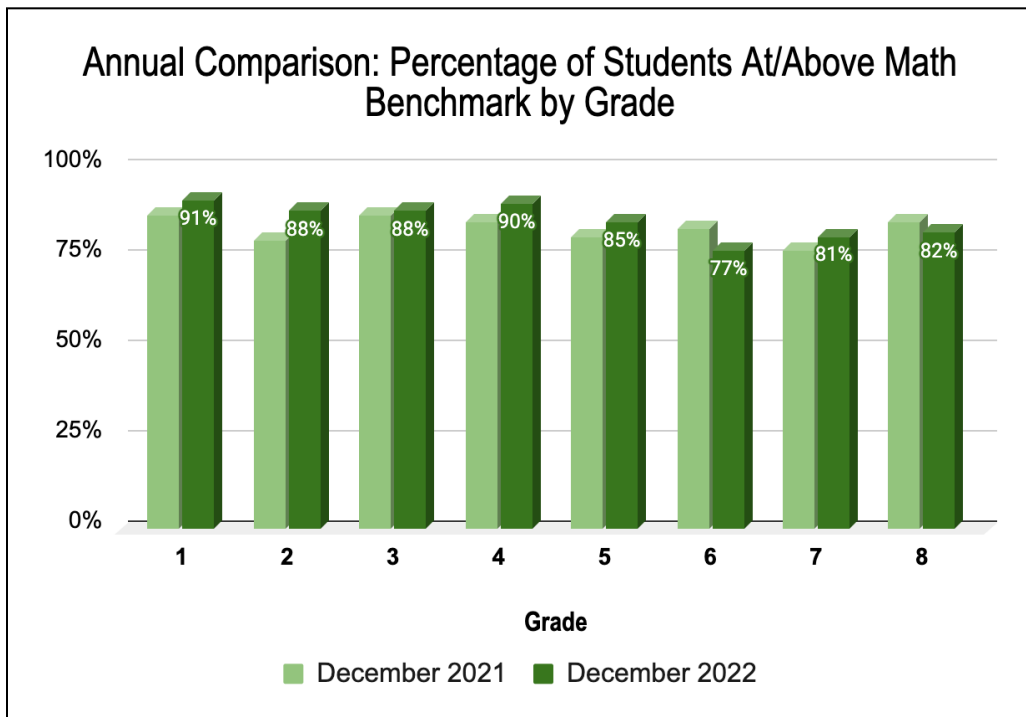
## III. Using Star Data to Project Proficiency

The state benchmark report measures current levels of student performance compared to end-of-year expectations for proficiency. For this reason, grade level benchmark score thresholds increase over the course of the year.

State Benchmark Projections of Proficiency
The table below depicts the percentage of students that are on track to meet state benchmarks by the end of the school year in Reading and Math. Projections are only available for students in Grade 1 and above.

| Grade | % Predicted to be Proficient in Reading by June | % Predicted to be Proficient in Math by June |
|---|---|---|
| ALL | 63% | 68% |
| 1 | 93% | 80% |
| 2 | 69% | 70% |
| 3 | 64% | 74% |
| 4 | 56% | 66% |
| 5 | 57% | 58% |
| 6 | 55% | 79% |
| 7 | 50% | 53% |
| 8 | 54% | 61% |

Use of the Star screening tools for students in Grades K-8 has made it easier to monitor student cohorts in both English Language Arts and Mathematics over time. Using a customized metric that assesses student scores against state benchmarks, we can forecast student performance on the Massachusetts Comprehensive Assessment System (MCAS). As you may recall, on average, 2022 MCAS scores for students in Grades K-8 were 10-15% lower than typical results in Reading. This aligned well with the forecast provided in 2021.

Although this is a new tool for us, it's encouraging to think that using Star can help us anticipate (and address) skill deficits prior to state test administration. The charts that follow depict projected scores by category for each subject area.

**Reading Benchmark Projections**

| Grade | % On Track to Meet State Benchmarks by Category | | | | | |
|-------|----------|-------|-----------|---------|----------------------|-------------|
| | # Tested | E / M | Exceeding | Meeting | Partially Meeting | Not Meeting |
| 1 | 178 | 93% | 105 (59%) | 61 (34%) | 12 (7%) | 0% |
| 2 | 340 | 72% | 87 (26%) | 158 (46%) | 85 (25%) | 10 (3%) |
| 3 | 396 | 59% | 71 (18%) | 164 (41%) | 137 (35%) | 24 (6%) |
| 4 | 430 | 60% | 54(13%) | 201 (47%) | 146 (34%) | 29 (7%) |
| 5 | 416 | 58% | 39 (9%) | 203 (49%) | 147 (35%) | 27 (6%) |
| 6 | 461 | 60% | 35 (8%) | 242(52%) | 150 (33%) | 34 (7%) |
| 7 | 434 | 52% | 37 (9%) | 188 (43%) | 166 (38%) | 43(10%) |
| 8 | 456 | 55% | 55 (12%) | 194 (43%) | 170 (37%) | 37 (8%) |

**Math Benchmark Projections**

| Grade | % On Track to Meet State Benchmarks by Category | | | | | |
|-------|----------|-------|-----------|---------|----------------------|-------------|
| | # Tested | E / M | Exceeding | Meeting | Partially Meeting | Not Meeting |
| 1 | 359 | 81% | 123 (34%) | 170 (47%) | 56 (16%) | 10 (3%) |
| 2 | 358 | 72% | 124 (35%) | 131 (37%) | 82 (23%) | 21 (6%) |
| 3 | 408 | 73% | 119 (29%) | 178 (44%) | 81 (20%) | 30 (7%) |
| 4 | 440 | 72% | 108 (25%) | 205 (47%) | 99 (23%) | 28 (6%) |
| 5 | 428 | 59% | 90 (21%) | 161 (38%) | 150 (35%) | 27 (6%) |
| 6 | 484 | 57% | 82 (17%) | 195 (40%) | 175 (36%) | 32 (7%) |
| 7 | 440 | 53% | 77 (18%) | 155 (35%) | 169 (38%) | 39 (9%) |
| 8 | 460 | 62% | 91 (20%) | 193 (42%) | 143 (31%) | 33 (7%) |

Given that this is a new tool, we should be cautious about interpreting the projections too stringently. Reports that forecast future performance will likely become more accurate as more student data is submitted. All students will take screener assessments in both subjects again in April, 2023. In the meantime, individual educators and grade level teams are using this assessment information to intervene with individual children and to modify educational plans to match instruction to focus on specific skills.

## IV. Next Steps

How do educators use this data? Briefly, the software helps to identify which students need support AND the skills they need next in order to make effective progress.
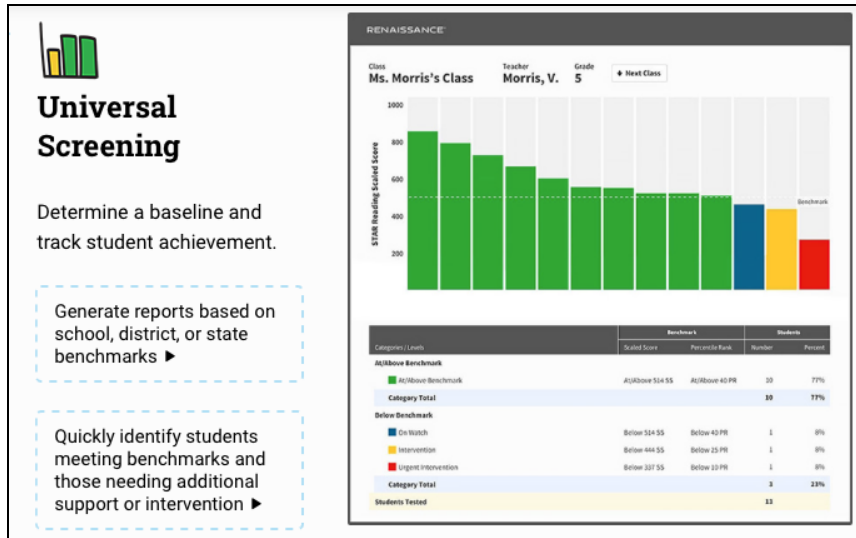


The report to the left is a sample, and does not depict actual SPS student data. This example does serve to show how Star data reports are useful, however. Teachers can see which students are meeting or exceeding benchmarks in green. The blue bar indicates students that should be monitored, and the yellow and red groups represent students requiring intervention.

Other reports provide a snapshot of the standards students have mastered by grade. This information is helpful for instructional planning. The picture below shows a snapshot of an Instructional Planning report from Grade 2. Reports like this are used by teachers to identify focus skills.

The Star screening tools complement common assessments developed by grade level teams. Individual educators have prioritized analysis of the data to identify an individual child's strengths so that they may

target a specific focus for instruction within each subject area. For example, taking this approach, a fifth-grade teacher could see the components of a student's comprehension score in detail, understanding at a glance how each student's vocabulary factors into general understanding of grade level text.

At the district level, our analysis of student scores to date has centered on how well Star scores compare to state benchmarks, using a scale that allows us to project how students at each grade level would perform on the Massachusetts state assessment based on their initial screening scores. Curriculum teams across grade spans are also using the information to align specific supports by grade levels, either with additional tutoring or by adjusting curriculum content to focus instruction on common skill gaps.

## VII. Conclusion

In a learning organization, curriculum, instruction and assessment are closely connected. Technology enables the educators in our district to assess students individually and efficiently, allowing our teachers to make the most of their time with students. More recently, the use of a common assessment across the K-8 grade span has helped us to bridge the gap between levels, for students and staff.

Assessment data is most useful when it informs instruction. As we anticipate a third cycle of testing, it's exciting to be positioned to use this information to structure effective intervention, and ultimately to effectively plan for the year ahead. Strong literacy skills are foundational to future success. Working together I'm confident our educators will use this information to support students, now and in the years to come.