COMMONWEALTH of VIRGINIA

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September 12, 2023

The Honorable Barry D. Knight
Chair, House Appropriations Committee
Pocahontas Building
900 E. Main Street
Richmond, Virginia 23219

The Honorable Janet D. Howell
Co-Chair, Senate Finance and Appropriations Committee
Pocahontas Building
P.O. Box 396
Richmond, Virginia 23218

The Honorable George L. Barker
Co-Chair, Senate Finance and Appropriations Committee
Pocahontas Building
P.O. Box 396
Richmond, Virginia 23218

Dear Delegate Knight, Senator Howell, and Senator Barker:

We are pleased to submit the enclosed Annual Update on the Virginia Kindergarten Readiness Program (VKRP). The report summarizes VKRP data collected in the fall and spring during the 2022-2023 academic year on both statewide kindergarten and publicly funded three and four-year-old pre-kindergarten students.

House Bill 6001, Chapter 1, Acts of Assembly 2023 Special Session I, Item H (a-f) directs the Department of Education and the University of Virginia's Center for Advanced Study of Teaching and Learning to use the results of the multi-dimensional Virginia Kindergarten Readiness Program assessments to determine how well the Virginia Preschool Initiative promotes readiness in all key developmental domains assessed and submit such findings to the Chairmen of House Appropriations and Senate Finance Committees:

> *e. The Department and the University of Virginia's Center for Advanced Study of Teaching and Learning shall use the results of the multi-dimensional Virginia Kindergarten Readiness Program assessments to determine how well the Virginia Preschool Initiative promotes readiness in all key developmental domains assessed. The Department shall submit such findings using data from the prior year's fall assessment to the Chairs of House Appropriations and Senate Finance and Appropriations Committees no later than October 1 each year.*

An update on the current progress of the development and piloting of the VKRP Mid-Year Pilot, VKRP 1-3 Pilot, and enhancements to the VKRP system for the 2023-2024 school year are also detailed in this report.

Please direct questions to Jenna Conway, Deputy Superintendent of Early Childhood at Jenna.Conway@doe.virginia.gov.

Sincerely,

Lisa Coons

LC/

VKRP Annual Report for the Chairmen of House Appropriations and Senate Finance Committees

October 2023 Report for the 2022-2023 School Year

Acknowledgments:

This report was prepared by the University of Virginia's Center for Advanced Study of Teaching and Learning (CASTL) and the Virginia Department of Education supported through an appropriation from the Virginia General Assembly to the Virginia Department of Education subcontracted to CASTL. The Virginia Kindergarten Readiness Program (VKRP) is implemented by CASTL under the direction of Amanda Williford (williford@virginia.edu).

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Executive Summary

In this October 2023 data report[1] of the Virginia Kindergarten Readiness Program (VKRP) to the General Assembly, we report the fall and spring kindergarten data collected during the 2022-2023 academic year, kindergarten data trends from fall 2019 through spring 2023, 2022-2023 pre-kindergarten data for three- and four-year-old publicly funded pre-kindergarten students, update on the progress on the mathematics, self-regulation, social skills, and mental health well-being assessment pilot in first through third grades (1-3 Assessment Pilot), and share future goals of the VKRP system for the 2023-2024 year and beyond.

VKRP empowers Virginia's teachers and education leaders by providing a comprehensive assessment system that shines a spotlight on pre-kindergarten and kindergarten students' learning and growth. VKRP is a Virginia standards-aligned, multi-year early learning assessment system that produces actionable information to guide decisions at the student, classroom, school, and division level from the beginning of pre-kindergarten through the end of kindergarten to support student learning. VKRP provides assessments of mathematics, self-regulation, and social skills to complement Virginia's longstanding literacy screeners. The 2022-2023 literacy data gathered from the PALS-K measure in kindergarten and the Virginia Language & Literacy Screener: Pre-K (VALLS: Pre-K) come directly from the Virginia Literacy Partnerships (VLP), formerly known as the PALS office. Additional information on the literacy screeners can be found on the VLP website.

From 2014 through 2018, the Center for Advanced Study of Teaching and Learning (CASTL) at the University of Virginia implemented VKRP in kindergarten through a voluntary rollout where, each year, an increasing number of school divisions elected to administer VKRP. Virginia began statewide, mandatory kindergarten administration of VKRP in the 2019-2020 school year.

The VKRP team developed a four-year-old pre-kindergarten extension of VKRP between 2018-2021. In the 2021-2022 school year, VKRP became available to all publicly funded pre-kindergarten programs to assess four-year-old children's skills in fall of 2021 and spring of 2022. Additionally, the VKRP team developed a three-year-old extension of VKRP, which became available to all publicly funded pre-kindergarten programs to assess three-year-old children's skills in the 2022-2023 school year. Pre-kindergarten expansion of VKRP will continue during the 2023-2024 school year.

Defining Readiness for Summative Data Purposes

Virginia defines school readiness as, "the capabilities of children, their families, schools, and communities that best promote student success in kindergarten and beyond." For summative purposes, kindergarten students are categorized as *ready* or *meeting the overall benchmark* (fall) or *meeting the overall benchmark* (spring) if their assessment scores indicate that they demonstrate the minimally expected skills for the fall or the spring (depending upon the data timepoint) of kindergarten for literacy, mathematics, self-regulation, **and** social skills. If a kindergarten student's assessment scores do **not** indicate they are demonstrating the minimally expected skill **in one or more** areas at the respective timepoint (fall or spring), they are categorized as *not ready* or *below the overall benchmark* (fall) or *below the overall benchmark* (spring).

[1] This report is submitted to satisfy the requirement that "the Department shall submit such findings using data from the prior year's fall assessment to the Chairmen of House Appropriations and Senate Finance Committees no later than October 1 each year."

VKRP does not currently publish benchmarks for pre-kindergarten children's skills. Instead, starting in the 2022-2023 school year, in pre-kindergarten, VKRP piloted Skill Development Bands (Beginning, Growing, and Strong) to help programs and educators interpret and use their VKRP pre-kindergarten data. Separate bands were established for the fall and spring to represent children's skill development as compared to expectations at that particular point in time. VLP has created separate skill development bands for the VALLS: Pre-K, and the VLP team can provide more information about the VALLS: Pre-K bands. These bands are included to give guidance on where children are in their development of early learning skills so that teachers can provide appropriate support and instruction. They are not intended to serve as benchmarks.

VKRP and the COVID-19 Pandemic

During the worldwide COVID-19 pandemic, young students experienced sudden and long-lasting negative stresses to their care and early learning environments, negatively impacting their academic and social-emotional school readiness. Nationally and within the Commonwealth, there were missed opportunities to learn foundational early mathematics and literacy skills, pandemic-related learning losses, and adverse impacts on young students' mental health well-being. The pandemic had disproportionate impacts on students from families with low-income backgrounds and students who resided in neighborhoods with decreased access to early learning opportunities (World Bank, 2023[2]). Importantly, if students are not provided with opportunities to catch up and these losses are not addressed, gaps in students' early learning skills will continue to widen over time (World Bank, 2023[2]). VKRP collects data on students' early learning, social-emotional skills, and mental health well-being that can be used to understand early learning trends over time and inform recovery investments.

How Statewide VKRP Data Can Be Used in Virginia

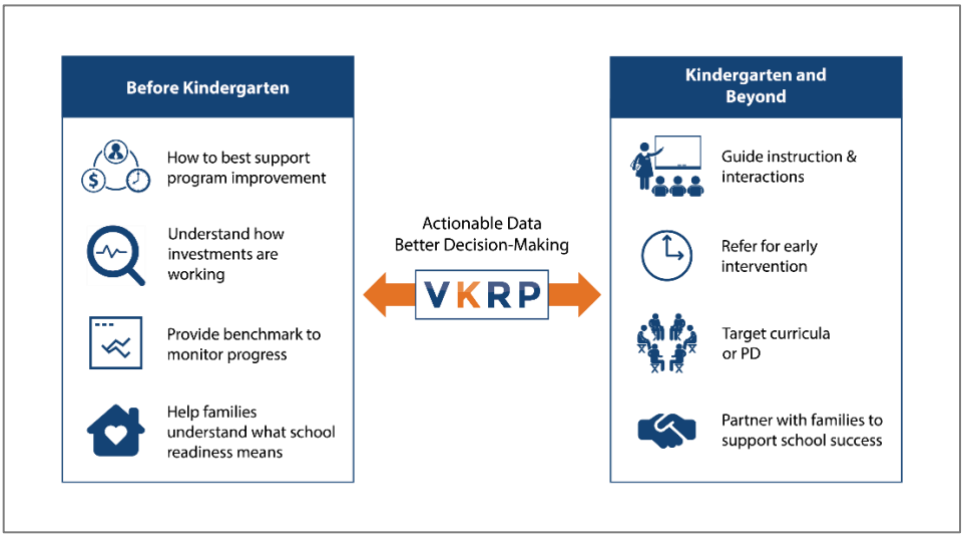
VKRP highlights the strengths of Virginia's pre-kindergarten and kindergarten children, bringing attention to areas where students need support to maximize their learning. For teachers and school personnel, VKRP data can help drive day-to-day instruction, guide conversations with families, and inform decisions about educators' professional development needs. At the state level, VKRP data informs policy decisions and helps identify schools, programs, divisions, and regions that may need more support or can serve as exemplars.

VKRP can be used by various stakeholders to better understand and support students' academic and social-emotional learning and development, as well as their mental health well-being.

[2] Schady, Norbert, Alaka Holla, Shwetlena Sabarwal, Joana Silva, and Andres Yi Chang. 2023. Collapse and Recovery: How the COVID-19 Pandemic Eroded Human Capital and What to Do about It. Washington, DC: World Bank. doi:10.1596/978-1-4648-1901-8.

Figure 1

How Statewide Data Can Be Used in Virginia



An Integrated Approach to VDOE's Early Childhood Data Systems: Virginia Connects for Kids

In 2022, VDOE provided funding through the federal Preschool Development Grant Funds and American Rescue Plan Act to a team of researchers at CASTL to develop and implement a coordinated and integrated technology strategy and shared infrastructure between the growing state data collection initiatives (VLP, VKRP, and LinkB5[3]) to maximize the impact and potential of these data systems. The integrated data system, Virginia Connects for Kids (VAConnects), ensures that each project can not only sustain individual growth and expansion but also work together to prioritize the integrity and continuity of data needed to inform and strengthen Virginia's sizeable investment in young learners—birth through third grade. The goals of the integrated data system are to build a robust, coordinated system with enhanced hosting infrastructure and security features; shared data warehousing reflecting effective data governance; consistent, aligned, and integrated reporting; and a more streamlined user interface. This year, we have completed the planning and design phase of VAConnects, built assessment services for VLP, and launched the pilot Virginia Language & Literacy Screener (VALLS) K-3 in 17 school divisions across Virginia.

2022-2023 Kindergarten Students Assessed With VKRP

In the fall of 2022, teachers assessed approximately 98% of eligible[4] kindergarteners on the PALS-K literacy screener and the Early Mathematics Assessment System (EMAS) mathematics assessment. Similarly, approximately 98% of eligible kindergarteners were rated by teachers on self-regulation and social skills on the Child Behavior Rating Scale (CBRS) and Mental Health Well-being items. Statewide, 96% of assessed kindergarten

[3] LinkB5. (2021). Academic Two-Pager. Retrieved from https://resources.linkb5.virginia.edu/hc/en-us/articles/6954727887387-LinkB5-Academic-Two-Pager

[4] Kindergarten students were eligible if they were in a public kindergarten classroom and were not otherwise exempt from testing.

students had complete VKRP data on all four measures – literacy (PALS-K), mathematics (EMAS), and self-regulation and social skills assessments (CBRS) in the fall of 2022.

In the spring of 2023, approximately 98% of eligible kindergarteners were assessed on the PALS-K literacy screener and the EMAS mathematics assessment and were rated by teachers on self-regulation and social skills using the CBRS and Mental Health Well-being items. Statewide, 96% of assessed kindergarten students enrolled in the spring of 2023 had complete VKRP data on the four assessments – literacy (PALS-K), mathematics (EMAS), self-regulation, and social skills (CBRS) assessments in the spring of 2023.

Over 78,000 kindergarten students were assessed in both the fall of 2022 and the spring of 2023 in all four domains of literacy, mathematics, self-regulation, and social skills.

2022-2023 VKRP Kindergarten Key Findings

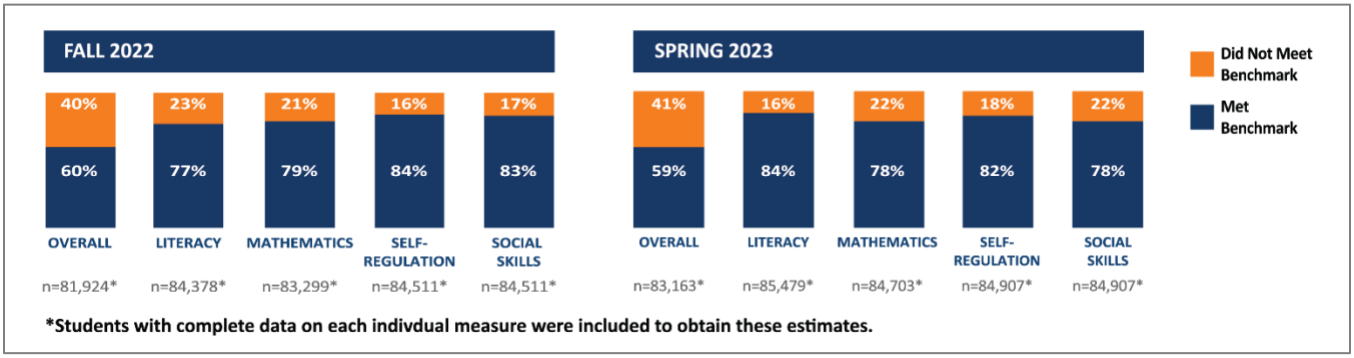
Fall 2022 and Spring 2023 VKRP Kindergarten Data

In fall of 2022, approximately 60% of kindergarten students met the overall benchmark or minimum competency level in literacy, mathematics, self-regulation, and social skills. This means that 40% of Virginia's kindergarteners began the school year still needing to build skills in literacy, mathematics, self-regulation, and/or social skills (Figure 2).

In the spring of 2023, approximately 59% of kindergarten students met the overall benchmark or minimum competency level in literacy, mathematics, self-regulation, and social skills. This means that 41% of Virginia's kindergarteners ended the school year below expected levels in literacy, mathematics, self-regulation, and/or social skills. These results indicate a very small, 1% increase in kindergarten students not meeting the overall VKRP benchmark from fall 2022 to spring 2023.

Figure 2

Fall 2022 and Spring 2023 Kindergarten Overall and Domain Benchmark Estimates



[+]If a kindergarten student does not demonstrate the minimally expected skill in one or more areas at the respective timepoint (fall or spring), they are categorized as not ready or below the overall benchmark (fall) or below the overall benchmark (spring).

2022-2023 VKRP Kindergarten Benchmark Estimates Across Demographics

Students falling below the overall VKRP benchmark at the beginning and/or end of kindergarten were disproportionately more likely to be students from low-income backgrounds, students with a disability, students who are English language/multilingual learners (EL), and students from historically marginalized racial/ethnic groups. These differential patterns in skill development illustrate the stark disparities in opportunities and access

to high-quality educational experiences available to students and their families. These results elevate concerns that disparities in opportunity and access were likely exacerbated following the onset of the COVID-19 pandemic and mandated school closures in Virginia during the spring of 2020 and beyond.

Table 1

2022-2023 Kindergarten Demographics and Below Benchmark Percentages

	Percent Below the Overall Benchmark	
	Fall 2022	Spring 2023
Kindergarten Student Demographic Characteristics		
From low-income background[a]	53%	53%
Has a disability[b]	64%	66%
Is an English language/multilingual learner[c]	66%	58%
Student race		
American Indian or Alaska Native	40%	38%
Asian	27%	27%
Black or African American	49%	55%
Hispanic/Latino of any race	56%	51%
White, not of Hispanic origin	32%	33%
Native Hawaiian or other Pacific Islander	39%	31%
Non-Hispanic/Latino of any race, two or more races	37%	38%

[a]Source: SRC Disadvantaged Status Flag. Students are identified as having a low-income background if, at any point during the school year, the student: 1) is eligible for Free/Reduced Meals, 2) receives TANF, or 3) is eligible for Medicaid.
[b]Source: SRC Primary Disability Code. Students are identified as having a disability if any code is present *except,* "*Qualified Individual under Section 504.*"
[c]Source: Student Record Collection (SRC) EL Services Code. Students are identified as English language/multilingual learners (EL) if code is, "*Identified as EL and receives EL services*," "*Identified as EL but has refused EL services*," or "*Identified as formerly EL for each of the four years after exiting EL services*."

2022-2023 VKRP Kindergarten Mental Health Well-Being Data

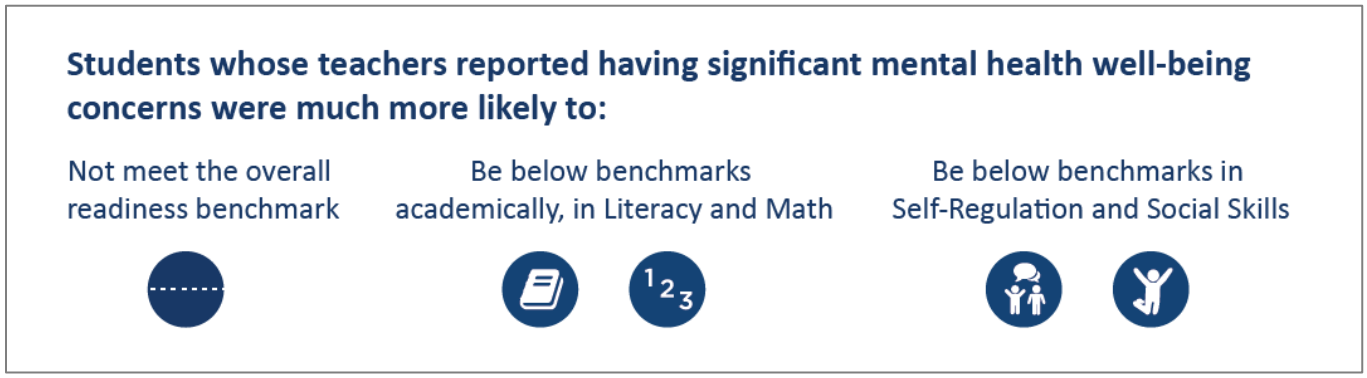
In fall of 2021, VKRP added items to measure students' mental health well-being. Teachers continued to report concern for student mental health well-being in the 2022-2023 school year. Teachers reported being moderately, very, or extremely concerned about mental health and social-emotional well-being for about 14% of kindergarten students in fall 2022 and 13% in spring 2023.

Additionally, in both fall of 2022 and spring of 2023, students whose teachers were concerned for their mental health well-being were much more likely to *not* meet the overall benchmark, and to be below the benchmark academically and social-emotionally when compared to students whose teachers did not report mental health well-being concern. These results indicate teacher concern is an important indicator of which students likely need comprehensive and intensive supports to be successful in school.

> ***Teacher concern about a student's well-being is an important indicator that the student may need early, comprehensive, and intensive supports to be successful in school.***

Figure 3

Mental Health Well-Being Concerns and Benchmark Status

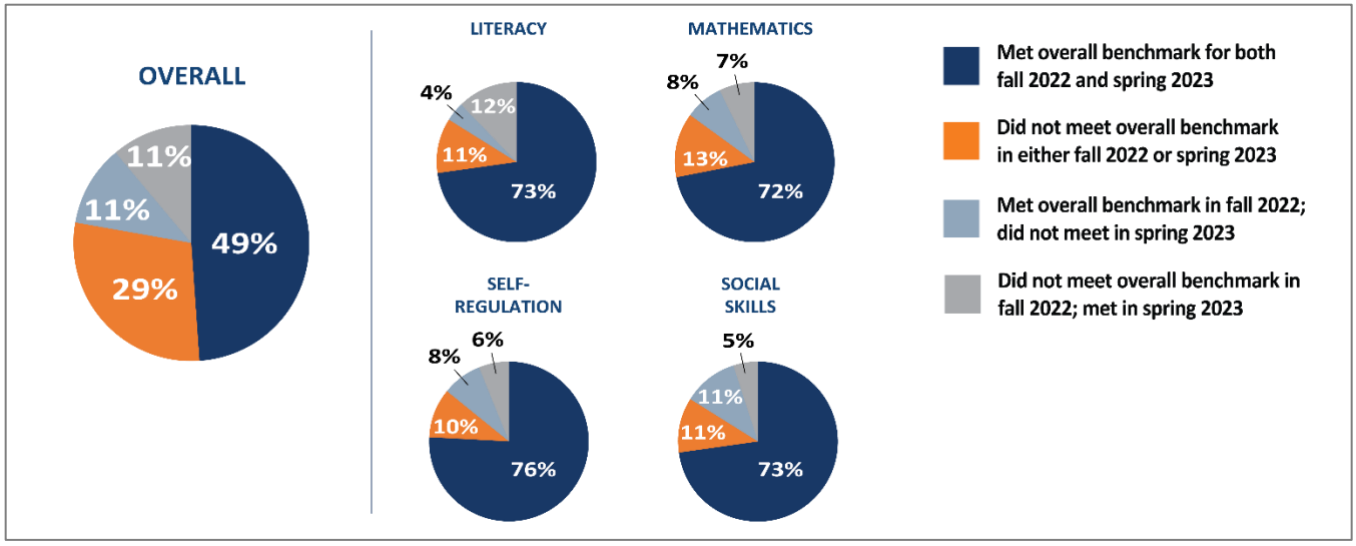


2022-2023 VKRP Kindergarten Benchmark and Growth Data

This is the second year that VKRP kindergarten data examined growth from the fall to spring timepoints. In terms of overall benchmark status, 49% of kindergarten students met the overall benchmark for both fall 2022 and spring 2023, while 29% did not meet the overall benchmark in either fall 2022 or spring 2023. Smaller percentages of students shifted in their overall benchmark status across the 2022-2023 school year—either meeting the overall benchmark in fall 2022 and not meeting in spring 2023 (11%) or not meeting the overall benchmark in fall 2022 and meeting in spring 2023 (11%).

Figure 4

Kindergarten Benchmark Status for Fall 2022 and Spring 2023



We examined trends in student growth[5] from fall 2022 to spring 2023 in mathematics, self-regulation, and social skills. Kindergarten students, on average, tended to display strong growth in mathematics skills and modest growth in self-regulation and social skills. However, there was variation in students' growth across all domains

[5] Growth scores on the pre-kindergarten literacy screener are still being finalized. Currently pre-kindergarten literacy scores represent children's outcomes at each distinct time period (i.e., fall and spring).

with some students making robust gains, while a small percentage of students demonstrated negative growth from fall 2022 to spring 2023. Student demographic characteristics were associated with growth in mathematics, self-regulation, and social skills, although the size of these associations tended to be small.

One consistent finding across all learning domains was that kindergarten students who are English language/multilingual learners (EL) tended to make greater skill gains compared to their non-EL peers.

In addition, although students with no pre-kindergarten experience were likely to enter kindergarten below the overall readiness benchmark in the fall, they made greater skill gains in mathematics, self-regulation, and social skills during kindergarten compared to their peers with pre-k experience.

2019-2023 VKRP Kindergarten Trends Across Time Key Findings

Overall readiness estimates from fall 2019 to fall 2022 have remained relatively stable with a slight decrease in the percentage of students meeting the overall benchmark from fall 2019 to fall 2020, followed by slight increases in fall 2021 and fall 2022.

Overall benchmark estimates from spring 2021 to spring 2023 have increased. There was a large increase in students meeting the overall benchmark from spring 2021 during the height of the pandemic (48%) to spring 2022 (56%). There was a slight increase from spring 2022 to spring 2023 (59%) in students meeting the overall benchmark. Spring VKRP data was not collected prior to the 2019-20 school year, and the spring assessment was not administered in 2020 due to the onset of the COVID-19 pandemic and universally mandated public-school closures.

Figure 5

Fall Overall Kindergarten Readiness Estimates 2019-2022

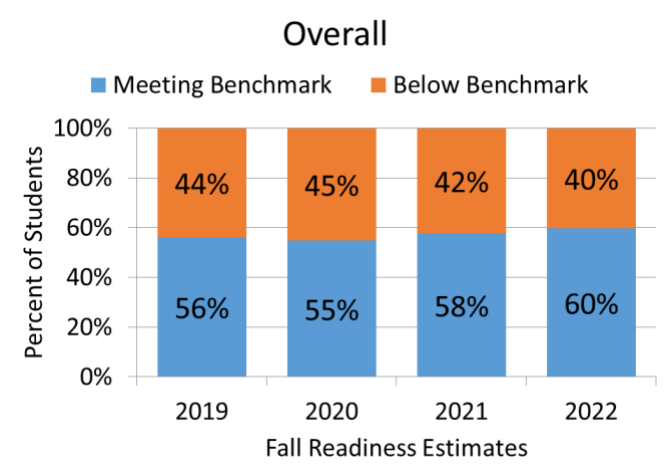
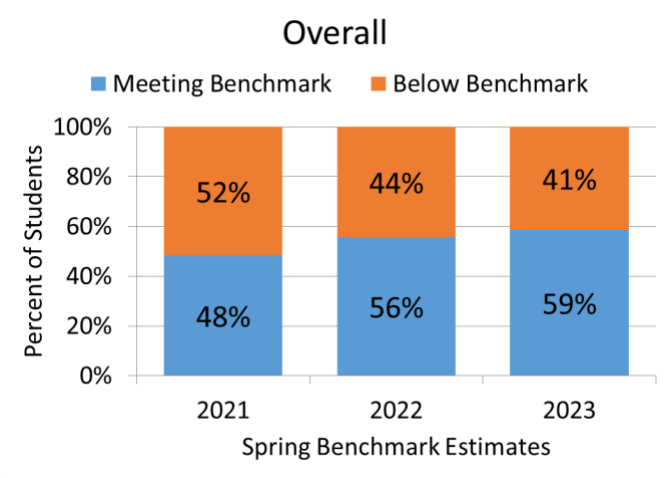


Figure 6

Spring Overall Kindergarten Benchmark Estimates 2021-2023



2022-2023 VKRP Pre-kindergarten Students Assessed With VKRP

Beginning in the 2022-2023 school year, VKRP was administered to publicly funded three-and four-year-old children in Virginia Preschool Initiative (VPI) and Virginia Early Childhood Foundation (VECF) Mixed Delivery classrooms in the fall of 2022 and in the spring of 2023. Pre-kindergarten classrooms in public schools that are not funded by VPI (such as a full ECSE classroom, Head Start classroom, Title I classroom, or other locally supported pre-kindergarten classroom) may have chosen to administer the VKRP assessments to their children, but it was not required.

Three-Year-Old Assessment Completion Data

In the fall of 2022, teachers assessed approximately 71% of eligible[6] three-year-old pre-kindergarteners on the VALLS: Pre-K and 65% of eligible three-year-old pre-kindergarteners on the Early Mathematics Assessment System (EMAS) mathematics assessment. Approximately 80% of eligible three-year-old pre-kindergarteners were rated by teachers on self-regulation and social skills on the Child Behavior Rating Scale (CBRS) and Mental Health Well-being items. Statewide, 69% of assessed three-year-old pre-kindergarten children had complete VKRP data on all four measures – literacy (VALLS: Pre-K), mathematics (EMAS), and self-regulation and social skills assessments (CBRS) in the fall of 2022.

In the spring of 2023, approximately 78% of eligible three-year-old pre-kindergarteners were assessed on the VALLS: Pre-K literacy screener, 73% were assessed on the EMAS mathematics assessment, and 81% were rated by teachers on self-regulation and social skills using the CBRS and Mental Health Well-being items. Statewide, 78% of assessed three-year-old pre-kindergarten children enrolled in the spring of 2023 had complete VKRP data on the four assessments – literacy (VALLS: Pre-K), mathematics (EMAS), self-regulation, and social skills (CBRS) assessments in the spring of 2023.

[6] Three- and four-year-old pre-kindergarten children were eligible if they were in a participating VKRP classroom and were not otherwise exempt from testing.

Over 3,800 three-year-old pre-kindergarten children were assessed in both the fall of 2022 and the spring of 2023 in all four domains of literacy, mathematics, self-regulation, and social skills.

Four-Year-Old Assessment Completion Data

In the fall of 2022, teachers assessed approximately 93% of eligible four-year-old pre-kindergarteners on the VALLS: Pre-K and 91% of eligible four-year-old pre-kindergarteners on the Early Mathematics Assessment System (EMAS) mathematics assessment. Approximately 92% of eligible four-year-old pre-kindergarteners were rated by teachers on self-regulation and social skills on the Child Behavior Rating Scale (CBRS) and Mental Health Well-being items. Statewide, 90% of assessed four-year-old pre-kindergarten children had complete VKRP data on all four measures – literacy (VALLS: Pre-K), mathematics (EMAS), and self-regulation and social skills assessments (CBRS) in the fall of 2022.

In the spring of 2023, approximately 95% of eligible four-year-old pre-kindergarteners were assessed on the VALLS: Pre-K literacy screener, 91% were assessed on the EMAS mathematics assessment, and 92% were rated by teachers on self-regulation and social skills using the CBRS and Mental Health Well-being items. Statewide, 92% of assessed four-year-old pre-kindergarten children enrolled in the spring of 2023 had complete VKRP data on the four assessments – literacy (VALLS: Pre-K), mathematics (EMAS), self-regulation, and social skills (CBRS) assessments in the spring of 2023.

Over 25,000 four-year-old pre-kindergarten children were assessed in both the fall of 2022 and the spring of 2023 in all four domains of literacy, mathematics, self-regulation, and social skills.

2022-2023 VKRP Three-Year-Old Pre-kindergarten Key Findings

Fall 2022 and Spring 2023 Three-Year-Old VKRP Pre-kindergarten Data

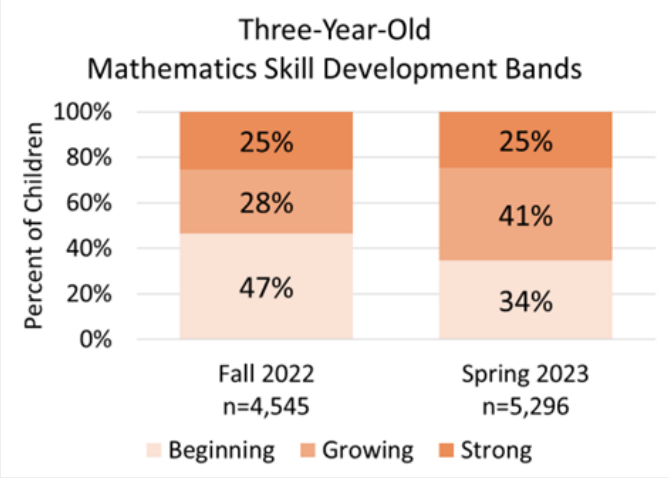
Three-year-old pre-kindergarten children displayed a range of skills across mathematics, self-regulation, and social skills in fall 2022 and spring 2023.

In 2022-2023, VKRP and VLP piloted Skill Development Bands (Beginning, Growing, and Strong) to help programs and educators interpret and use their VKRP pre-kindergarten data. For mathematics, self-regulation, and social skills, separate bands were established in the fall of 2022 and spring of 2023 to represent children's development as compared to expectations at that point in time.

For mathematics, in the fall of 2022, the largest percentage of children's scores (47%) fell into the Beginning Skill Development Band. In the spring of 2023, the largest percentage of children's scores (41%) fell into the Growing Skill Development Band.

Figure 7

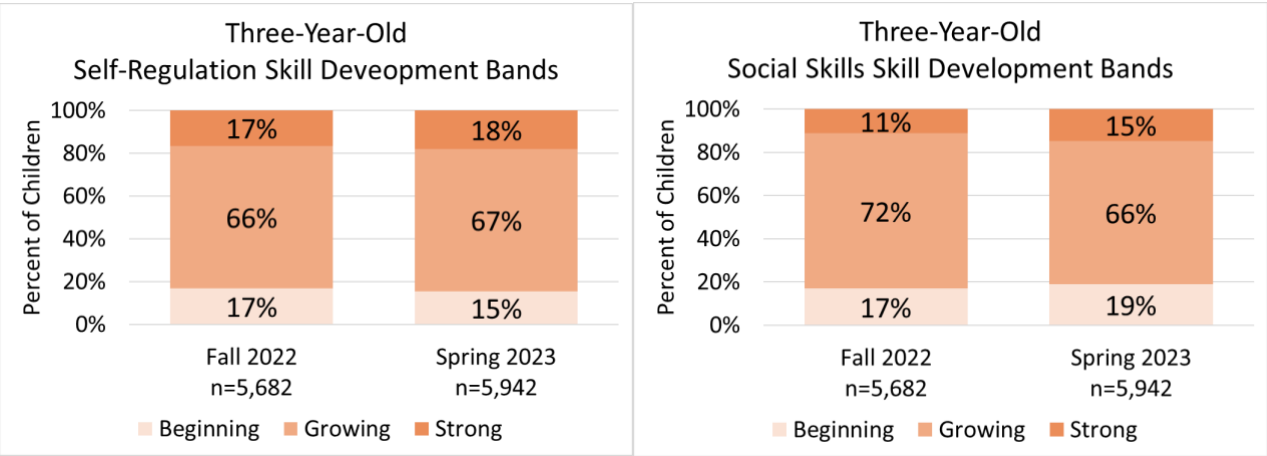
Three-Year-Old Mathematics Skill Development Bands



For self-regulation and social skills, the largest percentage of children's scores fell into the Growing Skill Development Band in both the fall of 2022 (66% and 72%, respectively) and in the spring of 2023 (67% and 66%, respectively).

Figure 8

Three-Year-Old Self-Regulation and Social Skills Skill Development Bands



For more information about Skill Development Bands for VALLS: Pre-K, please contact the VLP office.

2022-2023 VKRP Three-Year-Old Pre-kindergarten Mental Health Well-Being Data

In the fall of 2022, teachers reported being moderately, very, or extremely concerned about 23% of three-year-old children enrolled in VKRP. Elevated teacher concern for three-year-old pre-kindergarten children decreased slightly in the spring of 2023 where teachers reported being moderately, very, or extremely concerned about 20% of children.

2022-2023 VKRP Three-Year-Old Pre-kindergarten Growth Data

As with the kindergarten data, we examined trends in growth[7] of children's scores from fall 2022 to spring 2023 in mathematics, self-regulation, and social skills. Three-year-old pre-kindergarten children tended to display strong growth in mathematics skills and modest growth in self-regulation and social skills. There was variation in children's growth across all domains with some children making robust gains, while a small percentage of children lost ground from fall 2022 to spring 2023. Child demographic characteristics were associated with growth in mathematics, self-regulation, and social skills, although the size of these associations tended to be small.

2022-2023 VKRP Four-Year-Old Pre-kindergarten Key Findings

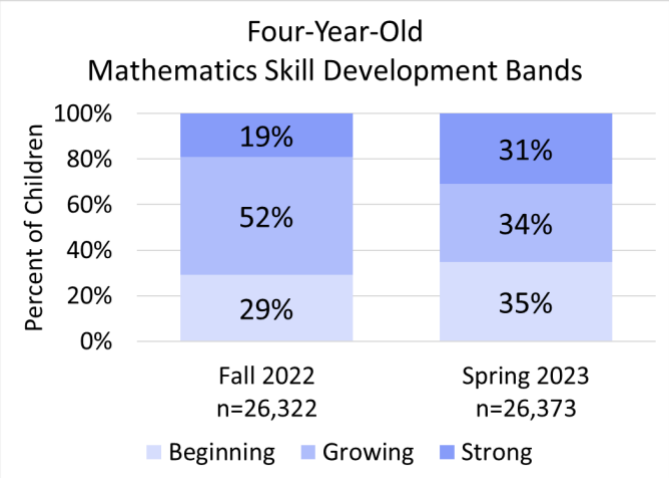
Fall 2022 and Spring 2023 Four-Year-Old VKRP Pre-kindergarten Data

Four-year-old pre-kindergarten children also displayed a range of skills across mathematics, self-regulation, and social skills in fall 2022 and spring 2023.

For mathematics, in the fall of 2022, the largest percentage of children's scores (51.8%) fell into the Growing Skill Development Band. In the spring of 2023, the largest percentage of children's scores fell into the Beginning and Growing Skill Development Bands (34.8 and 34.4% respectively).

Figure 9

Four-Year-Old Mathematics Skill Development Bands

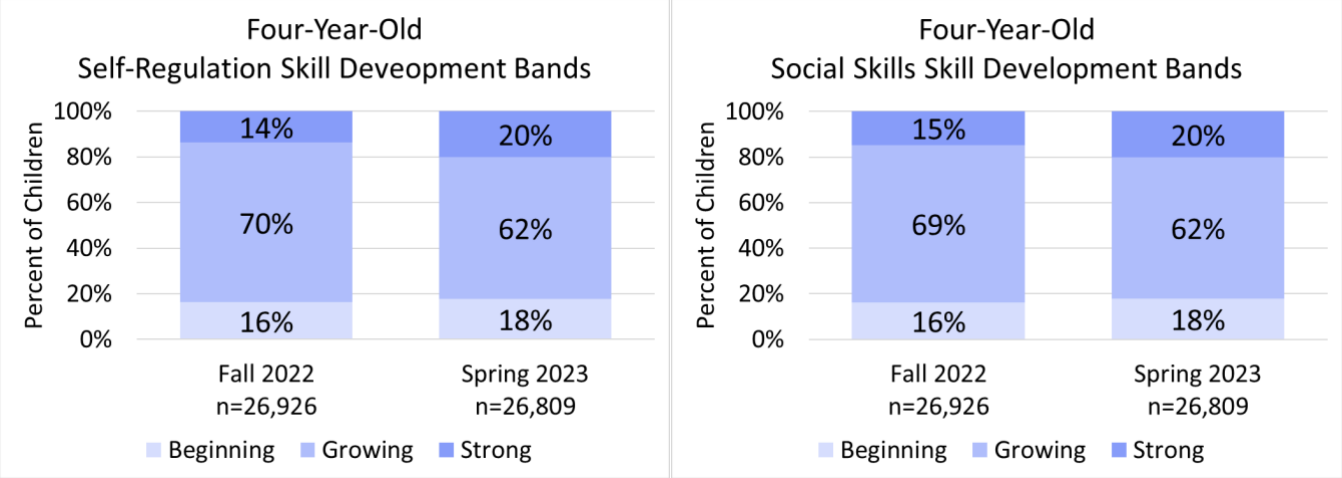


For self-regulation and social skills, the largest percentage of four-year-old children's scores fell into the Growing Skill Development Band in both the fall of 2022 (70% and 69%, respectively) and in the spring of 2023 (62% and 62%, respectively).

[7] Growth scores on the pre-kindergarten literacy screener are still being finalized. Currently pre-kindergarten literacy scores represent children's outcomes at each distinct time period (i.e., fall and spring).

Figure 10

Four-Year-Old Self-Regulation and Social Skills Skill Development Bands



2022-2023 VKRP Four-Year-Old Pre-kindergarten Mental Health Well-Being Data

In the fall of 2022, teachers reported being moderately, very, or extremely concerned about 19% of their four-year-old children. Elevated teacher concern for four-year-old pre-kindergarten children decreased slightly in the spring of 2023 where teachers reported being moderately, very, or extremely concerned about 16% of their four-year-old children.

2022-2023 VKRP Four-Year-Old Pre-kindergarten Growth Data

We examined trends in growth[8] of four-year-old children's scores from fall 2022 to spring 2023 in mathematics, self-regulation, and social skills. Four-year-old pre-kindergarten children tended to display robust growth in mathematics skills and modest growth in self-regulation and social skills. There was variation in children's growth across all domains with some children making strong gains, while a small percentage of children lost ground from fall 2022 to spring 2023. Four-year-old child demographic characteristics were associated with growth in mathematics, self-regulation, and social skills, although the size of these associations tended to be small.

Grade 1-3 Assessment Pilot

VKRP, in partnership with VDOE, began conducting a mathematics, self-regulation, social skills, and mental health well-being assessment pilot in grades one through three (1-3 Assessment Pilot) in 2022-2023. The purpose of the pilot, required by Virginia's 2022-2023 Biennial Budget, is to explore the utility of building longitudinal measures of mathematics, self-regulation, social skills, and mental health well-being that could potentially extend into grades one through three.

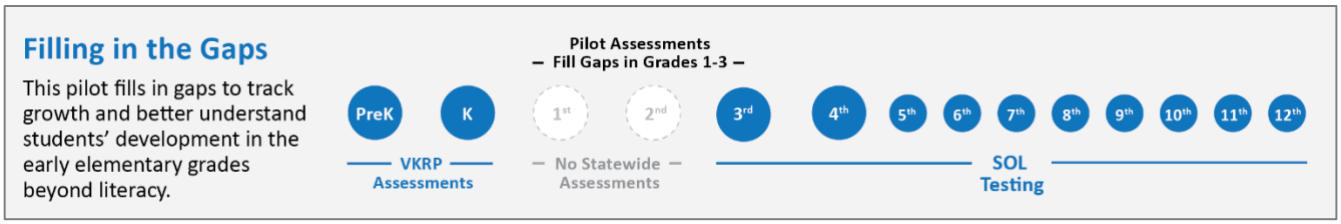
Currently, there are several gaps in existing assessments. Apart from literacy, there are no statewide assessments that measure students' early learning in these areas in grades one and two. Additionally, there are no statewide assessments that universally track students' growth within the academic year and across academic years in these

[8] Growth scores on the pre-kindergarten literacy screener are still being finalized. Currently pre-kindergarten literacy scores represent children's outcomes at each distinct time period (i.e., fall and spring).

areas from pre-kindergarten through grade three (noting there are growth assessments in mathematics starting in grade three).

Figure 11

How the Assessment Pilot Fills Gaps in Grades 1-3



Key Pilot Activity Updates

1-3 Divisions Assessment Survey

A survey was developed and distributed across Virginia school divisions to learn what assessments are currently being used in grades one through three to assess mathematics, social-emotional learning (with a particular interest in self-regulation and social skills), and mental health well-being. At least two division leaders from the 130 divisions across the state were identified, contacted, and asked to complete the survey. A total of 181 individuals across 109 divisions completed the survey. Initial results indicated that most divisions do not have an assessment to measure social-emotional learning or mental health well-being in grades one, two, or three. In contrast, most respondents reported having a division-wide assessment for mathematics in grades one, two, and three. Qualitative coding is ongoing to determine divisions' satisfaction with current assessments and whether they measure growth over time.

EMAS Item Development and Piloting

EMAS Item Development

The VKRP team formed a Mathematics Working Group whose members included key staff from VDOE's Office of STEM and Innovation Team and external consultants. The purpose of the Mathematics Working Group was to provide feedback and guidance to inform the development of the Mathematics Assessment Pilot in grades one through three, provide expertise on existing mathematics measures used nationally and/or in Virginia, and develop items to be piloted in the early elementary grades. The VKRP team worked with consultants with mathematics expertise to create 237 new items across five mathematics sub-domains (Numeracy = 52, Geometry & Measurement = 43, Patterning = 36, Computation = 84, and Probability & Statistics = 22) that were then reviewed by VDOE.

EMAS Item Piloting

The VKRP team recruited 12 school divisions to participate in an EMAS item pilot. We intentionally recruited a diverse group of divisions that included variability based on urbanicity and size. In spring 2023, VKRP hired and trained data collectors to pilot test items in first through third grade classrooms. To date, we have collected data on 1,627 students across grades one through three. Our goal is to assess 900 students per grade to enable a rigorous psychometric analysis of item properties. Item-level piloting with trained data collectors will continue into the fall of 2023.

Teacher EMAS Review

In partnership with VDOE, a sample of first, second, and third grade mathematics teachers was recruited across all eight superintendent regions to conduct a thorough review of the proposed EMAS Pilot items. A total of 40 teachers participated in the teacher review.

As part of the teacher survey and listening sessions, teachers were asked to share their thoughts about what should be considered when developing a mathematics assessment. Themes from the teacher survey and listening sessions included:

- The assessment should produce meaningful and useful data to support students' mathematics knowledge and skills and should measure growth over time.
- A direct one-on-one assessment, rather than a computerized assessment, is the most valuable testing method for mathematics.
- Physical mathematics manipulatives should be offered as part of the assessment at all grade levels.
- It is important to consider the value of additional third grade testing.

Future Directions

In the 2023-2024 school year, VKRP will:

- **Continue to support pre-kindergarten and kindergarten implementation.** VKRP will continue to support teachers', administrators', and divisions/programs' implementation of VKRP by providing in-person trainings, webinars, and online trainings and resources for teachers and school/division/program level administrators.

- **Continue to expand three- and four-year-old pre-kindergarten participation.** VKRP will continue to be available for use in publicly funded, three- and four-year-old pre-kindergarten classrooms with continued implementation support for programs required to participate (e.g., VPI, ECSE, VECF Mixed Delivery) or who are voluntarily participating and targeted outreach to those who are not yet participating but may choose to participate.

- **Continue the grades 1-3 Assessment Pilot.** Data collection will continue in the 2023-2024 school year, and data will be analyzed and used to create mathematics pilot assessments.

- **Pilot a VKRP Mid-Year Assessment.** A mid-year assessment timepoint will be piloted in three and four-year-old pre-kindergarten and kindergarten classrooms during the 2023-2024 school year. The inclusion of a mid-year timepoint for VKRP will allow teachers to better monitor students' progress over the year and to make continual instructional changes to best meet student's individual needs.

- **Continue to collaborate with VLP.** Continuing in 2023-2024, VKRP will closely collaborate with the VLP team around their development and implementation of the Virginia Language & Literacy Screener (VALLS: Pre-K) as well as the new English and Spanish versions of the kindergarten literacy screener (VALLS: Kindergarten).

- **Continue to collaborate with STREAMin^3.** The STREAMin^3 curriculum model supports skills and interactions that align to the Virginia Kindergarten Readiness Program (VKRP) and highly encourages use of VKRP as a progress monitoring tool. To support VKRP use in new STREAMin^3 programs, the VKRP and STREAMin^3 teams collaborated to encourage VKRP use and provide individualized trainings to support new programs, many of whom were small private and family childcare programs.

- **Continue development of improved and expanded reports.** VKRP includes a robust reporting system that provides a detailed snapshot of students' academic and social-emotional skills in the fall and spring of each academic year. VKRP is planning to expand its capabilities to show students' growth across a single year and provide information about students' skills across both the pre-kindergarten and kindergarten years.
- **Continue to develop enhanced resources for families.** VKRP, in collaboration with VDOE, continues to prioritize elevating families' voices and improving families' experiences with VKRP. During the summer and fall of 2023, VKRP and VDOE are co-leading a series of family focus groups to gather feedback on the VKRP Family Information Reports and VKRP family resources. Feedback from focus groups will directly inform improvements to the VKRP suite of family resources.
- **Virginia Connects for Kids.** The VKRP team continues to collaborate with VLP and the LinkB5 teams to develop a coordinated integrated data system, Virginia Connects for Kids (VAConnects). This system will integrate statewide early childhood data collection initiatives to leverage data to maximize the impact of the three separate data systems. VLP is launching in 17 school divisions this fall in VAConnects. VKRP and LinkB5 will begin to be incorporated into VAConnects this year.

Summary of Appropriations Language

The Virginia Department of Education and the University of Virginia's Center for Advanced Study of Teaching and Learning (CASTL) are providing this report to the Chairmen of House Appropriations and Senate Finance Committees to share the results of the Virginia Kindergarten Readiness Program in accordance with HB6001 Chapter 1, Acts of Assembly 2023 Special Session I, as described below:

Out of this appropriation, $3,427,000 the first year (2022-2023) and $3,652,000 the second year (2023-2024) from the general fund is provided for the Virginia Kindergarten Readiness Program.

Of this amount, $1,377,000 the first year (2022-2023) and $1,377,000 the second year (2023-2024) from the general fund is provided through the Department of Education to the University of Virginia to continue statewide implementation of the Virginia Kindergarten Readiness Program conducted in the fall, and to continue to support a post-assessment upon the conclusion of the kindergarten year.

The Department of Education shall coordinate with the University of Virginia's Center for Advanced Study of Teaching and Learning (CASTL) to ensure that all school divisions shall be required to have their kindergarten students assessed annually during the school year using the multi-dimensional kindergarten readiness assessment model. All school divisions shall be required to have their kindergarten students assessed with such a model.

Of this amount, $1,050,000 the first year (2022-2023) and $1,050,000 the second year (2023-2024) shall be allocated to University of Virginia to support implementation of a pre-kindergarten version of the Virginia Kindergarten Readiness Program for four-year-old children enrolled in publicly funded pre-kindergarten programs, as well as for piloting the use and development of a pre-kindergarten version of the Virginia Kindergarten Readiness Program for three-year-old children enrolled in publicly funded pre-kindergarten programs.

Of this amount, $350,000 the first year (2022-223) and $350,000 the second year (2023-2024) from the general fund shall be allocated to the University of Virginia's Center for Advanced Study of Teaching and Learning to provide training to school divisions annually on how to effectively use Virginia Kindergarten Readiness Program data to improve instructional practices and student learning. Such teacher-focused professional development and training shall be prioritized for the school divisions that would most benefit from state assistance in order to provide more time for classroom instruction and student learning for kindergarten and pre-kindergarten students, including both three- and four-year-old pre-kindergarten classrooms.

The Department and the University of Virginia's Center for Advanced Study of Teaching and Learning shall use the results of the multi-dimensional Virginia Kindergarten Readiness Program assessments to determine how well the Virginia Preschool Initiative (VPI) promotes readiness in all key developmental domains assessed. The Department shall submit such findings using data from the prior year's fall assessment to the Chairmen of House Appropriations and Senate Finance Committees no later than October 1 each year.

Of this amount, $650,000 the first year (2022-2023) and $875,000 the second year (2023-2024) from the general fund is provided through the Department of Education to the University of Virginia in partnership with the Department and school divisions to develop an assessment in literacy, math, social skills, and self-regulation in grades one, two, and three to help teachers, parents, and divisions identify students' strengths, deficiencies, and support student growth longitudinally. A pilot of the assessment shall be implemented in the 2023-2024 school

year and the Department shall report on the status of the pilot to the Chairs of the House Appropriations and Senate Finance and Appropriations Committees no later than October 1, 2023.

Introduction

The Virginia Kindergarten Readiness Program (VKRP) empowers Virginia's teachers and education leaders by providing a comprehensive set of assessments that shine a spotlight on pre-kindergarten and kindergarten students' learning and growth. VKRP is a Virginia standards-aligned, multi-year early learning assessment system that produces actionable information to guide decisions at the student, classroom, school/program, and division levels from the beginning of pre-kindergarten through the end of kindergarten to support student learning. VKRP provides assessments of mathematics, self-regulation, and social skills to complement Virginia's literacy screeners (Phonological Awareness Literacy Screener – Kindergarten (PALS-K) and Virginia Language & Literacy Screener: Pre-K (VALLS: Pre-K). The 2022-2023 literacy data gathered from the PALS-K and VALLS: Pre-K come directly from the Virginia Literacy Partnerships (VLP), formerly known as the PALS office. Additional information on the literacy assessments can be found on the VLP website.

From 2014 through 2018, the Center for Advanced Study of Teaching and Learning (CASTL) at the University of Virginia designed, piloted, and implemented VKRP in the fall of the kindergarten year through a voluntary rollout where, each year, an increasing number of divisions elected to administer VKRP. Virginia began statewide implementation of VKRP in kindergarten classrooms in the 2019-2020 school year.

The VKRP team developed a four-year-old pre-kindergarten extension of VKRP between 2018-2021. In the 2021-2022 school year, VKRP became available to all publicly funded pre-kindergarten programs to assess four-year-old children's skills in fall of 2021 and spring of 2022. Additionally, the VKRP team developed a three-year-old extension of VKRP, which became also available to all publicly funded pre-kindergarten programs to assess three-year-old children's skills in the 2022-2023 school year. Pre-kindergarten expansion of VKRP will continue during the 2023-2024 school year.

In this October 2023 report to the General Assembly, we report the data collected during the 2022-2023 academic year on both kindergarten and pre-kindergarten publicly funded students statewide, provide an update on the current progress of the mathematics, self-regulation, social skills, and mental health well-being assessment pilot in first through third grades (1-3 Assessment Pilot), and share next steps for the VKRP system in the 2023-2024 school year.

Defining and Measuring School Readiness With VKRP

Virginia defines school readiness as, "the capabilities of children, their families, schools, and communities that best promote student success in kindergarten and beyond."[9] Each component – students, families, schools, and communities – plays an essential role in the development of school readiness. For Virginia's youngest learners, a "ready" child is prepared socially, personally, physically, and intellectually in the areas of literacy, mathematics, science, history and social science, physical and motor development, and personal and social development.

The Virginia Kindergarten Readiness Program (VKRP) is an initiative focused on building a more comprehensive understanding of students' early skills in Virginia. As an assessment system, VKRP adds measures of mathematics, self-regulation, social skills, and mental health well-being to complement Virginia's statewide assessment of literacy skills (PALS-K and VALLS: Pre-K). Although not fully comprehensive of all the skills students

[9] Virginia Department of Education. (n.d.). School Readiness. Retrieved from https://www.doe.virginia.gov/home/showpublisheddocument/41058/638096375884800000

need to thrive in school and life, VKRP provides reliable and valid data across indicators known to predict school success in the short and long term and puts an equal emphasis on academic and social-emotional skills, including a teacher report of students' mental health well-being. Notably, students develop skills through their early experiences at home, school, and in the community. It is important to acknowledge that VKRP is *not* a measure of a school's or a community's readiness (see Appendix B for more information about how VKRP measures and defines readiness).

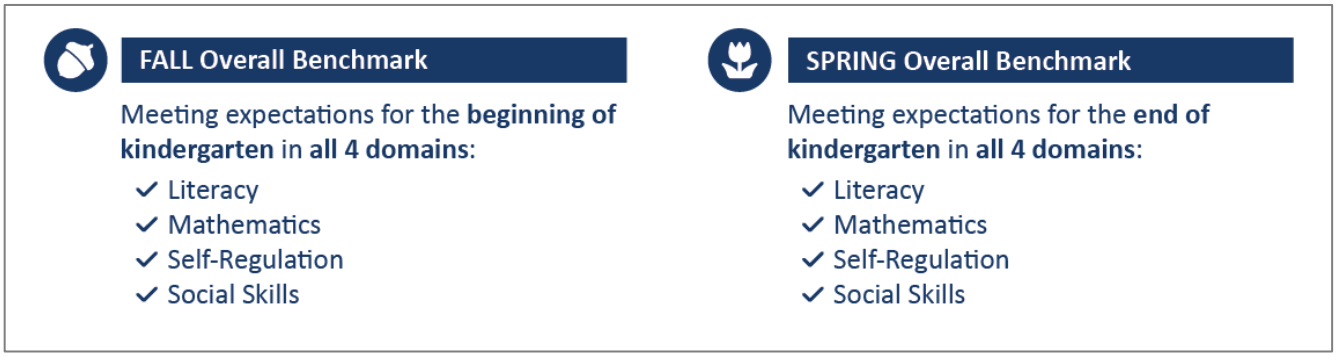
Kindergarten Benchmarks

The VKRP benchmark estimates are calculated based upon the expected skill levels of a kindergarten student at the beginning (fall) and end (spring) of the school year for each learning domain. For example, if a student's score is above the benchmark for self-regulation in the fall, they should be demonstrating the minimum self-regulation skills needed to be successful at the *beginning* of kindergarten. If a student's score is above the benchmark in self-regulation in the spring, this means that they should be demonstrating the minimum self-regulation skills needed to be successful at the *end* of kindergarten. Thus, the benchmark for self-regulation is *higher* in the spring of kindergarten than in the fall of kindergarten. This holds true for all the learning domains.

For summative purposes, kindergarten students' scores are categorized as *ready* or *meeting the overall benchmark* (fall) and *meeting the overall benchmark* (spring) if they demonstrate minimally expected skills for the fall or the spring (depending upon the data timepoint) of kindergarten for literacy, mathematics, self-regulation, and social skills. If kindergarten students' scores do not demonstrate the minimally expected skill in one or more areas at the respective timepoint (fall or spring), they are categorized as *not ready* or *below the overall benchmark* (fall) and *below the overall benchmark* (spring). A student classified as "ready" based on their VKRP scores in the fall of kindergarten is estimated to be demonstrating the minimum skills needed to be successful across all measured learning domains at the beginning of kindergarten. A student classified as "meeting the overall benchmark" based on their scores in the spring of kindergarten is estimated to be demonstrating the minimum skills across all measured learning domains needed to be successful across learning domains at the end of kindergarten and so could be considered ready for first grade.

Figure 12

Kindergarten Benchmark Expectations for Fall and Spring



More information regarding VKRP, the VKRP assessments, VKRP's history, and how it is used for summative purposes can be found on the VKRP website.

Pre-kindergarten Skill Development Bands

In the fall of 2022, VKRP designed and piloted pre-kindergarten Skill Development Bands to help teachers interpret and use their pre-kindergarten VKRP data. For the first time during the 2022-2023 school year, VKRP pre-kindergarten reports included information about where children's scores fell within three distinct Skill Development Bands: Beginning, Growing, and Strong. These score ranges are included to give guidance on where children are in their development of skills so that teachers can provide appropriate support and instruction.

Young children enter and end pre-kindergarten with a wide range of early learning skills; the mathematics, self-regulation, and social skills assessments measure children's skills along a developmental continuum. To help teachers interpret and use their pre-kindergarten VKRP data, we provide Skill Development Bands that identify children's skills in three developmental ranges: Beginning, Growing, and Strong. Separate bands are established for the fall and spring in mathematics, self-regulation, and social skills to represent children's skills as compared to expectations at a particular point in time. Skill Development Bands do not serve as benchmarks. Children's skills are not expected to be in the Strong Band by the end of the pre-kindergarten school year. Pre-kindergarten Literacy Skill Development Bands that were created by VLP for the 2022-2023 school year are not yet scaled and therefore are not included in this report. For more information on the VLP Literacy Skill Development Bands, please contact the VLP office.

Children whose skills fall within the Beginning Band are starting to develop skills in a given early learning domain and may need extra support to reach developmental goals. Children whose skills fall within the Growing Band are building towards readiness in a learning domain and may require additional supports to ensure that they remain on track to meet developmental goals. Children whose skills fall within the Strong Band have strong foundational skills in a given early learning domain and may thrive from extra challenge. All children at this age continue to need developmentally appropriate instruction and support to grow early learning skills.

Figure 13

Pre-kindergarten Skill Development Bands for Fall 2022 and Spring 2023

Skill Development Band	Interpretation Children in this band:
Beginning	Are beginning to develop skills in a given early learning domain and may need extra support.
Growing	Are building toward readiness. May require additional supports to stay on track to meet developmental goals.
Strong	Have early foundational skills and may thrive from extra challenge.

VKRP and the COVID-19 Pandemic

During the worldwide COVID-19 pandemic, young students experienced sudden and long-lasting negative stresses to their care and early learning environments negatively impacting their academic and social-emotional school readiness. Nationally and within the Commonwealth, there were missed opportunities to learn foundational early mathematics and literacy skills, pandemic-related learning losses, and adverse impacts on young students' mental health well-being. The pandemic had disproportionate impacts on students with families from low-income backgrounds and on students who resided in neighborhoods with decreased access to early

learning opportunities (World Bank, 2023[10]). Importantly, if students are not provided with opportunities to catch up and these losses are not addressed, gaps in students' early learning skills will continue to widen over time (World Bank, 2023[10]). VKRP collects data on students' early learning, social-emotional skills, and mental health well-being that can be used to understand early learning trends over time and inform recovery investments.

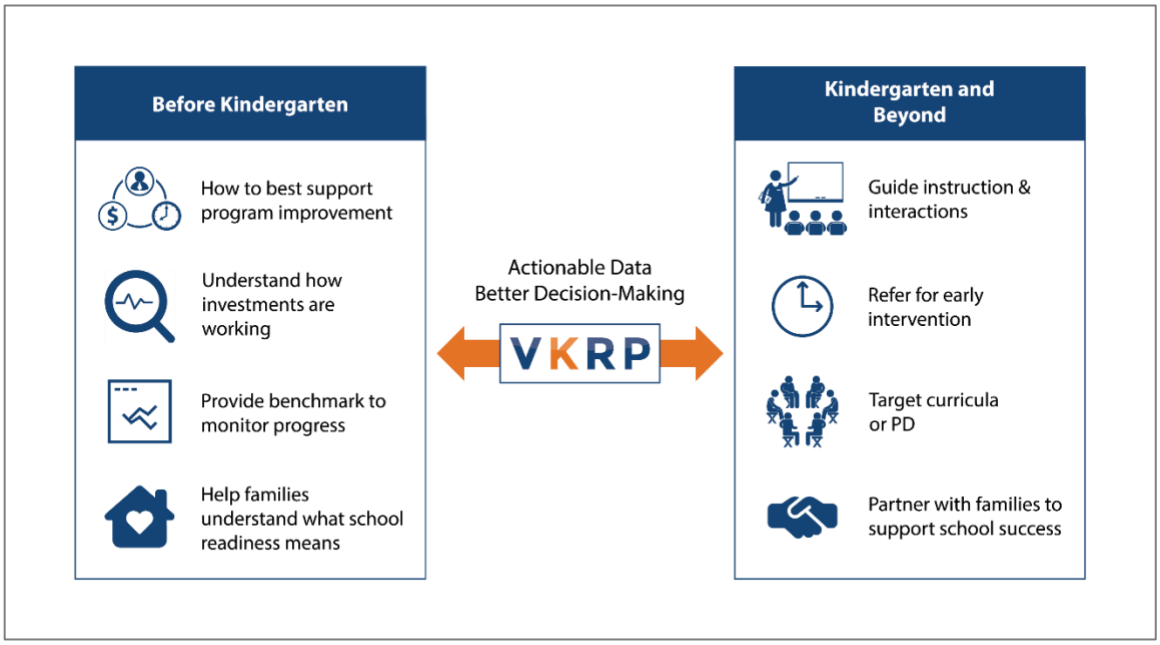
In terms of the VKRP assessments, nearly all kindergarten students statewide were assessed in-person using VKRP in fall 2022 and spring 2023, and many pre-kindergarten children in publicly funded settings were also assessed using VKRP. VKRP continues to collect data on children's mental health well-being in addition to data across the other key early learning domains.

How Statewide VKRP Data Can Be Used in Virginia

VKRP provides detailed, actionable information to guide decisions at various levels before and after kindergarten entry to support early learning. Pre-kindergarten and kindergarten VKRP data can be used at different levels and by a variety of stakeholders. VKRP provides timely and actionable data for teachers to support the implementation of individualized academic and social-emotional instruction to meet students' needs. VKRP provides information about where students are succeeding and where more targeted support is needed. For example, teachers can use the data to tailor their instruction to a student's current skill level and provide scaffolding to support their growth, refer a student for additional assessment or support, and partner with families to support students' learning at home.

Figure 14

How Statewide Data Can Be Used in Virginia



[10] Schady, N., Alaka H., Shwetlena, S., Joana, S., and Andres Y. (2023). Collapse and Recovery: How the COVID-19 Pandemic Eroded Human Capital and What to Do about It. Washington, DC: World Bank. doi:10.1596/978-1-4648-1901-8.

VKRP provides information and resources for families to support their students' early skill development and to help teachers be well-positioned to work as partners with families from the onset of a student's formal educational experience.

At a program, school, and/or division level, VKRP data can be used to better target professional development for educators based on the specific needs of the students, schools, and communities they serve. For example, division leaders can use the data to examine variability within and across divisions, individualize professional development to teachers, and align pre-kindergarten, kindergarten, and elementary curricula and instruction.

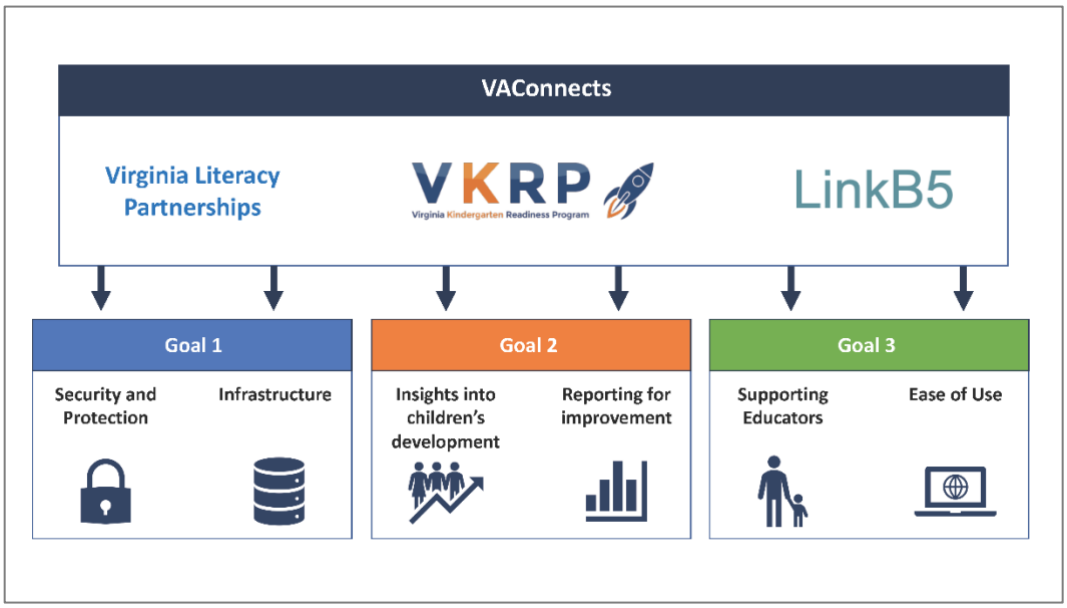
At the state level, VKRP data can inform targeted investments in divisions and programs across the state. Having statewide data allows for meaningful comparisons across programs, divisions, and regions. VKRP and other early childhood education data can be used to identify opportunity disparities, track system-level trends, and inform effective allocation of education resources.

An Integrated Approach to VDOE's Early Childhood Data Systems: Virginia Connects for Kids

In 2022, VDOE provided funding through the federal Preschool Development Grant Funds and American Rescue Plan Act to a team of researchers at CASTL to develop and implement a coordinated and integrated technology strategy and shared infrastructure between the growing state data collection initiatives (VLP, VKRP, and LinkB5) to maximize the impact and potential of these data systems. The integrated data system, Virginia Connects for Kids (VAConnects), ensures that each project can not only sustain individual growth and expansion but also work together to prioritize the integrity and continuity of data needed to inform and strengthen Virginia's sizeable investment in young learners—birth through third grade. VAConnects supports Virginia's recovery from COVID-19 by providing actionable data to inform recovery efforts. By aligning these systems, we will be able to answer critical questions about how children's early care and education experiences across the first five years link to learning and social emotional outcomes and growth in pre-kindergarten and the early elementary grades.

Figure 15

VAConnects Goals



The goals of the integrated data system are to build a robust, coordinated system with enhanced hosting infrastructure and security features; shared data warehousing reflecting effective data governance; consistent, aligned, and integrated reporting; and a more streamlined user interface. This year, we have completed the planning and design phase of VAConnects, built assessment services for VLP, and launched the pilot Virginia Language & Literacy Screener (VALLS: Kindergarten and 1-3) in 17 school divisions across Virginia.

2022-2023 VKRP Kindergarten Data

We present kindergarten data from the 2022-2023 school year in this section. In the fall of 2022 and the spring of 2023, kindergarten students across the Commonwealth completed assessments in the domains of literacy (via PALS-K) and mathematics (EMAS), and teachers rated students' self-regulation, social skills, and mental health well-being (CBRS). 2022-2023 assessment methods, demographic data, completion rates, results, and VKRP trends across time in mathematics, self-regulation, and social skills are all described below.

Background

Assessment Methods

Students were directly assessed on the Early Mathematics Assessment System (EMAS) and the Phonological Awareness Literacy Screener (PALS-K) assessment in the fall of 2022 and spring of 2023 by their classroom teachers, instructional assistants, and/or other school personnel (e.g., mathematics coaches, literacy specialists). In fall 2022 and spring 2023, teachers also completed the Child Behavior Rating Scale (CBRS), which assesses teachers' reports of students' self-regulation, social skills, and mental health well-being. Throughout the 2022-2023 year, VKRP trained school staff on how to administer the EMAS and CBRS through either in-person or remote trainings, by a trainer designated by the school division, or by completing VKRP kindergarten online training modules. Most teachers were trained on the PALS-K measure by a trainer designated by the school division. More information regarding the VKRP assessments and the history of their implementation can be found on the VKRP website.

The fall 2022 assessment windows were September 6 – November 23, 2022, for PALS-K and August 22 – November 23, 2022, for VKRP. The spring 2023 assessment windows were April 24 – June 2, 2023, for PALS-K and April 10 – May 24, 2023, for VKRP. Both PALS-K and EMAS had remote testing options available for use during both fall 2022 and spring 2023 timepoints. During the 2022-2023 school year, less than 1% of assessments were completed in a remote format.

2022-2023 VKRP Kindergarten Demographic Data

During the 2022-2023 academic year, 131 school divisions participated in VKRP. In total, 1,096 Virginia schools implemented VKRP in the fall of 2022, resulting in data from 4,982 kindergarten classrooms and 88,083 kindergarten students. In spring 2023, 1,097 schools, 5,048 kindergarten classrooms, and 90,852 kindergarten students participated in VKRP.

The student demographic data for fall 2022 and spring 2023 are presented in Table 2. The spring 2023 sample included slightly more students from low-income backgrounds (47%) compared to the fall 2022 sample (45%). This change has been observed in past school years and reflects both more complete data obtained about the family's socioeconomic status as well as changes in a family's financial needs from fall 2022 to spring 2023. There were also more students identified as having a disability in the spring of 2023 (13%) compared to the fall of 2022 (10%), reflecting additional students being identified as having a disability after the fall 2022 VKRP assessment term during the kindergarten school year.

Table 2

2022-2023 Kindergarten Demographic Summary

		Fall 2022 N=88,083	Spring 2023 N=90,852
		Mean (*SD*) or n (%)	Mean (*SD*) or n (%)
Age	Age in months on September 30, 2022	66.6 (4.3)	66.6 (4.3)
Gender	Female	41,912 (48.3)	43,534 (48.3)
	Male	44,856 (51.7)	46,652 (51.7)
	Other[11]	15 (<0.1)	13 (<0.1)
Race/Ethnicity	American Indian or Alaska Native	234 (0.3)	243 (0.3)
	Asian	5,976 (6.9)	6,276 (7.0)
	Black or African American	18,077 (20.8)	18,850 (20.9)
	Hispanic/Latino of any race	16,741 (19.3)	17,764 (19.7)
	White, not of Hispanic origin	38,824 (44.7)	39,843 (44.2)
	Native Hawaiian or other Pacific Islander	133 (0.2)	138 (0.1)
	Non-Hispanic/Latino of any race, two or more races	6,798 (7.8)	7,085 (7.8)
Family Income Status[a]	Students not from low-income backgrounds	48,207 (55.5)	47,858 (53.1)
	Students from low-income backgrounds	38,576 (44.5)	42,341 (46.9)
Pre-kindergarten Experience	Head Start	2,750 (3.2)	3,030 (3.4)
	Public pre-kindergarten	30,517 (35.1)	31,592 (35.0)
	Private pre-kindergarten	26,612 (30.7)	27,192 (30.1)
	Department of Defense child development program	428 (0.5)	459 (0.5)
	Family day home	1,762 (2.0)	1,803 (2.0)
	No pre-kindergarten	24,714 (28.5)	26,123 (29.0)
Disability[b]	Students without a disability	78,003 (90.1)	78,123 (87.1)
	Students with a disability	8,550 (9.9)	11,572 (12.9)
Language[c]	Not English language/multilingual learners (EL)	73,913 (85.2)	76,020 (84.3)
	English language/multilingual learners (EL)	12,870 (14.8)	14,179 (15.7)

[a]Source: SRC Disadvantaged Status Flag. Students are identified as having a low-income background if, at any point during the school year, the student: 1) is eligible for Free/Reduced Meals, 2) receives TANF, or 3) is eligible for Medicaid.

[b]Source: SRC Primary Disability Code. Students are identified as having a disability if any code is present *except,* "*Qualified Individual under Section 504.*"

[c]Source: Student Record Collection (SRC) EL Services Code. Students are identified as English language/multilingual learners (EL) if code is, "*Identified as EL and receives EL services*," "*Identified as EL but has refused EL services*," or "*Identified as formerly EL for each of the four years after exiting EL services*."

2022-2023 VKRP Kindergarten Completion Data

Kindergarten completion rates were above 95% for the fall of 2022 and the spring of 2023 (Table 3). EMAS and CBRS exemptions from testing, which are usually reserved for students who cannot be validly assessed due to developmental disabilities, were less than 1% of the total population of potentially assessed students.

[11] Gender code of "Non-binary" in 2022-2023 was retired and categorized as "Other" beginning FY24.

Table 3

2022-2023 Kindergarten Assessment Completion

		Fall 2022 N=88,038	Spring 2023 N=90,852
		n (%)	n (%)
PALS	Incomplete	1,517 (1.8)	797 (0.9)
	Exempt	467 (0.5)	547 (0.6)
	Complete, remote	128 (0.2)	163 (0.2)
	Complete, non-standard[a]	212 (0.2)	299 (0.4)
	Complete, standard	84,250 (97.3)	85,316 (97.9)
EMAS	Incomplete	1,341 (1.6)	860 (1.0)
	Exempt	750 (0.9)	626 (0.7)
	Complete, Spanish	991 (1.1)	702 (0.8)
	Complete, remote	107 (0.1)	86 (0.1)
	Complete, non-standard[a]	193 (0.2)	232 (0.3)
	Complete, standard	83,192 (96.1)	84,616 (97.1)
CBRS	Incomplete	1,581 (1.8)	1,801 (2.1)
	Exempt	482 (0.6)	414 (0.5)
	Complete, standard	84,511 (97.6)	84,907 (97.4)
Breakdown of assessment overlap (complete, standard, or remote only)	PALS, EMAS, CBRS	81,924 (95.6)	83,162 (96.4)
	PALS, EMAS	622 (0.7)	1,096 (1.3)
	PALS, CBRS	1,342 (1.6)	967 (1.1)
	EMAS, CBRS	722 (0.8)	426 (0.5)
	PALS	490 (0.6)	254 (0.3)
	EMAS	31 (0.1)	18 (<0.1)
	CBRS	523 (0.6)	352 (0.4)

Note. Overall and domain benchmarks are only calculated for students with a standard or remote administration.
[a]Non-standard administration includes accommodations to the administration conditions (i.e., frequent breaks, simplified directions) that do not follow the standard administration protocol.

Table 4 provides demographic characteristics of those students who were assessed across all four domains. Due to the high completion rates in both the fall of 2022 and the spring of 2023, students who were fully assessed across all four domains, as compared with those who were assessed on only one to three domains, largely resemble the overall sample except for disability status. In the fall of 2022, 10% of all students in the overall sample were identified as having a disability, while 8% of students who were fully assessed were identified as having a disability. The pattern was similar in the spring of 2022, where 13% of the overall sample were identified as having a disability, while 11% of students who were fully assessed were identified as having a disability.

Table 4

2022-2023 Fully Assessed Kindergarten Students Demographic Summary

		Fall 2022 N=81,924	Spring 2023 N=83,163
		Mean (*SD*) or n (%)	Mean (*SD*) or n (%)
Age	Age in months on September 30, 2022	66.6 (4.2)	66.6 (4.1)
Gender	Female	39,658 (48.8)	40,366 (48.8)
	Male	41,552 (51.2)	42,283 (51.2)
	Other[12]	14 (<0.1)	11 (<0.1)
Race/Ethnicity	American Indian or Alaska Native	220 (0.3)	224 (0.3)
	Asian	5,576 (6.9)	5,827 (7.1)
	Black or African American	16,961 (20.9)	17,062 (20.6)
	Hispanic/Latino of any race	14,822 (18.2)	15,882 (19.2)
	White, not of Hispanic origin	37,059 (45.6)	37,068 (44.8)
	Native Hawaiian or other Pacific Islander	123 (0.1)	122 (0.2)
	Non-Hispanic/Latino of any race, two or more races	6,463 (8.0)	6,475 (7.8)
Family Income Status[a]	Students not from low-income backgrounds	45,638 (56.2)	44,207 (53.5)
	Students from low-income backgrounds	35,586 (43.8)	38,453 (46.5)
Pre-kindergarten Experience	Head Start	2,633 (3.3)	2,827 (3.4)
	Public pre-kindergarten	27,713 (34.1)	27,972 (33.8)
	Private pre-kindergarten	26,079 (32.1)	26,173 (31.7)
	Department of Defense child development program	415 (0.5)	431 (0.5)
	Family day home	1,693 (2.1)	1,702 (2.1)
	No pre-kindergarten	22,691 (27.9)	23,555 (28.5)
Disability[b]	Students without a disability	74,600 (92.1)	73,338 (89.2)
	Students with a disability	6,400 (7.9)	8,843 (10.8)
Language[c]	Not English language/multilingual learners (EL)	70,264 (86.5)	70,198 (84.9)
	English language/multilingual learners (EL)	10,960 (13.5)	12,462 (15.1)

[a]Source: SRC Disadvantaged Status Flag. Students are identified as having a low-income background if, at any point during the school year, the student: 1) is eligible for Free/Reduced Meals, 2) receives TANF, or 3) is eligible for Medicaid.

[b]Source: SRC Primary Disability Code. Students are identified as having a disability if any code is present *except,* "*Qualified Individual under Section 504.*"

[c]Source: Student Record Collection (SRC) EL Services Code. Students are identified as English language/multilingual learners (EL) if code is, "*Identified as EL and receives EL services*," "*Identified as EL but has refused EL services*," or "*Identified as formerly EL for each of the four years after exiting EL services*."

Table 5 provides descriptive information on the means across all four domains in the fall and spring of the 2022-2023 school year. Table 5 also provides information on the number of students who were meeting or below the overall benchmark across the four domains in fall 2022 and spring 2023.

[12] Gender code of "Non-binary" in 2022-2023 was retired and categorized as "Other" beginning FY24.

Table 5

2022-2023 Kindergarten Assessment Descriptive Data

		Fall 2022 N=88,083			Spring 2023 N=90,852		
		Min	Max	Mean (*SD*)	Min	Max	Mean (*SD*)
Literacy	PALS Summed Score	0	92	51.4 (24.8)	3	95	87.5 (14.0)
Mathematics	EMAS Scaled Score	296	830	592.8 (77.2)	332	872	712.7 (87.8)
Social-Emotional	CBRS Self-Regulation Mean Score	1.00	5.00	3.68 (0.84)	1.00	5.00	3.90 (0.82)
	CBRS Social Skills Mean Score	1.00	5.00	4.24 (0.67)	1.00	5.00	4.33 (0.68)
	CBRS Well-Being Mean Score	1.00	5.00	4.32 (0.62)	1.00	5.00	4.40 (0.60)
		n (%)			n (%)		
Literacy	Met benchmark	64,807 (76.8)			71,392 (83.5)		
	Below benchmark	19,571 (23.2)			14,087 (16.5)		
Mathematics	Met benchmark	66,026 (79.3)			65,966 (77.9)		
	Below benchmark	17,273 (20.7)			18,737 (22.1)		
Self-Regulation	Met benchmark	71,208 (84.3)			69,220 (81.5)		
	Below benchmark	13,303 (15.7)			15,687 (18.5)		
Social Skills	Met benchmark	70,256 (83.1)			66,333 (78.1)		
	Below benchmark	14,255 (16.9)			18,574 (21.9)		
Overall	Met benchmark	48,868 (59.7)			48,850 (58.7)		
	Below benchmark	33,056 (40.3)			34,313 (41.3)		

2022-2023 VKRP Kindergarten Overall and Domain Results

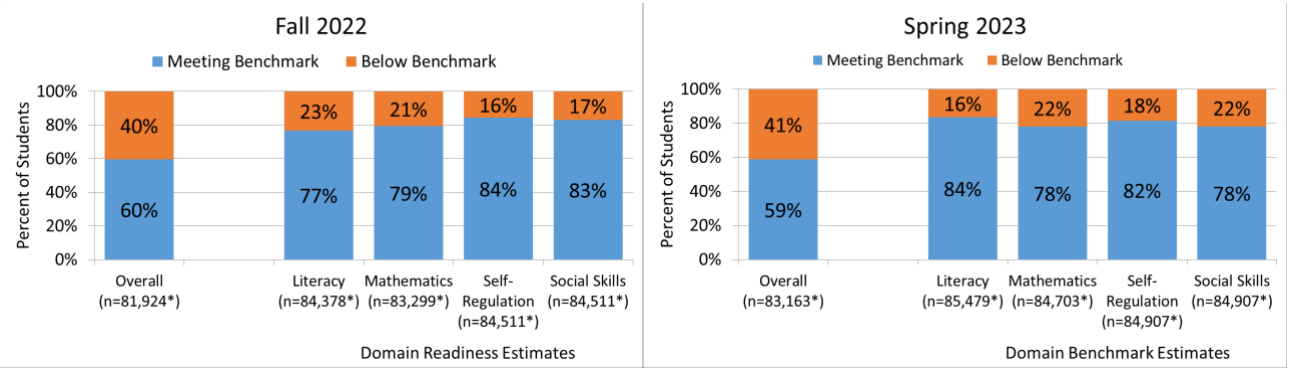
In this section, the fall 2022 and spring 2023 VKRP data for kindergarteners are presented. Data shared include the 2022-2023 overall readiness/benchmark levels of kindergarteners and those represented in specific demographic categories for both the overall readiness/benchmark levels and within the specific domains of literacy, mathematics, self-regulation, and social skills.

Benchmark estimates for the 2022-2023 school year are provided in Figure 16. **The data from the 2022-2023 academic year indicated that 40% of students' scores fell below the overall VKRP benchmark in the fall of 2022. In the spring of 2023, 41% of students' scores fell below the overall VKRP benchmark.**

When looking across fall 2022 and spring 2023, for literacy, more students' scores were below the benchmark in fall (23%) compared to spring (16%). The pattern for mathematics, self-regulation, and social skills was the opposite with a greater percentage of students' scores falling below the benchmark in spring 2023 as compared to fall 2022. In mathematics, 21% of students' scores did not meet the benchmark in the fall of 2022 compared to 22% in the spring of 2023. In self-regulation, 16% of students' scores fell below the benchmark in the fall of 2022 and 18% in the spring of 2023. In social skills, 17% of students' scores fell below the benchmark in fall 2022 and 22% in the spring of 2023.

Figure 16

Fall 2022 and Spring 2023 Kindergarten Overall and Domain Benchmark Estimates



*Note. * = All students who had data on each individual measure were included to obtain these estimates.*

2022-2023 Variability in Benchmark Estimates Disaggregated by Student Characteristics

In this section, we disaggregate the benchmark data in fall of 2022 and spring of 2023 according to a variety of student characteristics. We present the breakdowns of VKRP data by pre-kindergarten experience first because this is specifically requested in the budget appropriation language. Following that, we disaggregate the VKRP data according to student disability status, English language/multilingual learner (EL) status, race, gender, and age. Associations between student characteristics and VKRP data do not provide causal evidence that a student characteristic leads to having higher or lower scores on the VKRP assessments.

Students With Public Pre-kindergarten Experience Compared to Those Who Did Not Attend Pre-kindergarten

For this breakdown, *public pre-kindergarten experience* was defined as any student who attended a pre-kindergarten program operating within the public school. This includes VPI, Title I, ECSE, and Head Start programs – both in the public school and if the public school is the fiscal agent, and locally funded public pre-kindergarten programs. *No pre-kindergarten experience* was defined as any student whose family reported that they had not had a formal classroom pre-kindergarten experience. An example of this would be if the student was at home with a parent, family member, caregiver, nanny, etc. Below, we discuss comparisons between students who attended any type of publicly supported pre-kindergarten experience with those whose families reported that their students did not attend formal pre-kindergarten.

Students assessed in the fall of 2022 who attended public pre-kindergarten were more likely to have scores categorized as meeting or exceeding the overall readiness benchmark (ready), compared to students who did not attend any pre-kindergarten (Figure 17). In the fall of 2022, 58% of students who attended public pre-kindergarten had scores meeting the overall VKRP readiness benchmark compared to 43% of students without pre-kindergarten experience meeting the overall readiness benchmark.

For the individual domains in the fall of 2022, students who attended public pre-kindergarten, compared to those who did not attend pre-kindergarten, had scores that were more likely to be categorized as ready in foundational literacy (81% compared with 59%), mathematics (80% compared with 65%), and self-regulation (83% compared to 81%) skills. For social skills, the percentage of students with public pre-kindergarten experience whose scores met the benchmark was slightly lower than students without pre-kindergarten experience (81% compared with 84%). This pattern of results for social skills has been consistent over time and is

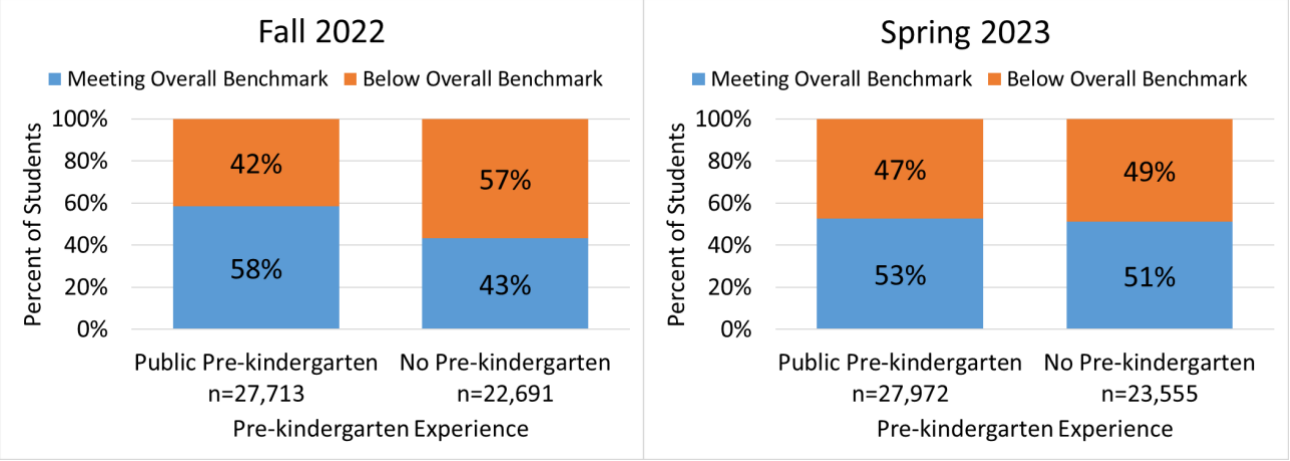
consistent with other large-scale evaluations (e.g., Lipsey et al., 2018[13]) of associations between pre-kindergarten experience and kindergarten outcomes where there are generally negligible or slightly lower social skills for children with pre-kindergarten experience compared to children without pre-kindergarten experience.

In the spring of 2023, students who attended public pre-kindergarten were slightly more likely to be categorized as meeting the overall benchmark (53%) compared to students who did not attend pre-kindergarten (51%).

With respect to the individual domains, in the spring of 2023, students who attended public pre-kindergarten compared to those who did not attend pre-kindergarten were more likely to have scores that met the benchmark in foundational literacy skills (82% compared with 79%) and mathematics (75% compared with 69%), although these differences were smaller than in the fall of 2022. For self-regulation (79% with pre-kindergarten experience compared with 80% without pre-kindergarten experience), the percentage of students with public pre-kindergarten experience who had scores that met the benchmark in spring 2023 was similar compared to students without pre-kindergarten experience. For social skills (74% with pre-kindergarten experience compared with 80% without pre-kindergarten experience), the percentage of students with public pre-kindergarten experience who had scores that met the benchmark in spring 2023 was lower compared to students without pre-kindergarten experience. These findings suggest convergence in scores between students with and without pre-kindergarten experience is consistent with large scale studies of the impacts of pre-kindergarten experience (Ansari et al., 2020[14]). Findings are also consistent with studies showing a slight advantage in social skills for students who do not attend pre-kindergarten (Zimmermann et al., 2022[15]).

Figure 17

Fall 2022 and Spring 2023 Kindergarten Overall Benchmark Status by Public Pre-kindergarten Experience



[13] Lipsey, M. W., Farran, D. C., & Durkin, K. (2018). Effects of the Tennessee Prekindergarten Program on children's achievement and behavior through third grade. Early Childhood Research Quarterly, 45, 155–176. https://doi.org/10.1016/j.ecresq.2018.03.005

[14] Ansari, A., Pianta, R. C., Whittaker, J. V., Vitiello, V. E., & Ruzek, E. A. (2020). Persistence and convergence: The end of kindergarten outcomes of pre-K graduates and their nonattending peers. Developmental Psychology, 56(11), 2027–2039. https://doi.org/10.1037/dev0001115

[15] Zimmermann, K., Yang, Q., Purtell, K., & Ansari, A. (2022). Pre-K attendance and social development: The moderating role of kindergarten classroom experiences. Infant and Child Development, e2360. https://doi.org/10.1002/icd.2360

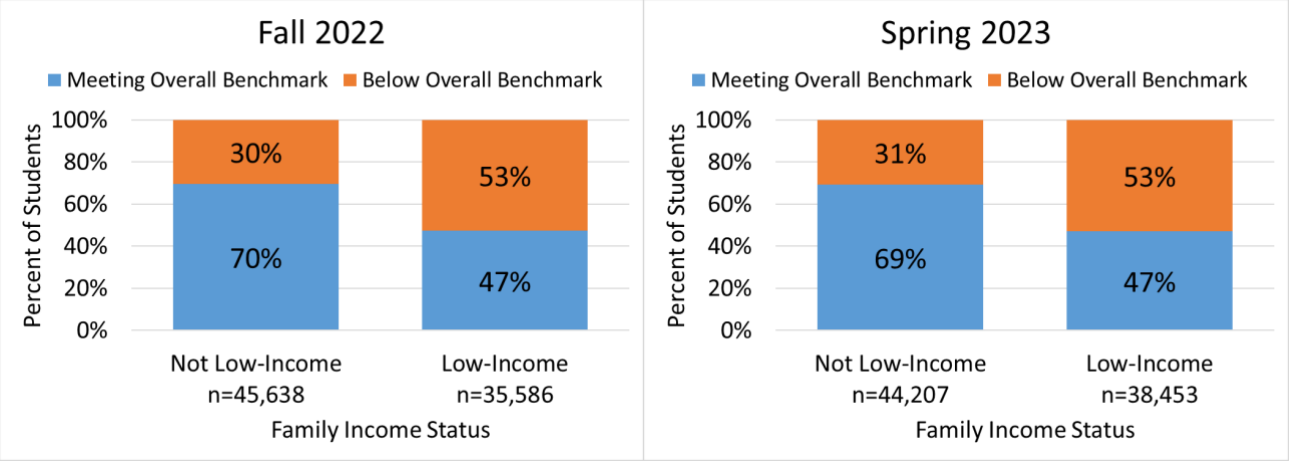
Students From Low-Income Backgrounds

We examined students' 2022-2023 benchmark scores based upon whether they came from low-income backgrounds. We categorized students as coming from low-income backgrounds using the VDOE Disadvantaged Status Flag entered in the Student Record Collection. The Disadvantaged Status Flag identifies a student as economically disadvantaged, at any point during the school year, if the student: 1) is eligible for Free/Reduced Meals, 2) receives TANF, or 3) is eligible for Medicaid. Detailed definitions for the Student Record Collection (SRC) are included in Appendix A.

For the overall benchmark, in both the fall and spring of 2022-2023, students from low-income backgrounds were significantly more likely to have scores categorized as below the overall benchmark, or not ready, compared to those coming from higher income backgrounds (Figure 18). Percentages were consistent in fall 2022 (30% below benchmark for students not from low-income backgrounds compared with 53% below benchmark for students coming from low-income backgrounds) and spring 2023 (31% below benchmark for students not from low-income backgrounds compared with 53% below benchmark for students coming from low-income backgrounds). In each of the separate learning domains, in fall 2022 and spring 2023, students from low-income backgrounds were significantly more likely to have scores categorized as below benchmark, or not ready, compared to those who were not from low-income backgrounds.

Figure 18

Fall 2022 and Spring 2023 Kindergarten Overall Benchmark Status by Low-Income Background Status



Students From Low-Income Backgrounds with Public Pre-kindergarten Experience

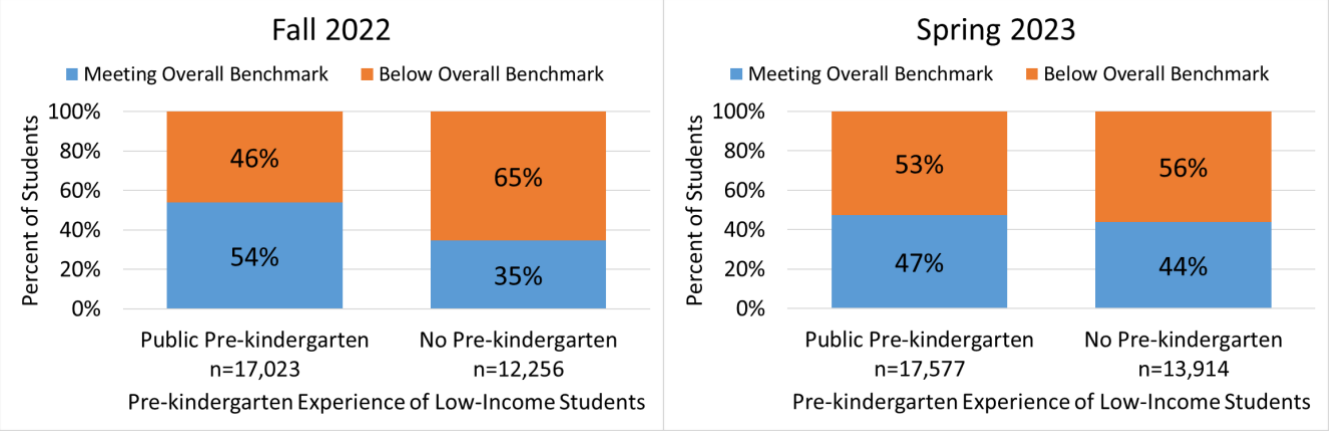
In fall of 2022 and spring of 2023, **students from low-income backgrounds who attended public pre-kindergarten were more likely to have scores that met or exceed the overall benchmark compared to students from low-income backgrounds who did not attend public pre-kindergarten (54% versus 35% and 47% versus 44%, respectively, see Figure 19).** The public pre-kindergarten advantage was larger in the fall of 2022 compared to the spring of 2023. In fall 2022 data, there was a 19% difference between the two groups. In the spring of 2023, the difference was only 3%. As mentioned above, this is consistent with recent literature suggesting that there is a "catch-up" effect whereby advantages in skills evidenced by children who attended pre-kindergarten at

the beginning of the kindergarten year, compared with children with no pre-kindergarten experience, diminish by the end of kindergarten (e.g., Ansari et al., 2020[16]).

In the fall of 2022, the pattern in overall benchmark performance holds true across all the domains *except* social skills. In the fall of 2022, students from low-income backgrounds who did not attend public pre-kindergarten were rated slightly higher on social skills. In the spring of 2023, students from low-income families who did attend public pre-kindergarten again scored higher on the literacy and mathematics assessments. For self-regulation, there were no differences between groups. For social skills, spring 2023 findings were consistent with the fall of 2022.

Figure 19

Fall 2022 and Spring 2023 Kindergarten Overall Benchmark Status by Pre-kindergarten Experience for Students from Low-Income Background Status



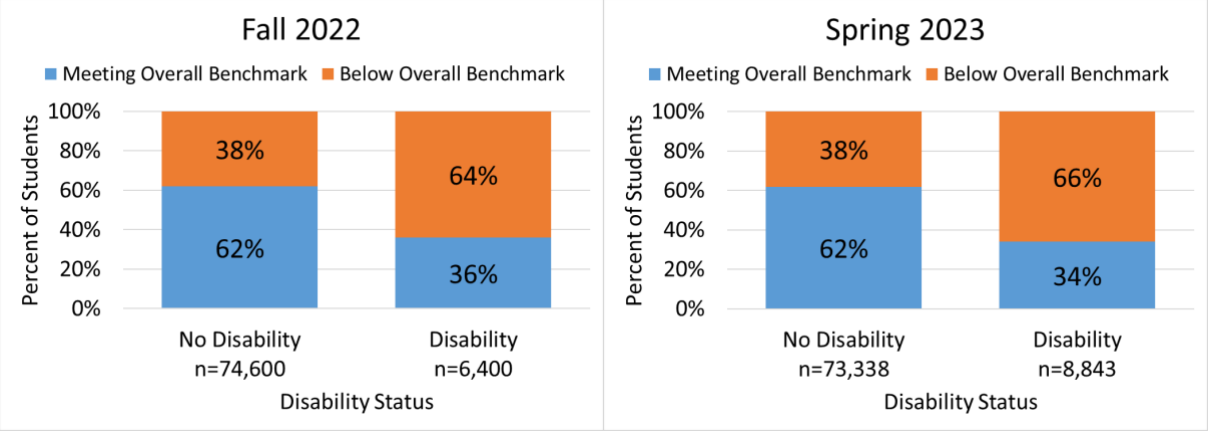
Students With Disability Status

Students with disabilities were more likely to have scores categorized as below the overall benchmark in both the fall of 2022 and in the spring of 2023 (Figure 20). In fall 2022, 64% of students with disabilities' scores were categorized as below the overall benchmark, compared with 38% of students without disabilities. In spring 2023, 66% of students with disabilities' scores were categorized as below the overall benchmark, compared to 38% students without a disability. This is also true for each of the four separate learning domains in both in fall of 2022 and in the spring of 2023.

[16] Ansari, A., Pianta, R. C., Whittaker, J. V., Vitiello, V. E., & Ruzek, E. A. (2020). Persistence and convergence: The end of kindergarten outcomes of pre-K graduates and their nonattending peers. Developmental Psychology, 56(11), 2027–2039. https://doi.org/10.1037/dev0001115

Figure 20

Fall 2022 and Spring 2023 Kindergarten Overall Benchmark Status by Disability Status

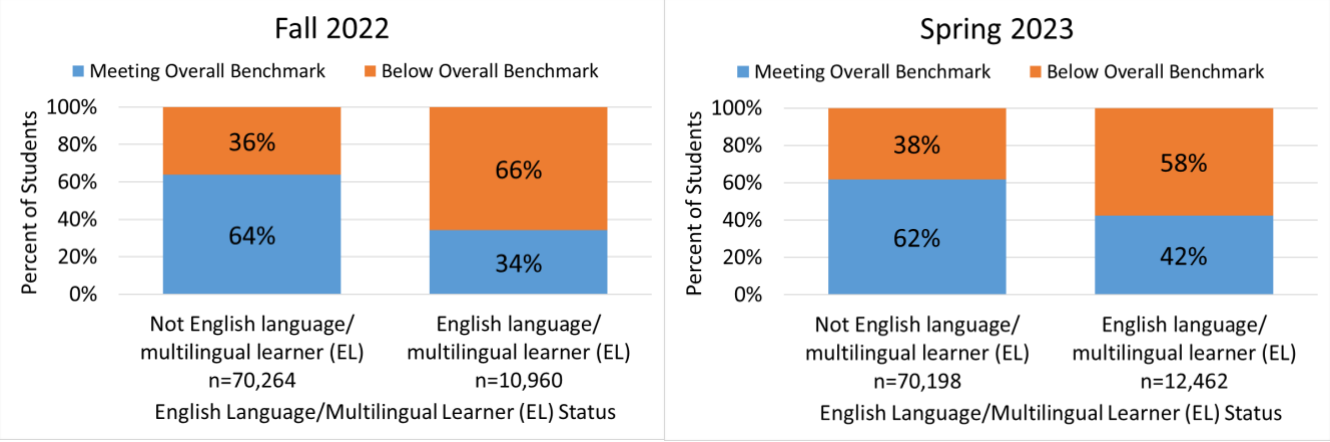


Students With English Language/Multilingual Learner (EL) Status

Students identified as English language/multilingual learners (EL) were more likely than non-EL students to have scores categorized as below the overall benchmark in both fall 2022 and spring 2023 (Figure 21). In the fall of 2022, 66% of EL students had scores below the overall readiness benchmark compared to 36% of non-EL students. This was also true in each of the separate learning domains. In spring 2023, 58% of EL students had scores below the overall benchmark compared to 38% of non-EL students. This was also true in each of the separate learning domains, *except* social skills, where the same percentage of EL and non-EL students had scores below the benchmark.

Figure 21

Fall 2022 and Spring 2023 Kindergarten Overall Benchmark Status by English Language/Multilingual Learner (EL) Status



Students' Race and Ethnic Groups

Overall benchmark status was associated with racial/ethnic identification. In 2022-2023, there was significant variability in the proportions of students performing above and below the overall benchmark across racial and ethnic groups at both timepoints (Figure 22). In fall 2022, Hispanic/Latino students of any race and Black or African American students were more likely to have scores below the overall benchmark compared to students from other racial groups. For mathematics and social skills, Hispanic/Latino students of any race and Black or African American students were more likely to have scores below the benchmark. For literacy, Hispanic/Latino students of any race and Native Hawaiian or other Pacific Islander students were more likely than other racial and ethnic groups to have scores below the literacy benchmark. For self-regulation, Black or African American and American Indian or Alaska Native students were more likely to have scores below the benchmark.

In spring 2023, Black or African American and Hispanic/Latino students of any race students were more likely to have scores below the overall benchmark compared to students from other racial groups. For mathematics in the spring of 2023, Hispanic/Latino students of any race or Black or African American students were more likely to fall below the benchmark compared to other racial groups. In spring of 2023 for self-regulation and social skills, Black or African American students were more likely to fall below the benchmark compared to other racial groups. For literacy in the spring of 2023 and similar to the fall 2022, Hispanic/Latino students of any race and Native Hawaiian or other Pacific Islander students were more likely than other racial and ethnic groups to have scores below the literacy benchmark.

When examining variability in overall benchmark performance from fall 2022 to spring 2023 based on race/ethnicity, there was a similar pattern of findings with three exceptions. First, a higher percentage of Black or African American students had scores below the overall benchmark in spring 2023 (55%) compared to fall 2022 (49%). Second, a lower percentage of Hispanic/Latino students of any race had scores below the overall benchmark in spring 2023 (51%) compared to fall 2022 (56%). Lastly, there was a lower percentage of Native Hawaiian or other Pacific Islander students' scores below the overall benchmark in spring 2023 (31%) compared to fall 2022 (39%).

Figure 22

Fall 2022 and Spring 2023 Kindergarten Overall Benchmark Status by Race/Ethnicity

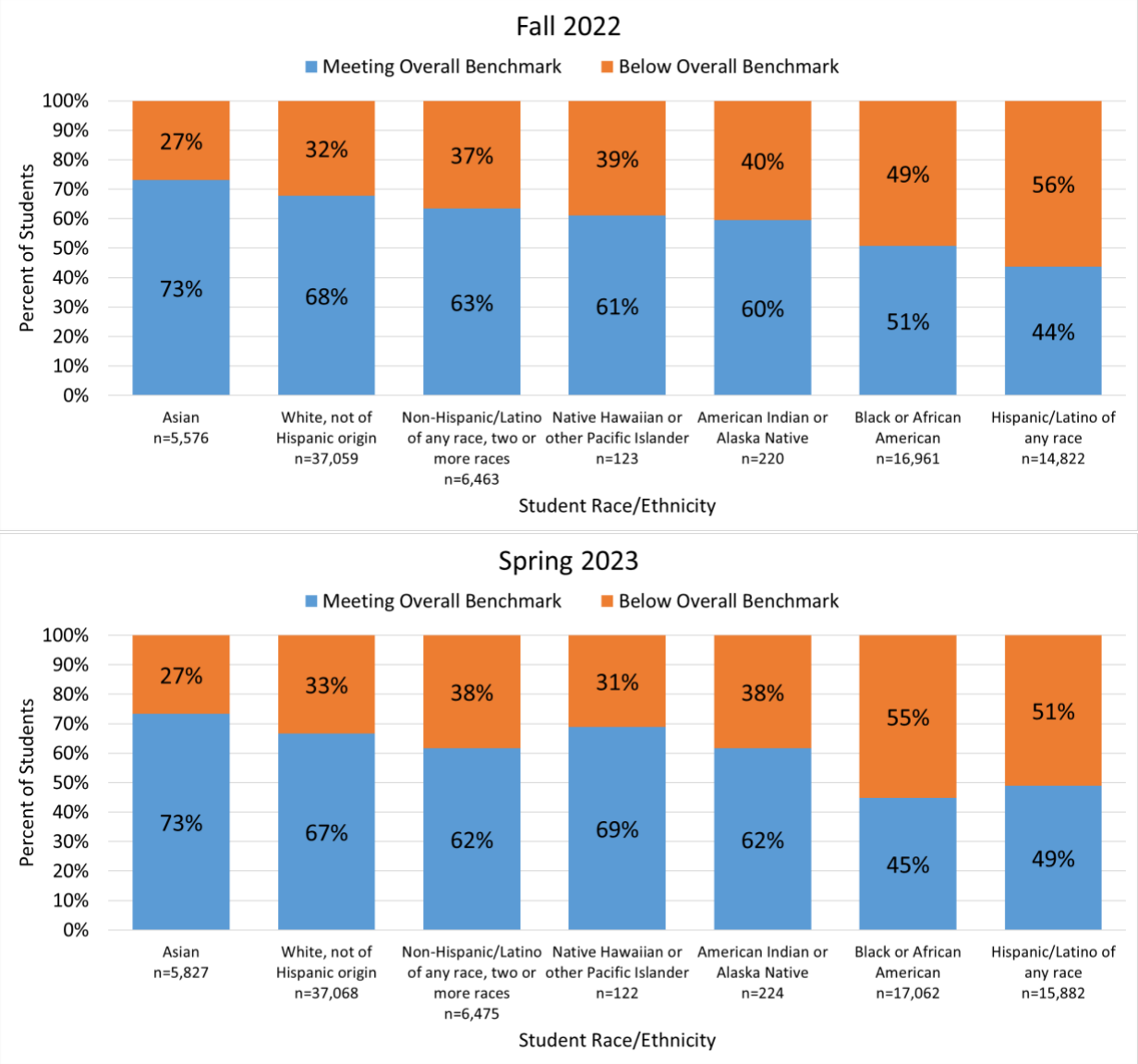


Table 6 and Table 7 show how the overlap between student race/ethnicity and those coming from a low-income background are jointly associated with proportions of students' scores falling above and below the overall benchmark in 2022-2023. For example, students who were Hispanic/Latino of any race or Black or African American were more likely to score below the overall benchmark if they came from a low-income background. These associations tended to be more pronounced in the spring of 2023.

Table 6

Fall 2022 Kindergarten Overall Benchmark Status by Low-Income Status and Race/Ethnicity

	Not Low-Income			Low-Income		
	Meeting Benchmark	Below Benchmark	Total	Meeting Benchmark	Below Benchmark	Total
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
American Indian or Alaska Native	93 (69.9)	40 (30.1)	133 (100.0)	38 (43.7)	49 (56.3)	87 (100.0)
Asian	3,107 (79.0)	824 (21.0)	3,931 (100.0)	970 (59.0)	675 (41.0)	1,645 (100.0)
Black or African American	3,428 (58.5)	2,433 (41.5)	5,861 (100.0)	5,181 (46.7)	5,919 (53.3)	11,100 (100.0)
Hispanic/Latino of any race	3,120 (51.4)	2,950 (48.6)	6,070 (100.0)	3,366 (38.5)	5,386 (61.5)	8,752 (100.0)
White, not of Hispanic origin	19,319 (74.7)	6,555 (25.3)	25,874 (100.0)	5,803 (51.9)	5,382 (48.1)	11,185 (100.0)
Native Hawaiian or other Pacific Islander	47 (58.0)	34 (42.0)	81 (100.0)	28 (66.7)	14 (33.3)	42 (100.0)
Non-Hispanic/Latino of any race, two or more races	2,666 (72.3)	1,022 (27.7)	3,688 (100.0)	1,431 (51.6)	1,344 (48.4)	2,775 (100.0)
Total	**31,780 (69.6)**	**13,858 (30.4)**	**45,638 (100.0)**	**16,817 (47.3)**	**18,769 (52.7)**	**35,586 (100.0)**

Table 7

Spring 2023 Kindergarten Overall Benchmark Status by Low-Income Status and Race/Ethnicity

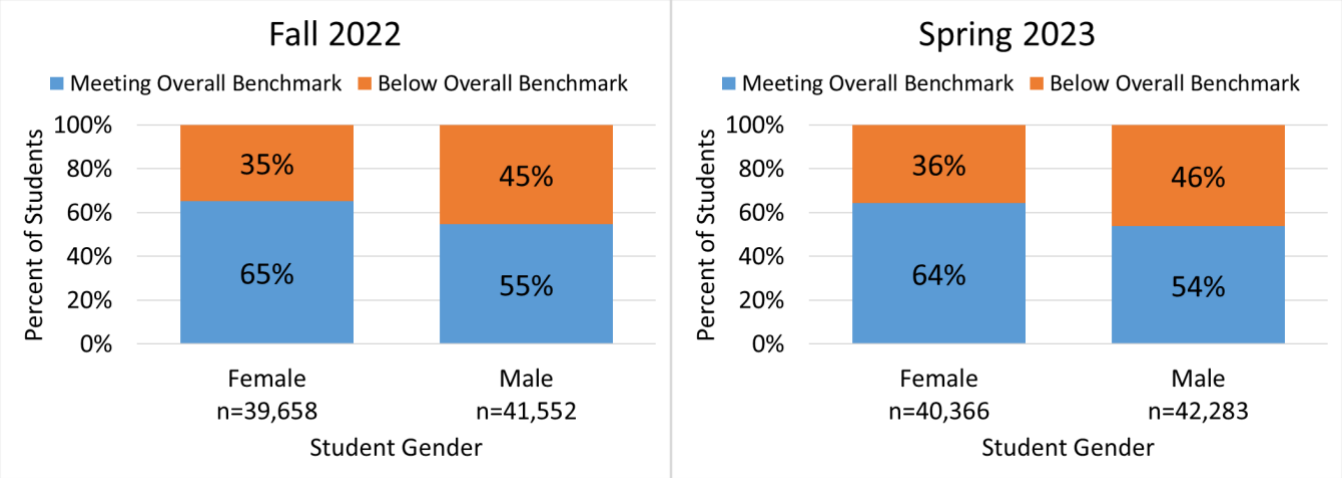
	Not Low-Income			Low-Income		
	Meeting Benchmark	Below Benchmark	Total	Meeting Benchmark	Below Benchmark	Total
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
American Indian or Alaska Native	99 (77.3)	29 (22.7)	128 (100.0)	39 (40.6)	57 (59.4)	96 (100.0)
Asian	3,156 (78.9)	846 (21.1)	4,002 (100.0)	1,118 (61.3)	707 (38.7)	1,825 (100.0)
Black or African American	2,880 (55.0)	2,357 (45.0)	5,237 (100.0)	4,773 (40.4)	7,052 (59.6)	11,825 (100.0)
Hispanic/Latino of any race	3,391 (56.4)	2,617 (43.6)	6,008 (100.0)	4,386 (44.4)	5,488 (55.6)	9,874 (100.0)
White, not of Hispanic origin	18,500 (73.2)	6,758 (26.8)	25,258 (100.0)	6,230 (52.8)	5,580 (47.2)	11,810 (100.0)
Native Hawaiian or other Pacific Islander	49 (68.1)	23 (31.9)	72 (100.0)	35 (70.0)	15 (30.0)	50 (100.0)
Non-Hispanic/Latino of any race, two or more races	2,512 (71.7)	990 (28.3)	3,502 (100.0)	1,482 (49.8)	1,491 (50.2)	2,973 (100.0)
Total	**30,587 (69.2)**	**13,620 (30.8)**	**44,207 (100.0)**	**18,063 (47.0)**	**20,390 (53.0)**	**38,453 (100.0)**

Student Sex/Gender[17]

In both fall 2022 and spring 2023, a larger percentage of kindergarten male students scored below the overall benchmark compared to female students (Figure 23). This was true for all domains in the fall of 2022 and spring of 2023. The differences between males and females were most pronounced in the areas of self-regulation and social skills.

Figure 23

Fall 2022 and Spring 2023 Kindergarten Overall Benchmark Status by Gender



Students' Age

In both fall 2022 and spring 2023, a larger percentage of younger students compared with older students had scores below the overall benchmark and below the benchmark in each of the domains.

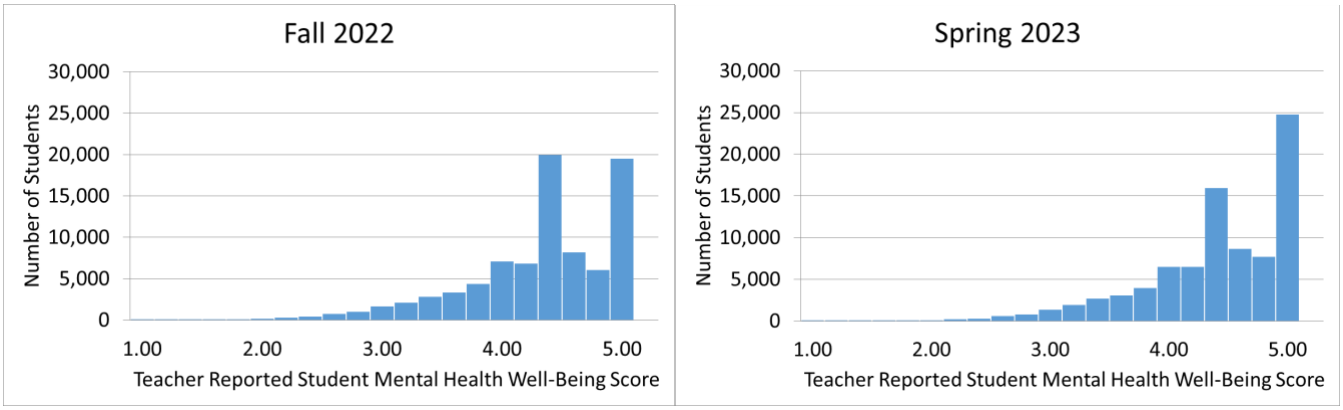
2022-2023 VKRP Kindergarten Students' Mental Health Well-Being Data

In response to the COVID-19 pandemic and beginning in the 2020-2021 school year, VKRP added new reporting items to better understand teachers' perceptions of students' mental health well-being. These Mental Health Well-being Items capture the teachers' perceptions of students' behaviors and feelings related to mental health well-being. Items include "adapts when things change; goes with the flow" and "calms down after being upset, frustrated, or angry." Items are rated by the kindergarten classroom teacher on a scale of 1 to 5, with higher scores indicating greater mental health well-being. A composite score is created by averaging the mental health well-being item scores. Additionally, there is a single item where teachers are asked to rate their level of concern for each student's social-emotional well-being on a scale of 1 ("not at all") to 5 ("extremely"). The average overall mental health well-being score was 4.32 out of 5 (*SD*= 0.62) in the fall of 2022 and 4.40 out of 5 (*SD*= 0.60) in the spring of 2023 (Table 5).

[17] Gender code of "Non-binary" in 2022-2023 was retired and categorized as "Other" beginning FY24. Given the small n of this group, "Other" is not included this year in the demographic data breakdowns.

Figure 24

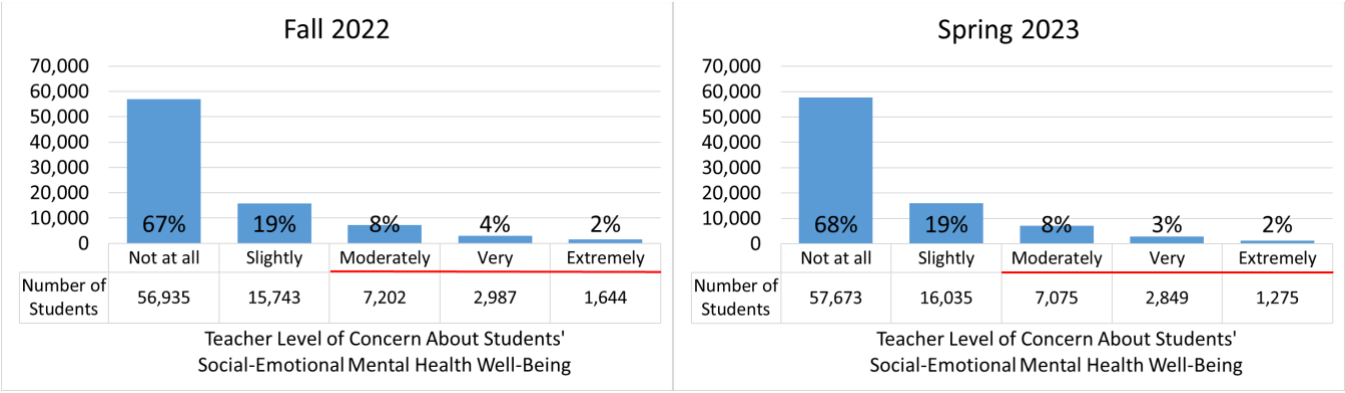
Fall 2022 and Spring 2023 Kindergarten Mental Health Well-Being Composite Score



Teachers reported that most students had high levels of mental health well-being based on the composite score in 2022-2023. Based on the teacher concern item, kindergarten teachers reported to be moderately, very, or extremely concerned about the social-emotional well-being of 14% of their students in the fall of 2022 and 13% of their students in the spring of 2023 (Figure 25).

Figure 25

Fall 2022 and Spring 2023 Kindergarten Teacher Concern



2022-2023 Kindergarten Students' Mental Health Well-Being and Benchmark Estimates

In both fall of 2022 and spring of 2023, students whose teachers reported concern for their mental health well-being were much more likely to not meet the overall benchmark and to be below the benchmark academically (in literacy and mathematics) and social-emotionally (in self-regulation and social skills) compared to students whose teachers did not report social-emotional well-being concern. These results indicate teacher concern is an important indicator of which students need comprehensive and intensive supports to be successful in school.

VKRP Kindergarten Benchmark Status and Growth from Fall 2022 to Spring 2023

In both fall 2022 and spring 2023, teachers administered literacy and mathematics assessments to kindergarten students and teachers completed ratings of kindergarten students' self-regulation and social skills. **The majority (86%, n = 78,447) of Virginia kindergarten students had complete data across all measures in both the fall of 2022 and the spring of 2023**.

This allowed us to answer the following questions:

- How did students shift in overall benchmark status from fall 2022 to spring 2023?
- How did students grow in mathematics, self-regulation, and social skills from fall 2022 to spring 2023?
- Are student demographic characteristics associated with growth in skills from fall 2022 to spring 2023?

Below, we present two metrics for understanding student progress or growth in the 2022-2023 school year. First, we examine students' overall benchmark status changes from fall 2022 to spring 2023 (which incorporates literacy, mathematics, self-regulation, and social skills). Second, we examine students' growth from fall 2022 to spring 2023 for mathematics, self-regulation, and social skills. The PALS-K screener was not developed as a growth measure; therefore, literacy growth is not displayed in the tables below. For this reason, literacy data are not included in the growth section. The revised state-supported literacy screener (VALLS: Kindergarten), to be implemented statewide during the 2024-2025 school year, will allow for growth to be measured. For mathematics, self-regulation, and social skills, we also include information about whether student demographic characteristics are associated with growth from fall 2022 to spring 2023.

Did Kindergarten Students Change Their Overall VKRP Benchmark Status from Fall 2022 to Spring 2023?

There are four groups that students can fall into based upon their overall benchmark status in the fall of 2022 and in the spring of 2023. The four groups are:

- Below overall benchmark fall 2022/Below overall benchmark spring 2023
- Below overall benchmark fall 2022/Met overall benchmark spring 2023
- Met overall benchmark fall 2022/Below overall benchmark spring 2023
- Met overall benchmark fall 2022/Met overall benchmark spring 2023

As a reminder, the VKRP overall benchmark estimates are calculated based upon the expected skill levels of a kindergarten student at the beginning (fall) and end (spring) of the school year for each learning domain.

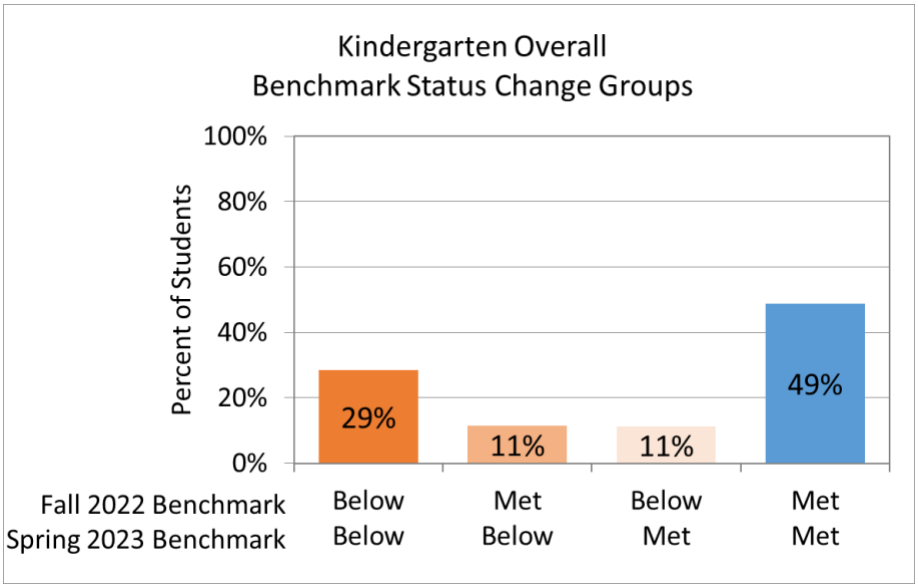
Students are included in the *below overall benchmark* group for fall 2022 and spring 2023, respectively, if they did not meet the benchmark in one or more of the four domains (e.g., literacy, mathematics, self-regulation, social skills) during either fall 2022 or spring 2023. Students are included in the *meeting overall benchmark* group for fall 2022 and spring 2023 terms, respectively, if they met the overall benchmark in all four domains during either the fall of 2022 or the spring of 2023.

As seen in Figure 26, **the largest group of kindergarten students (49%) were meeting the overall benchmark in both the fall of 2022 and spring of 2023. The second largest group of students (29%) were below the overall benchmark in both the fall of 2022 and spring of 2023. Most students (78%) remained in the same overall benchmark status group (met/met or below/below) from the fall of 2022 to the spring of 2023**. There were also two smaller groups of students whose benchmark status shifted from the fall of 2022 to the spring of 2023.

Specifically, 11% of students met the overall benchmark in fall 2022 but were below the overall benchmark in spring 2023. Conversely, 11% of students were below the overall benchmark in the fall of 2022 and met the overall benchmark in the spring of 2023.

Figure 26

Kindergarten Overall Benchmark Status Change from Fall 2022 to Spring 2023



How Did Kindergarten Students Grow in Mathematics, Self-Regulation, and Social Skills from Fall 2022 to Spring 2023?

In this section, we discuss the overall growth in scaled scores in mathematics and growth in raw averaged scores in self-regulation and social skills from fall 2022 to spring 2023. The PALS-K screener was not developed as a growth measure; therefore, literacy growth is not displayed in the tables below. The revised state-supported literacy screener (VALLS: Kindergarten), to be implemented during the 2024-2025 school year, will allow for growth to be detected.

2022-2023 VKRP Kindergarten Students' Mathematics Scaled Score Growth

The Early Mathematics Assessment System (EMAS) for kindergarten captures growth over time using scaled scores ranging from 296 to 872. In the following table and figures, each student's scaled score in the fall of 2022 is subtracted from their scaled score in the spring of 2023 to arrive at each individual student's growth score in mathematics (Table 8). These individual growth scores are then averaged to create a mean growth score at the state level for the 2022-2023 year.

Students' scores on the EMAS have a normal distribution in the fall 2022 and spring 2023. There was also a normal distribution of growth across the year. Although there was a range in growth across the year, **on average, students gained 122 points in mathematics from fall 2022 to spring 2023, demonstrating robust growth in mathematics skills.** Very few students (24 or <0.01%) showed no growth, while a small portion of students (1,268 or 1.6%) showed negative growth.

Table 8

Fall 2022 and Spring 2023 Kindergarten Mathematics Descriptive Statistics

		n	Mean (*SD*)	Range	Benchmark
Mathematics	Scaled Score, Fall	83,299	592.8 (77.2)	296 – 830	545
	Scaled Score, Spring	84,702	712.7 (87.8)	332 – 872	652
	Mean Growth	80,726	121.6 (61.6)	-295 – 473	--

2022-2023 VKRP Students' Demographic Characteristics Associated with Mathematics Scaled Score Growth

There were significant associations between students' demographic characteristics and growth in mathematics scores from fall 2022 to spring 2023. Specifically, students' age, gender, race/ethnicity, pre-kindergarten experience, disability status, and EL status were all significantly associated with growth (see Table 9). There was not a significant association between low-income background status and growth in mathematics scores. Drawing from Cohen (1988)[18], we interpret an R^2 of .001 as a small effect size, .009 as a medium effect size, and .025 as a large effect size. Significant associations ranged from small to medium in effect size. More specifically:

- **Younger students' scores showed slightly more growth than older students in mathematics scores from fall 2022 to spring 2023.** This effect size was small (R^2 = .001).
- **Males' scores showed higher mean growth (123 points) than females' mean growth scores (120 points)** in mathematics from fall 2022 to spring 2023.[19] This effect size was small (R^2 = .001).
- Students from different racial/ethnic backgrounds showed different amounts of growth in mathematics skills from fall 2022 to spring 2023. **Hispanic/Latino of any race and Native Hawaiian or other Pacific Islander students' mean growth was the greatest (130 points),** followed by Asian students (127 points), White, not of Hispanic origin students, and non-Hispanic/Latino of any race, two or more races (both with 121 points), American Indian or Alaska Native (with 120 points), and Black or African American students (114 points). This effect size was small to medium (R^2 = .007).
- **Students with no pre-kindergarten experience showed the greatest mathematics mean growth (131 points)** followed by family day home (128 points), Department of Defense child development program (123 points), private pre-kindergarten (121 points), Head Start (118 points), and public pre-kindergarten (114 points). This effect size was medium (R^2 = .012).
    - When comparing students with no pre-kindergarten experience to students who have public pre-kindergarten experience, students with no pre-kindergarten experience showed greater growth (131 points) in mathematics scores compared to students who had a public pre-kindergarten experience (114 points). This effect size was medium (R^2 = .019).
- **Students without a disability (123 points) made greater growth than students with a disability (113 points).** This effect size was small (R^2 = .003).
- **Students who were English language/multilingual learners (EL; 136 points) made greater growth than their non-EL peers (119 points).** This effect size was medium (R^2 = .009).

[18] Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences. New York, NY: Routledge Academic.

[19] Gender code of "Non-binary" in 2022-2023 was retired and categorized as "Other" beginning FY24. Given the small n of this group, "Other" is not included this year in the demographic data breakdowns.

Table 9

Kindergarten Mathematics Growth by Demographic Characteristics

	Fall Mean Score	Spring Mean Score	Mean Growth	Difference from Average Average = 122	Effect Size
Age in months	n=82,485	n=84,178	n=80,482		R^2 = .001
<= 63.15	572	693	123	+1	
63.16 – 66.37	589	711	123	+1	
66.38 – 69.62	601	721	122	+0	
69.63+	611	727	118	-4	
Gender	n=82,485	n=84,178	n=80,482		R^2 = .001
Male	594	715	123	+1	
Female	593	711	120	-2	
Race/Ethnicity	n=82,485	n=84,178	n=80,482		R^2 = .007
American Indian or Alaska Native	587	702	120	-2	
Asian	611	735	127	+5	
Black or African American	573	686	114	-8	
Hispanic/Latino of any race	558	684	130	+8	
White, not of Hispanic origin	612	733	121	-1	
Native Hawaiian or other Pacific Islander	586	717	130	+8	
Non-Hispanic/Latino of any race, two or more races	602	722	121	-1	
Public Pre-kindergarten Experience	n=51,371	n=52,651	n=49,724		R^2 = .019
No pre-kindergarten experience	561	689	131	+9	
Public pre-kindergarten experience	587	701	114	-8	
Pre-kindergarten Experience	n=82,485	n=84,178	n=80,482		R^2 = .012
Head Start	574	692	118	-4	
Public pre-kindergarten	587	701	114	-8	
Private pre-kindergarten	629	750	121	-1	
Department of Defense child development program	614	738	123	+1	
Family day home	591	717	128	+6	
No pre-kindergarten experience	561	689	131	+9	
Disability	n=82,257	n=83,694	n=80,008		R^2 = .003
Without a disability	597	719	123	+1	
With a disability	552	662	113	-9	
Language	n=82,485	n=84,178	n=80,482		R^2 = .009
Not English language/ multilingual learners (EL)	602	721	119	-3	
English language/ multilingual learners (EL)	536	667	136	+14	

Interpreting Kindergarten Students' Growth in Self-Regulation and Social Skills Using the CBRS

The Child Behavior Rating Scale (CBRS) measures teacher reports of students' self-regulation and social skills with scores ranging from 1 to 5 (never, rarely, sometimes, frequently, always). The CBRS uses the same items and the same rating scale across grades, and in fall and spring within a grade. The CBRS captures students' growth in self-regulation and social skills over time using averaged raw scores.

When teachers rate a student's skills in self-regulation and social skills, they do so in relation to their expectations of what students should be able to do in their classroom at a particular point in time. Therefore, we expect gains in scores from fall to spring to be positive but modest. For example, consider the following item on the CBRS self-regulation scale: "Completes tasks successfully." A teacher may score a child as being able to do this frequently (a score of 4) in the fall and the spring. Thus, the growth score for that item would be zero. However, this does not mean a child did not grow in self-regulation skills in relation to this task because instructional tasks become more advanced and require greater self-regulation from fall to spring (e.g., tasks take longer, cover higher order concepts, have more steps, are expected to be done more independently). Therefore, a student would need to grow in their self-regulation skills to be able to frequently complete tasks successfully in the fall and spring.

In the following tables, each kindergarten student's average raw score in the fall of 2022 is subtracted from their average raw score in the spring of 2023 to arrive at each individual student's growth in self-regulation or social skills. These individual growth scores are then averaged to create a mean growth score at the state level. Below, we first present 2022-2023 growth in self-regulation skills followed by growth in social skills.

2022-2023 VKRP Kindergarten Students' Self-Regulation Growth

There is a range in kindergarten self-regulation scores in both the fall of 2022 and the spring of 2023. **Teachers reported small gains in students' self-regulation skills over the year and growth is normally distributed.** Additionally, the data showed that some students did make larger gains in self-regulation skills while other students lost ground relative to their fall 2022 scores.

Table 10

Fall 2022 and Spring 2023 Kindergarten Self-Regulation Descriptive Statistics

		n	Mean (*SD*)	Range	Benchmark
Self-Regulation	Average Raw Score, Fall	84,511	3.68 (0.84)	1.00 – 5.00	2.90
	Average Raw Score, Spring	84,907	3.90 (0.82)	1.00 – 5.00	3.20
	Mean Growth	81,289	0.22 (0.64)	-3.70 – 3.90	--

2022-2023 VKRP Kindergarten Students' Demographic Characteristics Associated with Growth in Self-Regulation

There were significant associations between kindergarten students' demographic characteristics and reported growth in self-regulation scores from fall 2022 to spring 2023. Specifically, students' race/ethnicity, pre-kindergarten experience, disability status, and EL status were all significantly associated with reported growth (see Table 11). There was not a significant association between age, gender, and low-income background status and reported growth in self-regulation scores. Significant associations were small in effect size. More specifically:

- Students from different racial/ethnic backgrounds showed different amounts of growth in self-regulation skills from fall 2022 to spring 2023. **Asian students showed the greatest reported growth in self-regulation scores (.30 points)**, followed by American Indian or Alaska Native (.27 points), Hispanic/Latino of any race (.26 points), non-Hispanic/Latino of any race, two or more races (.23 points), White, not of Hispanic origin (.22), Black or African American (.18 points) and Native Hawaiian or other Pacific Islander (.17 points) students from fall 2022 to spring 2023. This effect size was small (R^2 = .003).
- **Students with no pre-kindergarten experience showed the greatest reported growth in self-regulation scores (.30 points)** followed by family day home (.27 points), Department of Defense child development program (.24 points), Head Start and private pre-kindergarten (both with .20 points), and public pre-kindergarten (.18 points). This effect size was small to medium (R^2 = .006).
    - When comparing students with no pre-kindergarten experience to students who have public pre-kindergarten experience, students with no pre-kindergarten experience showed greater growth (.30 points) in self-regulation scores compared to students who had public pre-kindergarten experience (.18 points). This effect size was small to medium (R^2 = .008).
- **Students with a disability (.27 points) made slightly greater reported growth than students without a disability (.22 points).** This effect size was small (R^2 = .001).
- **Students who were English language/multilingual learners (EL; .31 points) made greater reported growth than their non-EL peers (.21 points).** This effect size was small (R^2 = .003).

Table 11

Kindergarten Self-Regulation Growth by Demographic Characteristics

	Fall Mean Score	Spring Mean Score	Mean Growth	Difference from Average Average = .22	Effect Size
Race/Ethnicity	n=83,706	n=84,374	n=81,042		R^2 = .003
American Indian or Alaska Native	3.72	3.94	0.27	+0.05	
Asian	3.81	4.11	0.30	+0.08	
Black or African American	3.51	3.69	0.18	-0.04	
Hispanic/Latino of any race	3.58	3.83	0.26	+0.04	
White, not of Hispanic origin	3.78	3.99	0.22	0.00	
Native Hawaiian or other Pacific Islander	3.83	3.99	0.17	-0.05	
Non-Hispanic/Latino of any race, two or more races	3.70	3.92	0.23	+0.01	
Public Pre-kindergarten Experience	n=52,628	n=53,070	n=50,553		R^2 = .008
No pre-kindergarten experience	3.54	3.83	0.30	+0.08	
Public pre-kindergarten experience	3.62	3.80	0.18	-0.04	
Pre-kindergarten Experience	n=83,706	n=84,374	n=81,042		R^2 = .006
Head Start	3.55	3.75	0.20	-0.02	
Public pre-kindergarten	3.62	3.80	0.18	-0.04	
Private pre-kindergarten	3.89	4.09	0.20	-0.02	
Department of Defense child development program	3.66	3.89	0.24	+0.02	
Family day home	3.70	3.97	0.27	+0.05	
No pre-kindergarten experience	3.54	3.83	0.30	+0.08	
Disability	n=83,480	n=83,891	n=80,572		R^2 = .001
Without a disability	3.74	3.97	0.22	0.00	
With a disability	3.10	3.35	0.27	+0.05	
Language	n=83,706	n=84,374	n=81,042		R^2 = .003
Not English language/ multilingual learners (EL)	3.72	3.93	0.21	-0.01	
English language/ multilingual learners (EL)	3.47	3.76	0.31	+0.09	

2022-2023 VKRP Kindergarten Students' Social Skills Growth

There is a range in kindergarten social skills scores in both fall 2022 and spring 2023. **Teachers reported small gains in students' social skills over the year 2022-2023.** Growth is normally distributed with some students making gains and others losing ground with regards to teachers' perceptions of their social skills.

Table 12

Fall 2022 and Spring 2023 Kindergarten Social Skills Descriptive Statistics

		n	Mean (*SD*)	Range	Benchmark
Social Skills	Average Raw Score, Fall	84,511	4.24 (0.67)	1.00 – 5.00	3.71
	Average Raw Score, Spring	84,907	4.33 (0.68)	1.00 – 5.00	4.00
	Mean Growth	81,289	0.09 (0.55)	-3.71 – 3.57	--

2022-2023 VKRP Kindergarten Students' Demographic Characteristics Associated with Growth in Social Skills

There were significant associations between kindergarten students' demographic characteristics and reported growth in social skills scores from fall 2022 to spring 2023. Specifically, students' race/ethnicity, pre-kindergarten experience, disability status, and EL status were all significantly associated with reported growth (see Table 13). There was not a significant association between age, gender and low-income background status and reported growth in social skills scores. Significant associations were small in effect size. More specifically:

- Students from different racial/ethnic backgrounds showed different amounts of growth in self-regulation skills from fall 2022 to spring 2023. **Asian students showed the greatest reported growth in social skills scores (.17 points)**, followed by American Indian or Alaska Native (.15 points), Hispanic/Latino of any race students (.11 points), White, not of Hispanic origin and non-Hispanic/Latino of any race, two or more races (.09 points), Black or African American students (.04 points), and Native Hawaiian or other Pacific Islander (.03 points) from fall 2022 to spring 2023. This effect size was small (R^2 = .003).
- **Reported student growth in social skills varied according to their pre-kindergarten experience.** For social skills, students with Department of Defense child development program experience (.14 points) showed the greatest reported growth in social skills scores followed by no pre-kindergarten experience (.11 points), private pre-kindergarten (.09 points), family day home (.08 points), and public pre-kindergarten and Head Start (both with .07). This effect size was small (R^2 = .001).
    - When comparing students with no pre-kindergarten experience to students who have public pre-kindergarten experience, students with no pre-kindergarten experience showed slightly greater reported growth (.11 points) in social skills scores compared to students who had public pre-kindergarten experience (.07 points). The effect size was small (R^2 = .001).
- **Students with a disability (.13 points) had greater reported growth than students without a disability (.08 points).** This effect size was small (R^2 = .001).
- **Students who were English language/multilingual learners (EL; .14 points) made greater reported growth than their non-EL peers (.08 points).** This effect size was small (R^2 = .002).

Table 13

Kindergarten Social Skills Growth by Demographic Characteristics

	Fall Mean Score	Spring Mean Score	Mean Growth	Difference from Average Average = .09	Effect Size
Race/Ethnicity	n=83,706	n=84,374	n=81,042		R^2 = .003
American Indian or Alaska Native	4.31	4.42	0.15	+0.06	
Asian	4.37	4.53	0.17	+0.08	
Black or African American	4.10	4.15	0.04	-0.05	
Hispanic/Latino of any race	4.22	4.34	0.11	+0.02	
White, not of Hispanic origin	4.29	4.38	0.09	0.00	
Native Hawaiian or other Pacific Islander	4.38	4.40	0.03	-0.06	
Non-Hispanic/Latino of any race, two or more races	4.23	4.32	0.09	0.00	
Public Pre-kindergarten Experience	n=52,628	n=53,070	n=50,553		R^2 = .001
No pre-kindergarten experience	4.24	4.35	0.11	+0.02	
Public pre-kindergarten experience	4.16	4.24	0.07	-0.02	
Pre-kindergarten Experience	n=83,706	n=84,374	n=81,042		R^2 = .001
Head Start	4.15	4.23	0.07	-0.02	
Public pre-kindergarten	4.16	4.24	0.07	-0.02	
Private pre-kindergarten	4.33	4.42	0.09	0.00	
Department of Defense child development program	4.12	4.26	0.14	+0.05	
Family day home	4.32	4.39	0.08	-0.01	
No pre-kindergarten experience	4.24	4.35	0.11	+0.02	
Disability	n=83,480	n=83,891	n=80,572		R^2 = .001
Without a disability	4.28	4.37	0.08	-0.01	
With a disability	3.85	3.99	0.13	+0.04	
Language	n=83,706	n=84,374	n=81,042		R^2 = .002
Not English language/ multilingual learners (EL)	4.25	4.33	0.08	-0.01	
English language/ multilingual learners (EL)	4.19	4.32	0.14	+0.05	

2019-2023 VKRP Kindergarten Trends Across Time

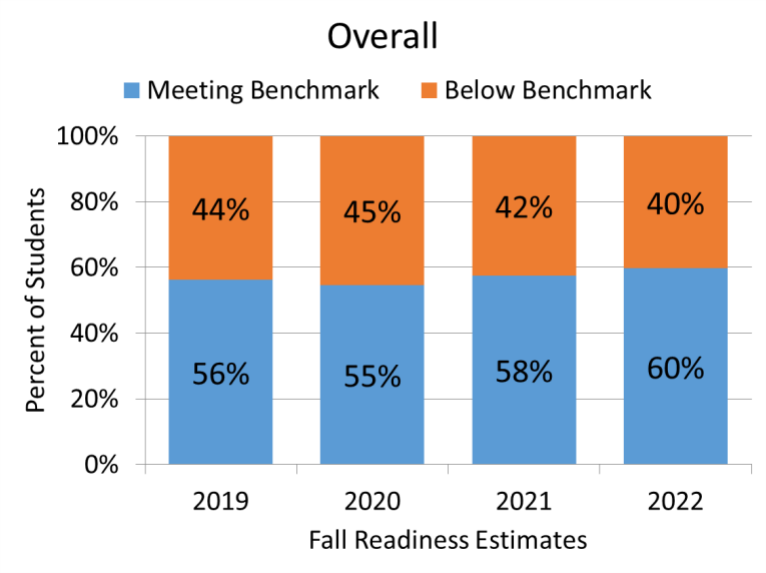
In this section, we present kindergarten trends over time across the last three years, from fall 2019 to spring 2023. Analyses include VKRP comparisons between fall timepoints of 2019, 2020, 2021, and 2022 and spring timepoints of 2021, 2022, and 2023 in terms of overall benchmark and specific skill domains in literacy, mathematics, self-regulation, and social skills.

2019-2022 Fall VKRP Kindergarten Data Over Time

Slightly more students' scores met the overall readiness benchmark in fall 2022 when compared to prior years (Figure 27). In the fall of 2019, which was the last assessment timepoint pre-pandemic and the first year of statewide fall VKRP data collection, 44% of students' scores did not meet the overall benchmark. In the fall of 2020 when the sample was significantly reduced due to school closures, changes in student enrollment, and limited availability of remote assessments, 45% of kindergarten students who were assessed on all four measures had scores below the overall readiness benchmark. In the fall of 2021, the sample of students assessed was much closer to the full population of kindergarten students enrolled in public school classrooms, and 42% of kindergarten students' scores were below the overall readiness benchmark. In fall 2022, 40% of kindergarten students' scores were below the overall readiness benchmark.

Figure 27

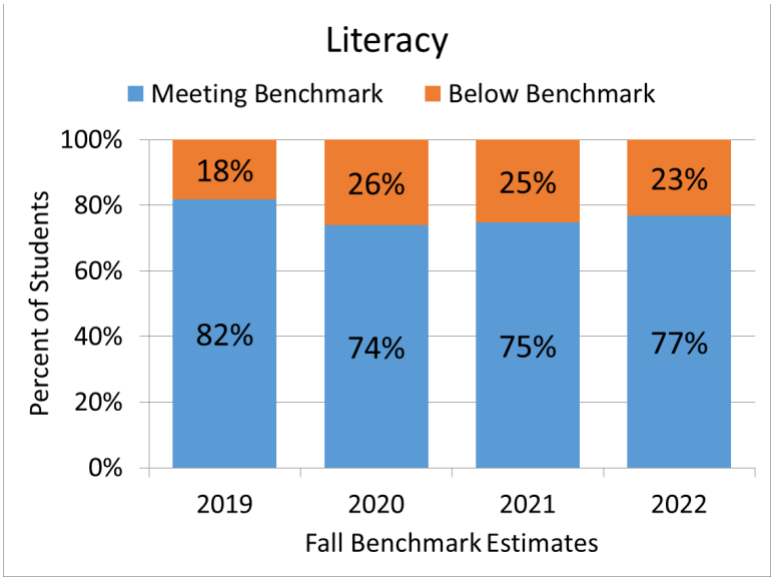
Fall Kindergarten Overall Readiness Estimates 2019-2022



With regards to the four separate learning domains, **literacy benchmark estimates have varied over time** with fewer kindergarten students' scores (18%) below the literacy benchmark in the fall of 2019 prior to COVID-19 and more kindergarten students' scores (26% and 25%) below the literacy benchmark in the fall of 2020 and 2021, respectively. In the fall of 2022, 23% of kindergarten students' scores were below the literacy benchmark (Figure 28).

Figure 28

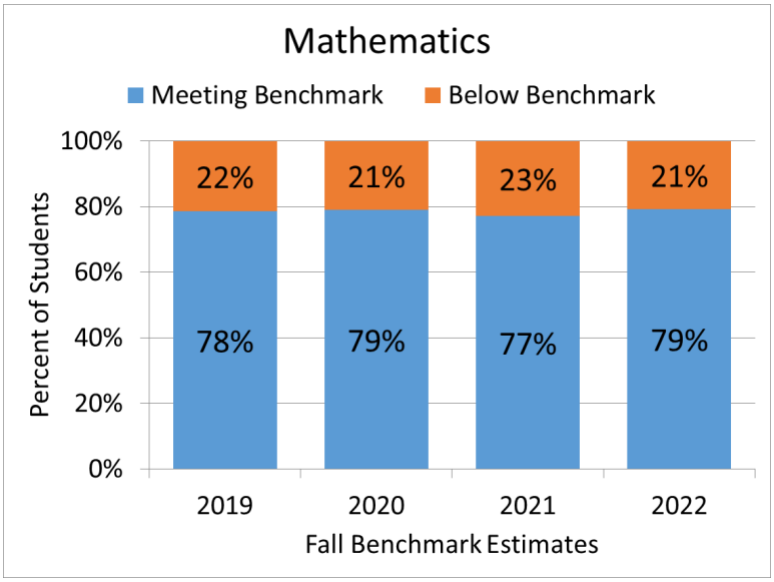
Fall Kindergarten Literacy Benchmark Estimates 2019-2022



Mathematics readiness estimates remained relatively stable over time in the fall with 22%, 21%, 23% and 21% of students' scores not meeting the mathematics benchmark in the fall of 2019, 2020, 2021, and 2022 respectively (Figure 29).

Figure 29

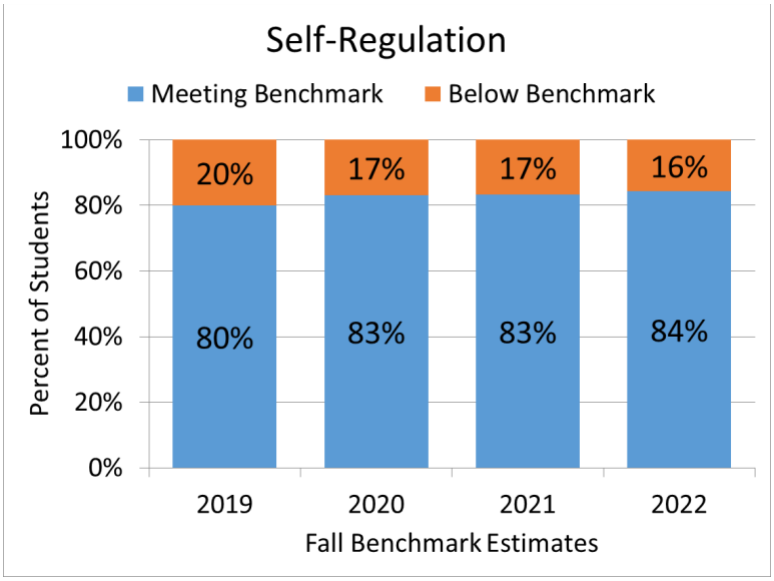
Fall Kindergarten Mathematics Readiness Estimates 2019-2022



In fall 2019, 20% of students' scores did not meet the self-regulation benchmark. The percentage of students' scores not meeting the **self-regulation readiness estimates decreased slightly in fall 2020 (17%) and then remained stable in fall 2021 (17%) and fall 2022 (16%) (Figure 30).**

Figure 30

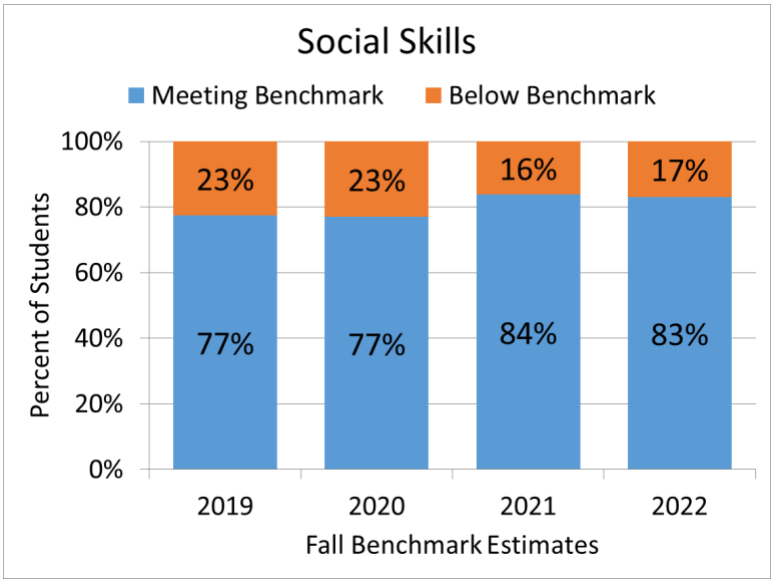
Fall Kindergarten Self-Regulation Readiness Estimates 2019-2022



Social skills readiness was stable from fall 2019 to fall 2020 with 23% of kindergarten students' scores not meeting the benchmark. The percentage of kindergarten students' scores not meeting the **social skills benchmark decreased in fall 2021 to 16% and then remained stable through the fall of 2022 (17%) (Figure 31).**

Figure 31

Fall Kindergarten Social Skills Readiness Estimates 2019-2022

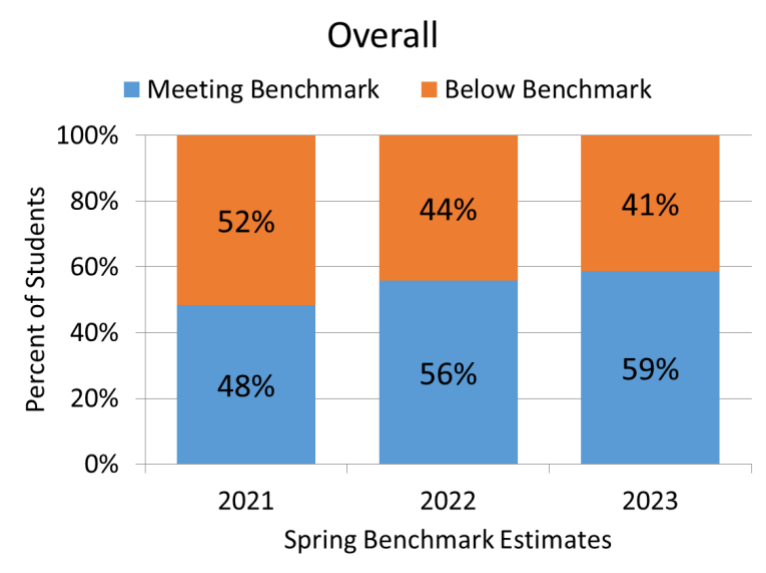


2021-2023 Spring VKRP Kindergarten Data Over Time

Spring VKRP data was not available in 2020 due to the onset of the COVID-19 pandemic and universally mandated public-school closures. Spring data can be compared between spring 2021, spring 2022, and spring 2023. In the spring of 2021, 52% of kindergarten students' scores were below the overall benchmark and, in the spring of 2022, 44% of students' scores were below the overall benchmark. This percentage has continued to decrease with 41% of kindergarten students' scores not meeting the overall benchmark in the spring of 2023. Thus, **more students ended kindergarten likely demonstrating the skills they need for first grade in the spring of 2023 and spring of 2022 compared to the spring of 2021.** We cannot make causal claims about the differences we see when looking at the spring of 2021 versus the spring of 2022 and 2023 data. However, the data may suggest some COVID recovery and the importance of in-person instruction.

Figure 32

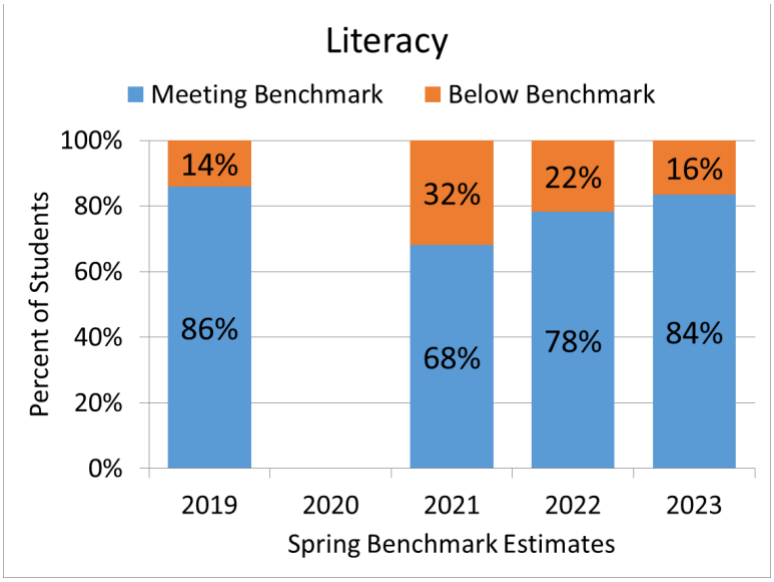
Spring Kindergarten Overall Readiness Estimates 2021-2023



As the PALS-K assessment has been implemented for many years, spring literacy benchmark estimates are available across time. For literacy, we show data for spring 2019 through spring 2023. **In spring 2019—prior to COVID-19, 14% of students scored below the literacy benchmark. The percentage rose to 32% in spring 2021 and fell to 22% in spring 2022 and to 16% in spring 2023 (Figure 33).**

Figure 33

Spring Kindergarten Literacy Benchmark Estimates 2019-2023

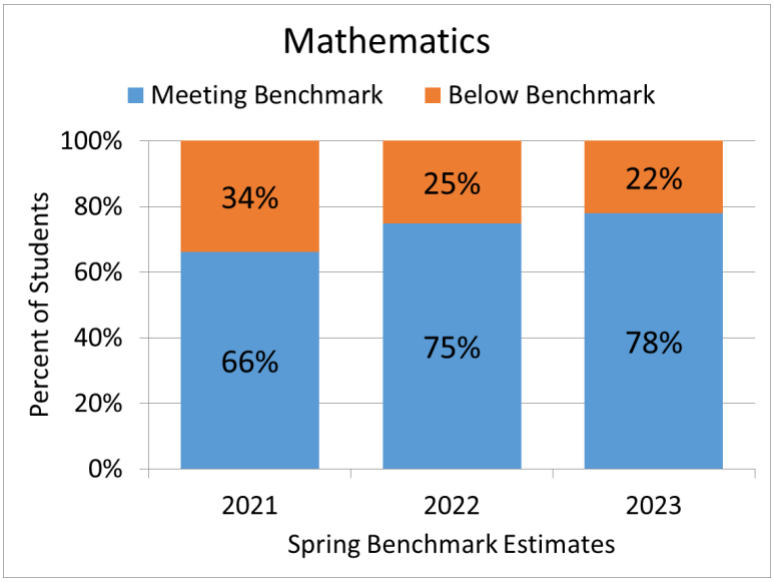


Note. VKRP and PALS assessments were not conducted in the spring of 2020 due to the COVID-19 pandemic. Fairfax County Public Schools is not represented in the Spring 2019 VKRP estimate but is represented in spring 2021 (iReady) and spring 2022 (PALS-K) VKRP estimates.

For mathematics, 34% of students' scores fell below the mathematics benchmark in the spring of 2021 and decreased to 25% below the mathematics benchmark in the spring of 2022. **The percentage of students whose scores fell below the benchmark continued to decrease with 22% of kindergarten students not meeting the spring 2023 mathematics benchmark (Figure 34).**

Figure 34

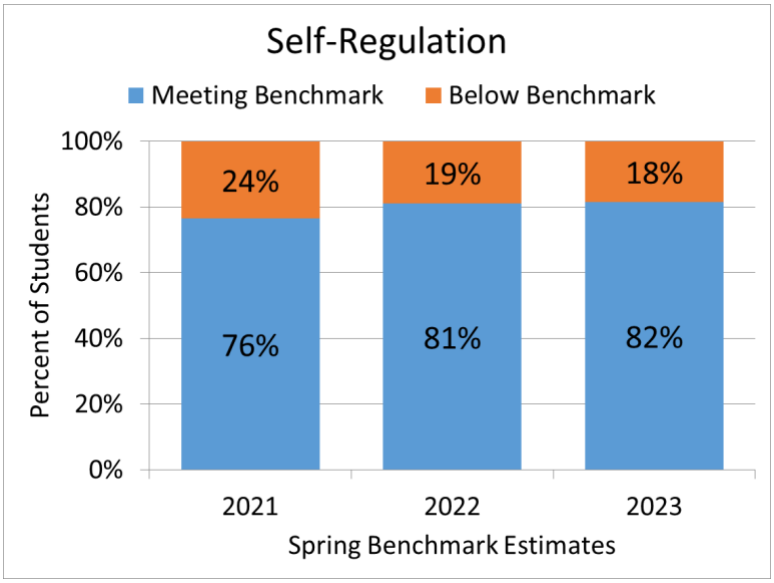
Spring Kindergarten Mathematics Readiness Estimates 2021-2023



For self-regulation, **24% of kindergarten students' scores fell below the self-regulation benchmark in spring 2021. This decreased to 19% scoring below the self-regulation benchmark in spring 2022 and 18% in spring of 2023 (Figure 35).**

Figure 35

Spring Kindergarten Self-Regulation Readiness Estimates 2021-2023

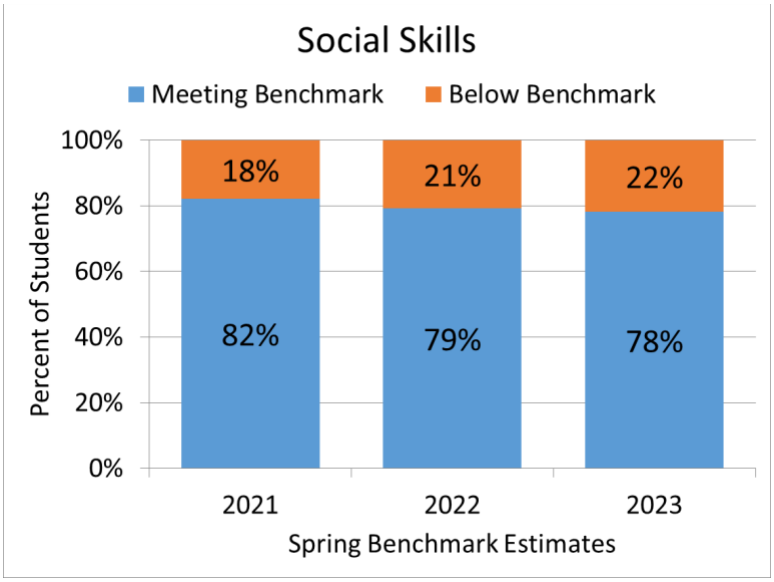


Spring social skills benchmark estimates followed a different trend as compared to the other learning domains. **The percentage of students' scores falling below the benchmark has slightly increased over time. In spring 2021, 18% of kindergarten students' scores were below the social skills benchmark compared to 21% of students' scores below the social skills benchmark in the spring of 2022 and 22% below the spring social skills benchmark in 2023 (Figure 36).** Although we cannot make causal claims, this data showing that teachers reported that fewer students had the level of social skills meeting the spring benchmark in 2023 and 2022 compared to the spring of 2021 is consistent with other research indicating teacher reports that students' social-emotional skills have been and continue to be impacted by the pandemic (e.g., Egan et al., 2021[20]).

[20] Egan, S. M., Pope, J., Moloney, M., Hoyne, C., & Beatty, C. (2021). Missing early education and care during the pandemic: The socio-emotional impact of the COVID-19 crisis on young children. Early Childhood Education Journal, 49(5), 925-934.

Figure 36

Spring Kindergarten Social Skills Readiness Estimates 2021-2023



2022-2023 VKRP in Pre-kindergarten

Background

The VKRP team developed a four-year-old pre-kindergarten extension of VKRP between 2018-2021. In the 2021-2022 school year, VKRP became available to all publicly funded pre-kindergarten programs to assess four-year-old children's skills in fall of 2021 and spring of 2022. Additionally, the VKRP team developed a three-year-old extension of VKRP. Beginning in the 2022-2023 school year, VKRP became available to all publicly funded pre-kindergarten programs to assess both three-and four-year old pre-kindergarten children in both the fall and spring. VKRP was required in VPI and VECF Mixed Delivery classrooms and was optional for other publicly funded pre-kindergarten classrooms (such as a full ECSE classroom, Head Start classroom, Title I classroom, or other locally supported pre-kindergarten classroom). Given that the pre-kindergarten VKRP is optional for some early childhood programs, we do not expect 100% participation of all publicly funded three- and four-year-old children across the state.

VKRP Pre-kindergarten Expansion

Assessment Methods

Pre-kindergarten VKRP measures children's early learning skills and growth in four domain areas: literacy (VALLS: Pre-K), mathematics (EMAS), self-regulation, and social skills (CBRS). VALLS: Pre-K and the EMAS assessments each have different versions for three-year-olds and four-year-olds. The CBRS assessment is the same for three-year-old and four-year-old children. Throughout the year 2022-2023, VKRP trained pre-kindergarten staff on how to administer the EMAS and CBRS either at an in-person or remote training, by a trainer designated by the school division or program, or by completing VKRP pre-kindergarten online training modules. Most teachers were trained on the VALLS: Pre-K by a trainer designated by the school division. More information regarding the VKRP assessments in pre-kindergarten can be found on the VKRP public website.

The fall 2022 assessment windows were September 6 – November 23, 2022, for VALLS: Pre-K and August 22 – November 23, 2022, for VKRP. The spring 2023 assessment windows were April 24 – June 2, 2023, for VALLS: Pre-K and April 10 – May 24, 2023, for VKRP. Both VALLS: Pre-K and EMAS had remote testing options available for use during both fall 2022 and spring 2023 timepoints. During the 2022-2023 school year, less than <0.1% of assessments were completed in a remote format.

VKRP Pre-kindergarten Skill Development Bands

In 2022-2023, VKRP and VLP piloted Skill Development Bands (Beginning, Growing, and Strong) to help programs and educators interpret and use their VKRP pre-kindergarten data. As a reminder, the Literacy Skill Development Bands that were created by VLP for the 2022-2023 school year are not yet scaled and therefore are not included in this report. For more information regarding the Literacy Skill Development Bands, please contact the VLP office.

Young children enter and end pre-kindergarten with a wide range of early learning skills; therefore, the mathematics, self-regulation, and social skills assessment tools measure children's skills along a developmental continuum. To help teachers interpret and use their pre-kindergarten VKRP data, we piloted the use of Skill Development Bands within VKRP reports that categorize children's skills as falling into one of three developmental ranges for mathematics, self-regulation, and social skills: Beginning, Growing, and Strong.

Separate bands were established in the fall and spring to represent children's skill development in each domain as compared to expectations at a particular point in time.

Children whose skills fall within the Beginning Band are starting to develop skills in a given early learning domain and may need extra support to reach developmental goals. Children whose skills fall within the Growing Band are building towards readiness in a learning domain as expected and may require additional supports to ensure that they remain on track to meet developmental goals. Children whose skills fall within the Strong Band have strong early foundational skills in a given early learning domain and may thrive from extra challenge. All children at this age continue to need developmentally appropriate, engaging, and stimulating instruction and support to grow their early learning skills.

For mathematics, the Skill Development Bands were developed using a statistically and empirically based approach and considered the kindergarten benchmarks. For self-regulation and social skills, the Skill Development Bands were set statistically based on standard deviations so that most children will fall within the Growing Band and smaller percentages of children would fall in the Beginning and Strong Bands.

2022-2023 VKRP Pre-kindergarten Participation by Funding Source

The pre-kindergarten funding for any child enrolled in programs that are locally, state, or federally funded is reported to VDOE through the Student Record Collection (SRC). Demographic information including pre-kindergarten funding code is merged with VKRP pre-kindergarten data using the State Testing Identifier (STI), which is the only common identifier present in both data sources. VKRP serves a larger population of children than those who are assigned STI numbers; therefore, STI and associated demographic data were missing for a subset of the VKRP pre-kindergarten sample. This includes children enrolled in VECF Mixed Delivery classrooms where current efforts are underway to close information gaps.

To provide an estimate of participation by funding source which includes VECF Mixed Delivery children, available SRC data was merged with pre-kindergarten funding source codes entered into the VLP system (Appendix C). Following the merge, funding information was missing for approximately 40% of the three-year-old VKRP sample, and 10% of the VKRP four-year-old sample. Therefore, analyses that include merged funding source should be interpreted with caution (Appendix C).

The merged funding source code is presented in Table 14 and Table 15 below. **In both the fall of 2022 and spring of 2023, VPI, local funding for VPI placement, or special education funding for VPI placement had the highest participation in VKRP. In addition, over 500 children in fall 2022 and 1,100 children in the spring of 2023 were identified as having participated in VECF Mixed Delivery.**

Table 14

Fall 2022 Pre-kindergarten Funding Source Estimates

Merged Funding Source Code	Three-Year-Old Children	Four-Year-Old Children	Total Children
	n (%)	n (%)	n (%)
Head Start	521 (7.3)	2,030 (7.0)	2,551 (7.0)
VPI, local funding for VPI placement, special education funding for VPI placement	1,704 (24.0)	19,848 (68.3)	21,552 (59.6)
Special Education Preschool	856 (12.0)	1,481 (5.1)	2,337 (6.5)
Title I Preschool	436 (6.1)	658 (2.3)	1,094 (3.0)
Local funding for other public preschool	98 (1.4)	600 (2.1)	698 (1.9)
VECF Mixed Delivery	260 (3.7)	272 (0.9)	532 (1.5)
Private preschool	221 (3.1)	279 (0.9)	500 (1.4)
VA Child Care Subsidy Program	7 (0.1)	1 (<0.1)	8 (<0.1)
Missing funding information	3,007 (42.3)	3,907 (13.4)	6,914 (19.1)
Total	7,110 (100.0)	29,076 (100.0)	36,186 (100.0)

Source: SRC PK Funding Code. Children missing SRC data were categorized utilizing the PK Funding Source from the VLP system if present.

Table 15

Spring 2023 Pre-kindergarten Funding Source Estimates

Merged Funding Source Code	Three-Year-Old Children	Four-Year-Old Children	Total Children
	n (%)	n (%)	n (%)
Head Start	570 (7.7)	2,049 (7.1)	2,619 (7.2)
VPI, local funding for VPI placement, special education funding for VPI placement	1,739 (23.6)	19,938 (68.7)	21,677 (59.6)
Special Education Preschool	882 (12.0)	1,554 (5.4)	2,436 (6.7)
Title I Preschool	445 (6.0)	681 (2.3)	1,126 (3.1)
Local funding for other public preschool	129 (1.8)	607 (2.1)	736 (2.0)
VECF Mixed Delivery	600 (8.1)	574 (2.0)	1,174 (3.2)
Private preschool	191 (2.6)	231 (0.8)	422 (1.2)
VA Child Care Subsidy Program	16 (0.2)	7 (<0.1)	23 (0.1)
Missing funding information	2,801 (38.0)	3,363 (11.6)	6,164 (16.9)
Total	7,373 (100.0)	29,004 (100.0)	36,377 (100.0)

Source: SRC PK Funding Code. Children missing SRC data were categorized utilizing the PK Funding Source from the VLP system if present.

In the sections that follow, we disaggregate pre-kindergarten data by three-year-olds and four-year-olds.

2022-2023 VKRP Three-Year-Old Pre-kindergarten Data

This section includes data collected on three-year-old pre-kindergarten students for fall of 2022 and spring of 2023. Data includes three-year-old pre-kindergarten demographic information, program/classroom data, data

completion information, descriptive data, and mental health well-being data for three-year-old children assessed in the 2022-2023 academic year.

2022-2023 Three-Year-Old VKRP Pre-kindergarten Demographic Information

In the fall of 2022, 7,110 three-year-old pre-kindergarten children participated in VKRP (Table 16). A subset of that sample, 3,198 children (45%), did not have a State Testing Identifier (STI). Following a merge on STI with VDOE data, 3,421 children (48%) are missing demographic data. This is a result of missing STI numbers, and the timing at which the files are generated (i.e., children in the VKRP file may have an STI but may not appear in the VDOE demographic file because it is finalized October 1st). Therefore, in the fall of 2022, 52% of children have available demographic information. The demographic information provided from the fall of 2022 is reflective only of the 52% of children with demographic information and may not represent the demographic characteristics of the full cohort of three-year-olds who were assessed. Therefore, any analyses that include demographic information should be interpreted with caution.

For the sub-sample of children with demographic data, children were on average three years and five months old in the fall of 2022 and were racially and ethnically diverse. About thirty-five percent of the sample in the fall of 2022 were children from low-income backgrounds, which was to be expected given the eligibility requirements of the participating pre-kindergarten programs. About a third of children had a disability, and the majority were non-EL students.

The number of three-year-old pre-kindergarten children participating in the spring of 2023 increased slightly from the fall of 2022. Specifically, in the spring of 2023, 7,373 children participated in VKRP (Table 16). Of this sample, 53% had available demographic information. Racial/ethnic representation remained consistent from fall 2022 to spring 2023, but there was an 8.5% increase in the number of children from low-income backgrounds in the spring of 2023 compared to the fall of 2022. This increase is likely due to additional children enrolling in three-year-old pre-kindergarten classrooms after the start of the school year and/or increases in the number of families meeting low-income background status criteria over the course of the 2022-2023 year.

Table 16

2022-2023 Pre-kindergarten Three-Year-Old Demographic Summary

		Fall 2022 Overall Sample N=7,110 SRC Demographics n=3,689	Spring 2023 Overall Sample N=7,373 SRC Demographics n=3,912
		Mean (*SD*) or n (%)	Mean (*SD*) or n (%)
Age	Age in months on September 30, 2022	42.5 (3.5)	42.5 (3.5)
Gender	Female	1,673 (45.4)	1,773 (45.3)
	Male	2,016 (54.6)	2,139 (54.7)
	Other	-	-
Race/Ethnicity	American Indian or Alaska Native	14 (0.4)	15 (0.4)
	Asian	111 (3.0)	119 (3.0)
	Black or African American	1,390 (37.7)	1,473 (37.7)
	Hispanic/Latino of any race	662 (17.9)	704 (18.0)
	White, not of Hispanic origin	1,268 (34.4)	1,349 (34.5)
	Native Hawaiian or other Pacific Islander	-	-
	Non-Hispanic/Latino of any race, two or more races	244 (6.6)	252 (6.4)
Family Income Status[a]	Students not from low-income backgrounds	2,406 (65.2)	2,220 (56.7)
	Students from low-income backgrounds	1,283 (34.8)	1,692 (43.3)
Disability[b]	Students without a disability	2,562 (69.4)	2,583 (66.1)
	Students with a disability	1,127 (30.6)	1,327 (33.9)
Language[c]	Not English language/multilingual learners (EL)	3,688 (>99.9)	3,911 (>99.9)
	English language/multilingual learners (EL)	1 (<0.1)	1 (<0.1)
		Merged Funding Sample n=4,103	Merged Funding Sample n=4,572
Merged Funding Source Code[d]	Head Start	521 (12.7)	570 (12.5)
	VPI, local funding for VPI placement, special education funding for VPI placement	1,704 (41.5)	1,739 (38.0)
	Special Education Preschool	856 (20.9)	882 (19.3)
	Title I Preschool	436 (10.6)	445 (9.7)
	Local funding for other public preschool	98 (2.4)	129 (2.8)
	VECF Mixed Delivery	260 (6.3)	600 (13.1)
	Private	221 (5.4)	191 (4.2)
	VA Child Care Subsidy Program	7 (0.2)	16 (0.4)

[a]Source: SRC Disadvantaged Status Flag. Students are identified as having a low-income background if, at any point during the school year, the student: 1) is eligible for Free/Reduced Meals, 2) receives TANF, or 3) is eligible for Medicaid.

[b]Source: SRC Primary Disability Code. Students are identified as having a disability if any code is present *except,* "*Qualified Individual under Section 504.*"

[c]Source: Student Record Collection (SRC) EL Services Code. Students are identified as English language/multilingual learners (EL) if code is, "*Identified as EL and receives EL services*," "*Identified as EL but has refused EL services*," or "*Identified as formerly EL for each of the four years after exiting EL services*."

[d]Source: SRC PK Funding Code. Children missing SRC data were categorized utilizing the PK Funding Source from the VLP system if present.

2022-2023 Three-Year-Old VKRP Pre-kindergarten Completion Data

Over 85% of children in participating classrooms were assessed on *at least one* domain in the fall of 2022 and in the spring of 2023 (Table 17). In fall 2022, 68.6% of children had complete data on the VKRP assessments (literacy, mathematics, self-regulation, and social skills). In spring 2023, 78.2% of three-year-old pre-kindergarten children had complete VKRP data. Exemptions across assessments were rare and ranged from two to three percent in fall 2022 and three to seven percent in spring 2023.

Table 17

2022-2023 Pre-kindergarten Three-Year-Old Assessment Completion

		Fall 2022 N=7,110	Spring 2023 N=7,373
		Mean (*SD*) or n (%)	Mean (*SD*) or n (%)
Virginia Language & Literacy Screener (VALLS: Pre-K)	Incomplete	1,916 (27.0)	1,404 (19.0)
	Exempt	158 (2.2)	222 (3.0)
	Complete, remote	-	-
	Complete, non-standard[a]	-	-
	Complete, standard	5,036 (70.8)	5,747 (78.0)
EMAS	Incomplete	2,219 (31.2)	1,427 (19.4)
	Exempt	239 (3.4)	536 (7.3)
	Complete, Spanish	39 (0.5)	25 (0.3)
	Complete, remote	3 (<0.1)	-
	Complete, non-standard[a]	67 (0.9)	89 (1.2)
	Complete, standard	4,543 (63.9)	5,296 (71.8)
CBRS	Incomplete	1,262 (17.8)	993 (13.5)
	Exempt	166 (2.3)	438 (5.9)
	Complete, standard	5,682 (79.9)	5,942 (80.6)
Breakdown of assessment overlap (complete, standard, or remote only)	VALLS: Pre-K, EMAS, CBRS	4,167 (68.6)	5,063 (78.2)
	VALLS: Pre-K, EMAS	29 (0.5)	48 (0.8)
	VALLS: Pre-K, CBRS	486 (8.0)	164 (2.5)
	EMAS, CBRS	340 (5.6)	170 (2.6)
	VALLS: Pre-K	354 (5.8)	472 (7.3)
	EMAS	10 (0.2)	15 (0.2)
	CBRS	689 (11.3)	545 (8.4)

[a]Non-standard administration includes accommodations to the administration conditions (i.e., frequent breaks, simplified directions) that do not follow the standard administration protocol.

2022-2023 Three-Year-Old Pre-kindergarten Descriptive and Skill Development Band Data

In Table 18, we present descriptive data for the VALLS: Pre-K measure for literacy (mean subtask scores), EMAS (mathematics total scaled score) and CBRS (self-regulation, social skills and mental health well-being mean scores) in 2022-2023. Note that the VALLS: Pre-K does not have a total score; therefore, the mean subtask scores (e.g., name writing, letter sounds etc.) are presented. **Three-year-old children displayed a range of skills in the fall of 2022 and spring of 2023 across each of the domains-literacy, mathematics, self-regulation, and social skills.**

Table 18

2022-2023 Three-Year-Old Pre-kindergarten Assessment Descriptive Data

		Fall 2022 N=7,110	Spring 2023 N=7,373
		Mean (*SD*) or n (%)	Mean (*SD*) or n (%)
Literacy	Letter Names	10.93 (15.49)	22.90 (18.54)
	Letter Sounds	2.32 (5.10)	6.98 (8.09)
	Syllable Segmenting	4.32 (4.00)	6.41 (3.61)
	Beginning Sounds Matching	2.42 (2.80)	3.48 (3.04)
	Passage Comprehension: Retell	1.40 (1.58)	2.20 (1.79)
	Passage Comprehension: Expressive	1.40 (1.36)	2.56 (1.72)
	Passage Comprehension: Receptive	1.62 (1.38)	2.13 (1.34)
	Nonsense Sentences	2.34 (2.97)	-
	Name Writing	1.51 (1.04)	2.71 (1.53)
	Print Concepts	3.33 (2.59)	-
Mathematics	EMAS Scaled Score	448.44 (88.88)	524.84 (88.62)
Social-Emotional	CBRS Self-Regulation Mean Score	3.11 (0.87)	3.45 (0.87)
	CBRS Social Skills Mean Score	3.65 (0.75)	3.81 (0.77)
	CBRS Well-Being Mean Score	4.00 (0.69)	4.16 (0.67)

In Table 19, we provide descriptive information about the number of three-year-old pre-kindergarten children whose mathematics scores fell into each of the Skill Development Bands. **In the fall of 2022, most children's scores fell into the Beginning Band (46.5%), and in the spring of 2023, most children's scores fell into the Growing Band (40.8%).**

Table 19

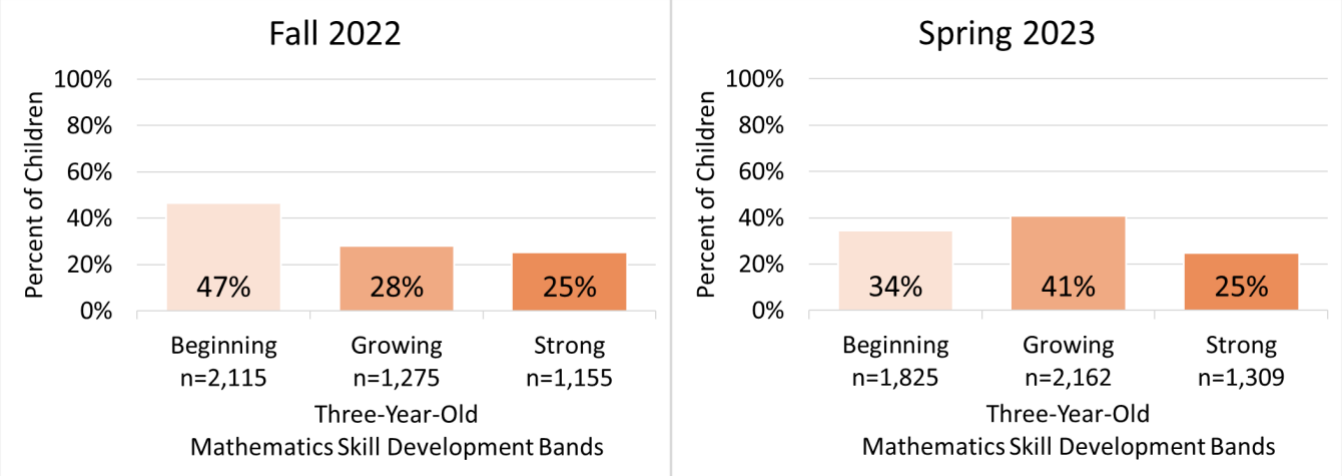
2022-2023 Three-Year-Old Pre-kindergarten Mathematics Skill Development Bands Descriptive Data

		Fall 2022			Spring 2023		
		n=4,545			n=5,296		
		Min	Max	Mean (*SD*)	Min	Max	Mean (*SD*)
Mathematics	EMAS Scaled Score	220	688	448.44 (88.88)	251	760	524.84 (88.62)
		n (%)			n (%)		
Skill Development Bands	Beginning	2,115 (46.5)			1,825 (34.5)		
	Growing	1,275 (28.1)			2,162 (40.8)		
	Strong	1,155 (25.4)			1,309 (24.7)		

Figure 37 provides a visual depiction of the percentage of three-year-old children's mathematics scores that fell into each of the Skill Development Bands in the fall of 2022 and the spring of 2023.

Figure 37

Fall 2022 and Spring 2023 Three-Year-Old Pre-kindergarten Mathematics Skill Development Bands



In Table 20, we provide descriptive information about the number of three-year-old pre-kindergarten children whose self-regulation scores fell into each of the Skill Development Bands. It is expected in pre-kindergarten that most children's self-regulation scores will fall into the Growing Band at each time point. **In both the fall 2022 and spring 2023, the majority of children's self-regulation scores fell into the Growing Band (66.3% and 66.6%, respectively).**

Table 20

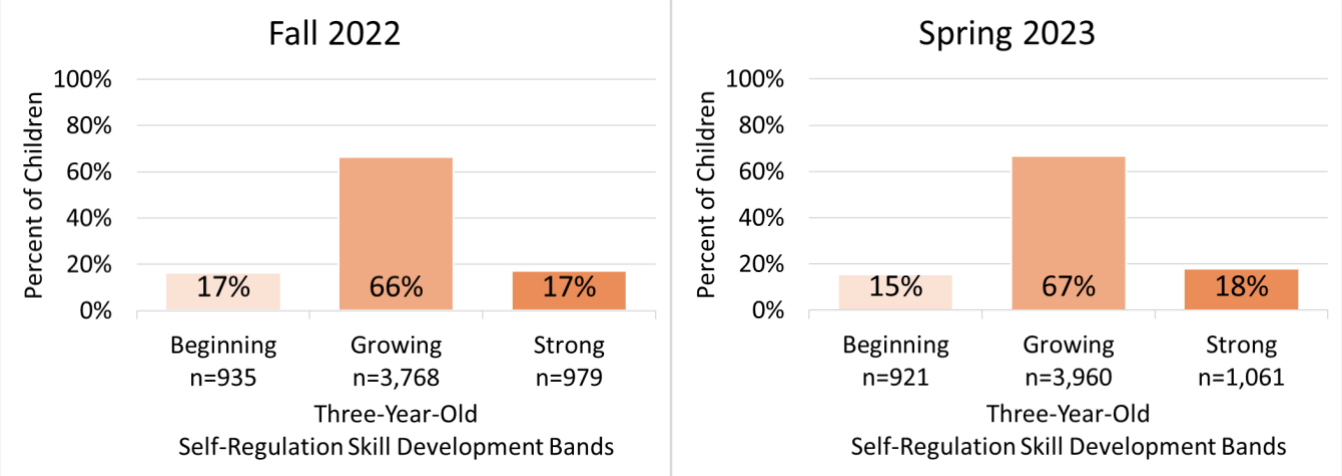
2022-2023 Three-Year-Old Pre-kindergarten Self-Regulation Skill Development Bands Descriptive Data

		Fall 2022			Spring 2023		
		n=5,682			n=5,942		
		Min	Max	Mean (*SD*)	Min	Max	Mean (*SD*)
Self-Regulation	CBRS Mean Score	1.00	5.00	3.11 (0.87)	1.00	5.00	3.45 (0.87)
		n (%)			n (%)		
Skill Development Bands	Beginning	935 (16.5)			921 (15.5)		
	Growing	3,768 (66.3)			3,960 (66.6)		
	Strong	979 (17.2)			1,061 (17.9)		

Figure 38 provides a visual depiction of the percentage of three-year-old children's self-regulation scores that fell into each of the Skill Development Bands in the fall of 2022 and the spring of 2023.

Figure 38

Fall 2022 and Spring 2023 Three-Year-Old Pre-kindergarten Self-Regulation Skill Development Bands



In Table 21, we provide descriptive information about the number of three-year-old pre-kindergarten children whose social skills scores fell into each of the Skill Development Bands. It is expected in pre-kindergarten that most children's social skills scores will fall into the Growing Band at each time point. **In both the fall 2022 and spring 2023, the majority of three-year-old pre-kindergarten children's self-regulation scores fell into the Growing band (71.9% and 66.1%, respectively).**

Table 21

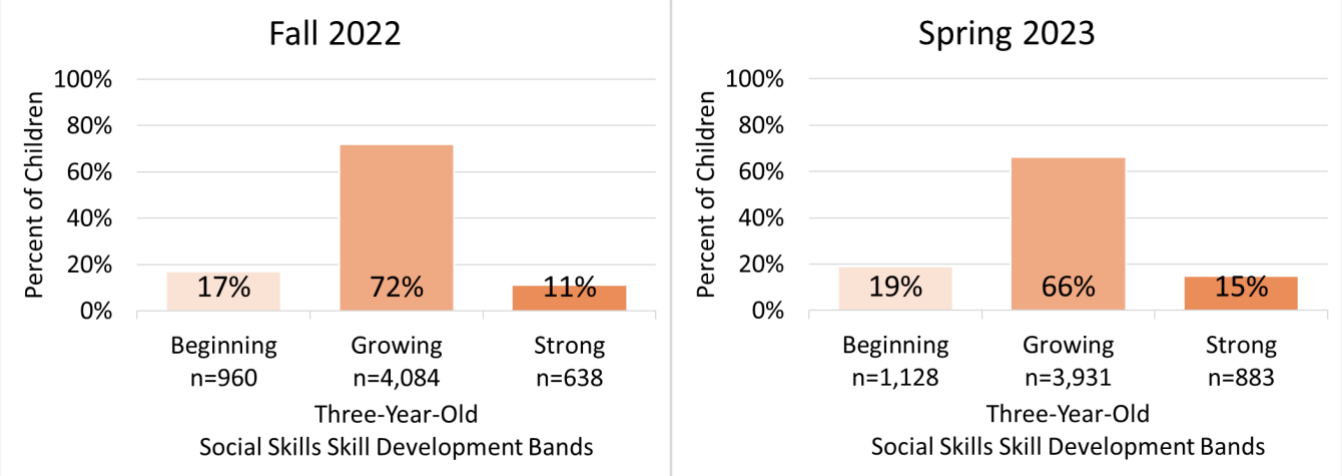
2022-2023 Three-Year-Old Pre-kindergarten Social Skills Skill Development Bands Descriptive Data

		Fall 2022			Spring 2023		
		n=5,682			n=5,942		
		Min	Max	Mean (*SD*)	Min	Max	Mean (*SD*)
Social Skills	CBRS Mean Score	1.00	5.00	3.65 (0.75)	1.00	5.00	3.81 (0.77)
		n (%)			n (%)		
Skill Development Bands	Beginning	960 (16.9)			1,128 (19.0)		
	Growing	4,084 (71.9)			3,931 (66.1)		
	Strong	638 (11.2)			883 (14.9)		

Figure 39 provides a visual depiction of the percentage of three-year-old children's social skills scores that fell into each of the Skill Development Bands in the fall of 2022 and the spring of 2023.

Figure 39

Fall 2022 and Spring 2023 Three-Year-Old Pre-kindergarten Social Skills Skill Development Bands



2022-2023 Three-Year-Old VKRP Pre-kindergarten Mental Health Well-Being Data

The mean Mental Health Well-being scores for three-year-old children in fall 2022 and spring 2023 were 4.00 (*SD*= 0.69) and 4.16 (*SD*= 0.67), respectively (Table 18). **In the fall of 2022, teachers reported being moderately, very, or extremely concerned about the social-emotional well-being of 23% of three-year-old children. Teacher concern for pre-kindergarten three-year-old children's social-emotional well-being decreased slightly in the spring of 2023 where teachers reported being moderately, very, or extremely concerned about 20% of children.**

Figure 40

Fall 2022 and Spring 2023 Three-Year-Old Pre-kindergarten Well-Being Composite Score

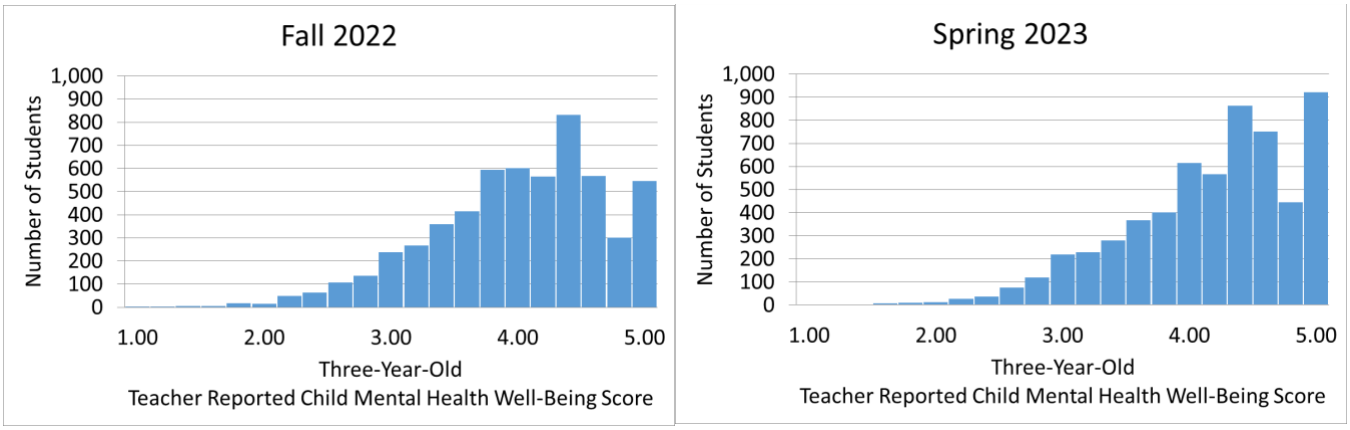
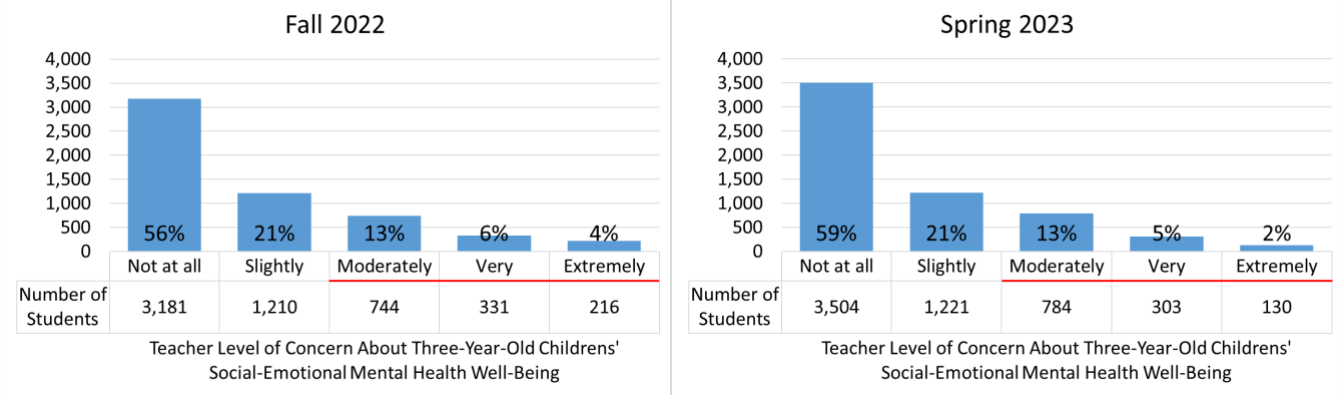


Figure 41

Fall 2022 and Spring 2023 Three-Year-Old Pre-kindergarten Teacher Concern



How Did Three-Year-Old Pre-kindergarten Children Grow in Mathematics, Self-Regulation, and Social Skills from Fall 2022 to Spring 2023?

In this section, we discuss the growth in the total scaled scores in mathematics and growth in raw averaged scores in self-regulation and social skills from fall 2022 to spring 2023. The newly developed VALLS: Pre-K measure for literacy does not yet have growth data available.

2022-2023 VKRP Three-Year-Old Pre-kindergarten Children's Mathematics Scaled Scores Growth

The Early Mathematics Assessment System (EMAS) for pre-kindergarten captures growth over time using scaled scores ranging from 220 to 760. In the following table and figures, each child's scaled score in the fall of 2022 is subtracted from their scaled score in the spring of 2023 to arrive at each individual child's growth in mathematics (Table 22). These individual growth scores are then averaged to create a mean growth score at the state level for the 2022-2023 year.

Three-year-old pre-kindergarten children's scores on the EMAS were normally distributed in the fall 2022 and spring 2023, and there was a normal distribution of growth across the year. Although there was a range in growth across the year, on average, three-year-old pre-kindergarten children gained 74 points in mathematics from fall 2022 to spring 2023, indicating that most children demonstrated solid growth in their mathematics skills. Very few children (13 or 0.3% of children with growth data) showed no growth, and a small portion of children (469 or 11.9%) showed negative growth.

Table 22

Fall 2022 and Spring 2023 Three-Year-Old Pre-kindergarten Mathematics Descriptive Data

		n	Mean (*SD*)	Range
Mathematics	Scaled Score, Fall	4,545	448.44 (88.88)	220 – 688
	Scaled Score, Spring	5,296	524.84 (88.62)	251 – 760
	Mean Growth	3,953	74.25 (72.12)	-375 – 415

2022-2023 VKRP Three-Year-Old Pre-kindergarten Children's Demographic Characteristics Associated with Mathematics Scaled Score Growth

There were significant associations between three-year-old pre-kindergarten children's demographic characteristics and growth in their mathematics scores from fall 2022 to spring 2023. **Specifically, children's age, race/ethnicity, pre-kindergarten funding source, low-income background status, and disability status were all significantly associated with mathematics skills growth (see Table 23).** There was not a significant association between gender or EL status and growth in mathematics scores. Significant associations were mostly small in effect size with the exception of pre-kindergarten funding source where there was a larger effect size on children's growth. Drawing from Cohen (1988)[21], we interpret an R^2 of .001 as a small effect size, .009 as a medium effect size, and .025 as a large effect size. More specifically:

- **Younger three-year-old pre-kindergarten children showed more growth than older children in mathematics scores from fall 2022 to spring 2023.** This effect size was small (R^2 = .005).
- **Three-year-old children from different racial/ethnic backgrounds showed different amounts of growth in mathematics skills from fall 2022 to spring 2023.** Asian children showed the greatest mean growth (95 points), followed by American Indian or Alaska Native and White, not of Hispanic origin (both 87 points), Black or African American and Hispanic/Latino (both 80 points), and non-Hispanic, two or more races (72 points) children. This effect size was small (R^2 = .005).
- **Three-year-old children with different pre-kindergarten funding sources showed different amounts of growth in mathematics skills from fall 2022 to spring 2023.** Children with local funding for other public preschool showed the greatest mean growth (108 points), followed by Title I preschool (88 points), Head Start (87 points), VPI, local funding for VPI placement, special education funding for VPI placement (81 points), Special Education Preschool (76 points), VECF Mixed Delivery (57 points), VA Child Care Subsidy Program (39 points), and Private (37 points). This effect size was large (R^2 = .025).
- **Three-year-old children from low-income backgrounds made greater gains (87 points) in mathematics from fall to spring compared to children who are not from low-income backgrounds (79 points).** This effect size was small (R^2 = .003).
- **Three-year-old children without a disability (85 points) made greater growth than students with a disability (74 points).** This effect size was small (R^2 = .004).

[21] Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences. New York, NY: Routledge Academic.

Table 23

Three-Year-Old Pre-kindergarten Mathematics Growth by Demographic Characteristics

	Fall Mean Score	Spring Mean Score	Mean Growth	Difference from Average Average = 74	Effect Size
Age in months	n=2,217	n=2,526	n=2,057		R^2 = .005
<= 39.59	406	490	88	+14	
39.60 - 42.81	421	509	86	+12	
42.82 - 45.60	446	522	78	+4	
45.61+	460	544	77	+3	
Race/Ethnicity	n=2,217	n=2,526	n=2,057		R^2 = .005
American Indian or Alaska Native	481	532	87	+13	
Asian	443	532	95	+21	
Black or African American	440	517	80	+6	
Hispanic/Latino of any race	426	502	80	+6	
White, not of Hispanic origin	429	521	87	+13	
Non-Hispanic/Latino of any race, two or more races	434	512	72	-2	
Merged Funding Source Code	n=2,621	n=3,253	n=2,543		R^2 = .025
Head Start	452	534	87	+13	
VPI, local funding for VPI placement, special education funding for VPI placement	435	520	81	+7	
Special Education Preschool	375	443	76	+2	
Title I Preschool	437	521	88	+14	
Local funding for other public preschool	456	558	108	+34	
VECF Mixed Delivery	475	525	57	-17	
Private	492	546	37	-37	
VA Child Care Subsidy Program	386	503	39	-35	
Family Income Status	n=2,217	n=2,526	n=2,057		R^2 = .003
Not from low-income backgrounds	437	517	79	+5	
From low-income backgrounds	427	515	87	+13	
Disability	n=2,217	n=2,524	n=2,055		R^2 = .004
Without a disability	446	533	85	+11	
With a disability	380	458	74	+0	

2022-2023 VKRP Three-Year-Old Pre-kindergarten Children's Self-Regulation Growth

Three-year-old children's mean raw scores in self-regulation in the fall 2022 and spring 2023 as well the average self-regulation growth across the state are presented in Table 24. There was a range in three-year-old pre-kindergarten children's self-regulation scores in both the fall of 2022 and the spring of 2023. **Teachers reported small gains in three-year-old pre-kindergarten children's self-regulation skills over the year, and growth was normally distributed. The data also showed that some three-year-old children made larger gains in self-regulation skills while other three-year-old children demonstrated negative growth across the 2022-23 school year.**

Table 24

Fall 2022 and Spring 2023 Three-Year-Old Pre-kindergarten Self-Regulation Descriptive Data

		n	Mean (*SD*)	Range
Self-Regulation	Average Raw Score, Fall	5,682	3.11 (0.87)	1.00 – 5.00
	Average Raw Score, Spring	5,942	3.45 (0.87)	1.00 – 5.00
	Mean Growth	4,938	0.34 (0.75)	-3.70 – 3.30

2022-2023 VKRP Three-Year-Old Pre-kindergarten Children's Demographic Characteristics Associated with Growth in Self-Regulation

There were significant associations between three-year-old children's demographic characteristics and growth in self-regulation scores from fall 2022 to spring 2023. **Specifically, three-year-old children's race/ethnicity, gender, pre-kindergarten funding source, low-income background status and disability status were significantly associated with growth (see Table 25).** There was not a significant association between age or EL status and growth in pre-kindergarten self-regulation scores. Significant associations were mostly small in effect size with the exception of pre-kindergarten funding source where there was a larger effect size on children's growth. More specifically:

- **Three-year-old children who were non-Hispanic/Latino of any race, two or more races showed the greatest growth in self-regulation scores (.49 points),** followed by Black or African American children (.46 points), White, not of Hispanic origin (.42 points), Hispanic/Latino of any race (.39 points), Asian (.25 points), and American Indian or Alaska Native (.19 points) from fall 2022 to spring 2023. This effect size was small (R^2 = .003).
- **Female three-year-old children showed slightly more growth (.45 points) compared to male three-year-old children (.41 points) in self-regulation scores.** This effect size was small (R^2 = .001).
- **Three-year-old children with different pre-kindergarten funding sources showed different amounts of growth in self-regulation skills from fall 2022 to spring 2023.** Children with Title I Preschool funding showed the greatest growth in self-regulation scores (0.81 points), followed by VA Child Care Subsidy Program (0.72 points), VPI, local funding for VPI placement, special education funding for VPI placement (0.39 points), Special Education Preschool (0.30 points), local funding for other public preschool (0.28 points), Head Start (0.27 points), VECF Mixed Delivery (0.26 points), and Private (0.06 points). This effect size was large (R^2 = .045).

- **Three-year-old children not from a low-income background (.45 points) showed slightly greater growth than children who were from a low-income background (.40 points).** This effect size was small (R^2 = .001).
- **Three-year-old children without a disability (.44 points) showed greater growth than three-year-old children with a disability (.38 points).** This effect size was small (R^2 = .001).

Table 25

Three-Year-Old Pre-kindergarten Self-Regulation Growth by Demographic Characteristics

	Fall Mean Score	Spring Mean Score	Mean Growth	Difference from Average Average = 0.34	Effect Size
Race/Ethnicity	n=2,888	n=3,032	n=2674		R^2 = .003
American Indian or Alaska Native	3.55	3.59	0.19	-0.15	
Asian	3.29	3.64	0.25	-0.09	
Black or African American	3.03	3.48	0.46	+0.12	
Hispanic/Latino of any race	3.16	3.47	0.39	+0.05	
White, not of Hispanic origin	3.03	3.46	0.42	+0.08	
Non-Hispanic/Latino of any race, two or more races	2.96	3.45	0.49	+0.15	
Gender	n=2,888	n=3,032	n=2674		R^2 = .001
Male	2.89	3.29	0.41	+0.07	
Female	3.24	3.67	0.45	+0.11	
Merged Funding Source Code	n=3,354	n=3,771	n=3294		R^2 = .045
Head Start	3.41	3.62	0.27	-0.07	
VPI, local funding for VPI placement, special education funding for VPI placement	3.13	3.53	0.39	+0.05	
Special Education Preschool	2.62	2.82	0.30	-0.04	
Title I Preschool	2.67	3.49	0.81	+0.47	
Local funding for other public preschool	3.15	3.44	0.28	-0.06	
VECF Mixed Delivery	3.15	3.47	0.26	-0.08	
Private	3.37	3.58	0.06	-0.28	
VA Child Care Subsidy Program	2.77	3.05	0.72	+0.38	
Family Income Status	n=2,888	n=3,032	n=2674		R^2 = .001
Not from low-income backgrounds	3.03	3.46	0.45	+0.11	
From low-income backgrounds	3.10	3.49	0.40	+0.06	
Disability	n=2,888	n=3,030	n=2672		R^2 = .001
Without a disability	3.18	3.65	0.44	+0.10	
With a disability	2.54	2.90	0.38	+0.04	

2022-2023 VKRP Three-Year-Old Pre-kindergarten Children's Social Skills Growth

Three-year-old children's mean raw scores in social skills in the fall of 2022 and spring of 2023 as well the average social skills growth across the state are presented in Table 26. There was a range in three-year-old pre-kindergarten social skills scores in both the fall of 2022 and the spring of 2023. Like self-regulation, **pre-kindergarten teachers reported small gains in three-year-old children's social skills over the year 2022-2023. The distribution of children's teacher-reported social skills growth was normally distributed with some three-year-old children making larger gains and others demonstrating negative growth in their social skills across the 2022-23 school year.**

Table 26

Fall 2022 and Spring 2023 Three-Year-Old Pre-kindergarten Social Skills Descriptive Data

		n	Mean (*SD*)	Range
Social Skills	Average Raw Score, Fall	5,682	3.65 (0.75)	1.00 – 5.00
	Average Raw Score, Spring	5,942	3.81 (0.77)	1.00 – 5.00
	Mean Growth	4,938	0.15 (0.66)	-2.43 – 2.71

2022-2023 VKRP Three-Year-Old Pre-kindergarten Children's Demographic Characteristics Associated with Growth in Social Skills

There were fewer significant associations between three-year-old children's demographic characteristics and growth in social skills scores from fall 2022 to spring 2023 compared to growth in self-regulation skills. **Specifically, children's age, race/ethnicity, pre-kindergarten funding source, and low-income background status were significantly associated with social skills growth (see Table 27).** There was not a significant association between gender, disability status, and EL status and growth in pre-kindergarten social skills scores. Significant associations were mostly small in effect size. More specifically:

- **The youngest (<= 39.59 months) and oldest (45.61+ months) three-year-old pre-kindergarten children showed the greatest mean growth in social skills (.23 points), followed by children 42.82 - 45.60 months (.21 points) and 39.60 – 42.81 months (.19 points).** This effect size was small (R^2 = .001).
- **White, not of Hispanic origin three-year-old children showed the greatest growth in social skills scores (.24 points)**, followed by Non-Hispanic two or more races (.22 points), Black or African American (.21 points), Hispanic/Latino of any race (.20 points), Asian (.19 points), and American Indian/Alaska Native (.04 points) from fall 2022 to spring 2023. This effect size was small (R^2 = .001).
- **Three-year-old children with different pre-kindergarten funding sources showed different amounts of growth in social skills from fall 2022 to spring 2023.** Children with Title I Preschool funding showed the greatest growth in social skills scores (0.45 points), followed by local funding for other public preschool (0.28 points), VPI, local funding for VPI placement, special education funding for VPI placement (0.19 points), VA Child Care Subsidy Program (0.17 points), Special Education Preschool (0.11 points), Head Start (0.07 points), VECF Mixed Delivery (0.03 points), and Private (0.01 points). This effect size was large (R^2 = .028).
- **Three-year-old children from a low-income background (.18 points) showed slightly less growth than three-year-old children who were not from a low-income background (.25 points).** This effect size was small (R^2 = .003).

Table 27

Three-Year-Old Pre-kindergarten Social Skills Growth by Demographic Characteristics

	Fall Mean Score	Spring Mean Score	Mean Growth	Difference from Average Average = .15	Effect Size
Age in months	n=2,888	n=3,032	n=2674		R^2 = .001
<= 39.59	3.57	3.75	0.23	+0.08	
39.60 - 42.81	3.58	3.78	0.19	+0.04	
42.82 - 45.60	3.69	3.90	0.21	+0.06	
45.61+	3.69	3.95	0.23	+0.08	
Race/Ethnicity	n=2,888	n=3,032	n=2674		R^2 = .001
American Indian or Alaska Native	3.94	3.82	0.04	-0.11	
Asian	3.66	3.90	0.19	+0.04	
Black or African American	3.60	3.82	0.21	+0.06	
Hispanic/Latino of any race	3.67	3.81	0.20	+0.05	
White, not of Hispanic origin	3.66	3.89	0.24	+0.09	
Non-Hispanic/Latino of any race, two or more races	3.53	3.80	0.22	+0.07	
Merged Funding Source Code	n=3,354	n=3,771	n=3294		R^2 = .028
Head Start	3.90	3.91	0.07	-0.08	
VPI, local funding for VPI placement, special education funding for VPI placement	3.66	3.86	0.19	+0.04	
Special Education Preschool	3.29	3.40	0.11	-0.04	
Title I Preschool	3.46	3.93	0.45	+0.30	
Local funding for other public preschool	3.70	3.84	0.28	+0.13	
VECF Mixed Delivery	3.64	3.77	0.03	-0.12	
Private	3.66	3.80	0.01	-0.14	
VA Child Care Subsidy Program	3.61	3.35	0.17	+0.02	
Family Income Status	n=2,888	n=3,032	n=2674		R^2 = .003
Not from low-income backgrounds	3.60	3.83	0.25	+0.10	
From low-income backgrounds	3.69	3.86	0.18	+0.03	

2022-2023 VKRP Four-Year-Old Pre-kindergarten Data

The VKRP four-year-old pre-kindergarten assessment data for the 2022-2023 academic year are shared in the sections below. Data include pre-kindergarten demographic information, program/classroom data, data completion information, descriptive data, and mental health well-being results for four-year-old children assessed in the 2022-2023 academic year.

2022-2023 Four-Year-Old VKRP Pre-kindergarten Demographic Information

In the fall of 2022, over 29,000 four-year-old children participated in VKRP (Table 28). Four-year-old children assessed were on average four years and five months old in the fall of 2022 and were racially and ethnically diverse, with 21.8% of four-year-old children identifying as Hispanic/Latino of any race and 32.6% identifying as Black or African American. 62.3% of the sample in the fall of 2022 were four-year-old children from low-income backgrounds. The number of four-year-old children participating in the spring was similar to the fall 2022 sample (decrease in spring 2023 of approximately 70 children). Racial/ethnic representation remained consistent from fall 2022 to spring 2023, but there was a 4.7% increase in the number of four-year-old children from low-income backgrounds in the spring of 2023 compared to the fall of 2022. This increase is likely due to real increases in the number of families meeting low-income background status criteria over the course of the 2022-2023 year.

Table 28

2022-2023 Pre-kindergarten Four-Year-Old Demographic Summary

		Fall 2022 Overall Sample N=29,076 SRC Demographics n=24,683	Spring 2023 Overall Sample N=29,004 SRC Demographics n=24,959
		Mean (*SD*) or n (%)	Mean (*SD*) or n (%)
Age	Age in months on September 30, 2022	54.24 (3.72)	54.21 (3.61)
Gender	Female	12,005 (48.6)	12,117 (48.5)
	Male	12,669 (51.3)	12,839 (51.4)
	Other	9 (<0.1)	3 (<0.1)
Race/Ethnicity	American Indian or Alaska Native	75 (0.3)	68 (0.3)
	Asian	1,023 (4.1)	1,048 (4.2)
	Black or African American	8,051 (32.6)	8,116 (32.5)
	Hispanic/Latino of any race	5,370 (21.8)	5,514 (22.1)
	White, not of Hispanic origin	8,487 (34.4)	8,525 (34.2)
	Native Hawaiian or other Pacific Islander	36 (0.1)	37 (0.1)
	Non-Hispanic/Latino of any race, two or more races	1,641 (6.7)	1,651 (6.6)
Family Income Status[a]	Students not from low-income backgrounds	9,313 (37.7)	8,241 (33.0)
	Students from low-income backgrounds	15,370 (62.3)	16,718 (67.0)
Disability[b]	Students without a disability	21,338 (86.5)	20,668 (82.9)
	Students with a disability	3,331 (13.5)	4,250 (17.1)
Language[c]	Not English language/multilingual learners (EL)	24,303 (98.5)	24,548 (98.4)
	English language/multilingual learners (EL)	380 (1.5)	411 (1.6)
		Merged Funding Source n=25,169	Merged Funding Source n=25,641
Merged Funding Source Code[d]	Head Start	2,030 (8.1)	2,049 (8.0)
	VPI, local funding for VPI placement, special education funding for VPI placement	19,848 (78.8)	19,938 (77.8)
	Special Education Preschool	1,481 (5.9)	1,554 (6.1)
	Title I Preschool	658 (2.6)	681 (2.6)
	Local funding for other public preschool	600 (2.4)	607 (2.4)
	VECF Mixed Delivery	272 (1.1)	574 (2.2)
	Private	279 (1.1)	231 (0.9)
	VA Child Care Subsidy Program	1 (<0.1)	7 (<0.1)

[a]Source: SRC Disadvantaged Status Flag. Students are identified as having a low-income background if, at any point during the school year, the student: 1) is eligible for Free/Reduced Meals, 2) receives TANF, or 3) is eligible for Medicaid.

[b]Source: SRC Primary Disability Code. Students are identified as having a disability if any code is present *except,* "*Qualified Individual under Section 504.*"

[c]Source: Student Record Collection (SRC) EL Services Code. Students are identified as English language/multilingual learners (EL) if code is, "*Identified as EL and receives EL services*," "*Identified as EL but has refused EL services*," or "*Identified as formerly EL for each of the four years after exiting EL services*."

[d]Source: SRC PK Funding Code. Children missing SRC data were categorized utilizing the PK Funding Source from the VLP system if present.

2022-2023 Four-Year-Old VKRP Pre-kindergarten Completion Data

In this second year of the four-year-old publicly funded pre-kindergarten expansion, 90% of participating four-year-old children had complete data on all assessments (literacy, mathematics, self-regulation, and social skills) in the fall of 2022 and 92% had complete data on all assessments in the spring of 2023 (Table 29). The table below presents information on completion rates across the four-year-old pre-kindergarten assessments in 2022-2023. Across both the fall 2022 and spring 2023, exemptions were low (<2%) across all assessments.

Table 29

2022-2023 Pre-kindergarten Four-Year-Old Assessment Completion

		Fall 2022 N=29,076	Spring 2023 N=29,004
		Mean (*SD*) or n (%)	Mean (*SD*) or n (%)
Virginia Language & Literacy Screener (VALLS: Pre-K)	Incomplete	1,851 (6.4)	1,060 (3.6)
	Exempt	229 (0.8)	284 (1.0)
	Complete, remote	-	-
	Complete, non-standard[a]	-	-
	Complete, standard	26,996 (92.8)	27,660 (95.4)
EMAS	Incomplete	1,965 (6.8)	1,753 (6.0)
	Exempt	262 (0.9)	453 (1.6)
	Complete, Spanish	326 (1.1)	208 (0.7)
	Complete, remote	12 (<0.1)	1 (<0.1)
	Complete, non-standard[a]	201 (0.7)	217 (0.7)
	Complete, standard	26,310 (90.5)	26,372 (90.9)
CBRS	Incomplete	1,951 (6.7)	1,838 (6.4)
	Exempt	199 (0.7)	357 (1.2)
	Complete, standard	26,926 (92.6)	26,809 (92.4)
Breakdown of assessment overlap (complete, standard, or remote only)	VALLS: Pre-K, EMAS, CBRS	25,261 (90.0)	25,846 (92.0)
	VALLS: Pre-K, EMAS	192 (0.7)	244 (0.8)
	VALLS: Pre-K, CBRS	642 (2.3)	530 (1.9)
	EMAS, CBRS	828 (3.0)	271 (1.0)
	VALLS: Pre-K	901 (3.2)	1,040 (3.7)
	EMAS	41 (0.1)	12 (<0.1)
	CBRS	195 (0.7)	162 (0.5)

[a]Non-standard administration includes accommodations to the administration conditions (i.e., frequent breaks, simplified directions) that do not follow the standard administration protocol.

2022-2023 Four-Year-Old VKRP Pre-kindergarten Descriptive and Skill Development Band Data

In Table 30, we present four-year-old VKRP descriptive data for the EMAS (total scaled score) and CBRS (self-regulation, social skills and mental health well-being mean scores) in 2022-2023. The VALLS: Pre-K measure for literacy does not have an overall summed score; therefore, in Table 30 we present the mean subtask scores (e.g., name writing, letter sounds etc.) for the literacy screener. **Overall, four-year-old children displayed a range of skills in the fall of 2022 and spring of 2023 across each of the domains-literacy, mathematics, self-regulation, and social skills.**

Table 30

2022-2023 Four-Year-Old Pre-kindergarten Assessment Descriptive Data

		Fall 2022 N=29,076	Spring 2023 N=29,004
		Mean (*SD*) or n (%)	Mean (*SD*) or n (%)
Literacy	Letter Names	18.68 (18.08)	37.89 (16.15)
	Letter Sounds	4.54 (6.63)	14.26 (8.80)
	Syllable Segmenting	5.17 (3.68)	8.06 (3.01)
	Beginning Sounds Expressive	2.43 (3.26)	6.38 (3.72)
	Phoneme Blending	-	3.17 (3.64)
	Passage Comprehension: Retell	1.47 (1.53)	2.92 (1.78)
	Passage Comprehension: Expressive	2.23 (1.64)	2.59 (1.37)
	Passage Comprehension: Receptive	1.71 (1.20)	2.88 (1.18)
	Nonsense Sentences	1.49 (2.27)	-
	Name Writing	2.96 (1.52)	4.47 (1.03)
	Print Concepts	4.73 (2.69)	-
Mathematics	EMAS Scaled Score	504.07 (89.22)	609.76 (85.26)
Social-Emotional	CBRS Self-Regulation Mean Score	3.43 (0.81)	3.84 (0.81)
	CBRS Social Skills Mean Score	3.92 (0.73)	4.15 (0.72)
	CBRS Well-Being Mean Score	4.13 (0.65)	4.34 (0.62)

In Table 31, we provide descriptive information about the number of four-year-old pre-kindergarten children's mathematics scores that fall into each of the Skill Development Bands. **In the fall of 2022, most four-year-old children's scores fell into the Growing Band (51.8%), and in the spring of 2023, the majority of children's scores fell into the Beginning and Growing Bands (34.8 and 34.4% respectively).**

Table 31

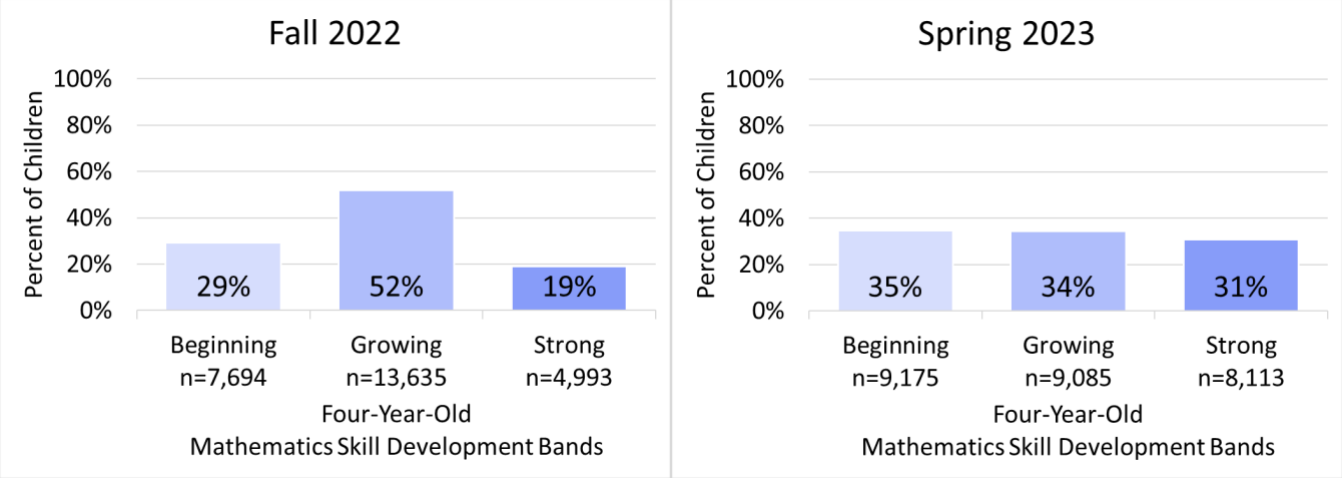
2022-2023 Four-Year-Old Pre-kindergarten Mathematics Skill Development Bands Descriptive Data

		Fall 2022			Spring 2023		
		n=26,322			n=26,373		
		Min	Max	Mean (*SD*)	Min	Max	Mean (*SD*)
Mathematics	EMAS Scaled Score	250	758	504.07 (89.22)	296	817	609.76 (85.26)
		n (%)			n (%)		
Skill Development Bands	Beginning	7,694 (29.2)			9,175 (34.8)		
	Growing	13,635 (51.8)			9,085 (34.4)		
	Strong	4,993 (19.0)			8,113 (30.8)		

Figure 42 provides a visual depiction of the percentage of four-year-old children's mathematics scores that fell into each of the Skill Development Bands in the fall of 2022 and the spring of 2023.

Figure 42

Fall 2022 and Spring 2023 Four-Year-Old Pre-kindergarten Mathematics Skill Development Bands



In Table 32, we provide descriptive information about the number of four-year-old pre-kindergarten children's self-regulation scores that fell into each of the Skill Development Bands. **In both the fall 2022 and spring 2023, the majority of four-year-old children's self-regulation scores fell into the Growing Band (70.0% and 61.9%, respectively).**

Table 32

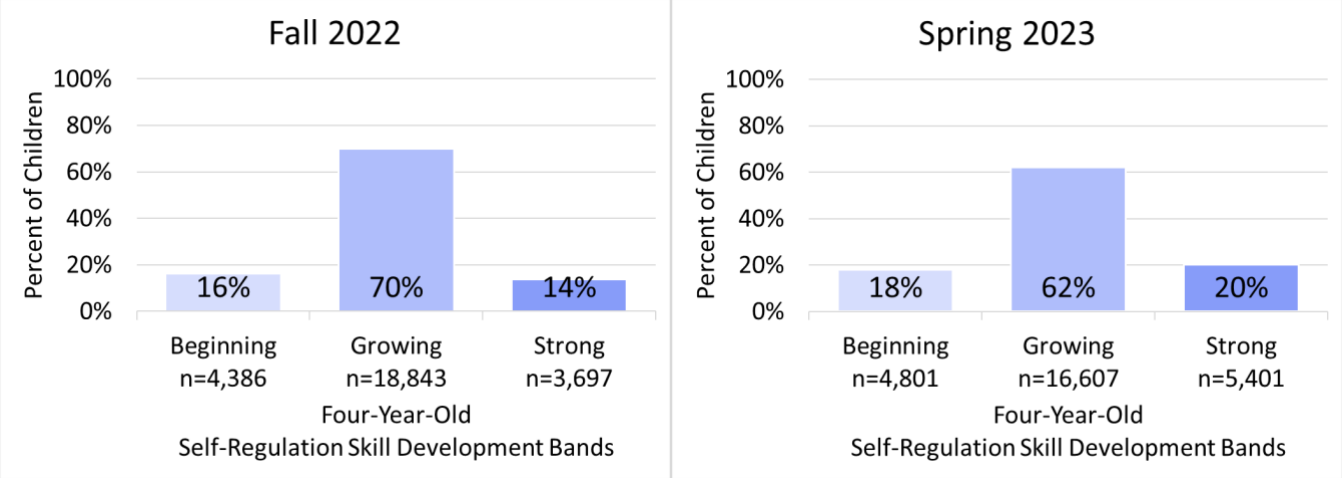
2022-2023 Four-Year-Old Pre-kindergarten Self-Regulation Skill Development Bands Descriptive Data

		Fall 2022			Spring 2023		
		n=26,926			n=26,809		
		Min	Max	Mean (*SD*)	Min	Max	Mean (*SD*)
Self-Regulation	CBRS Mean Score	1.00	5.00	3.43 (0.81)	1.00	5.00	3.84 (0.81)
		n (%)			n (%)		
Skill Development Bands	Beginning	4,386 (16.3)			4,801 (17.9)		
	Growing	18,843 (70.0)			16,607 (61.9)		
	Strong	3,697 (13.7)			5,401 (20.2)		

Figure 43 provides a visual depiction of the percentage of four-year-old children's self-regulation scores that fell into each of the Skill Development Bands in the fall of 2022 and the spring of 2023.

Figure 43

Fall 2022 and Spring 2023 Four-Year-Old Pre-kindergarten Self-Regulation Skill Development Bands



In Table 33, we provide descriptive information about the number of four-year-old pre-kindergarten children's social skills scores that fell into each of the Skill Development Bands. **In both the fall 2022 and spring 2023, most children's self-regulation scores fell into the Growing band (68.4% and 62.1%, respectively).**

Table 33

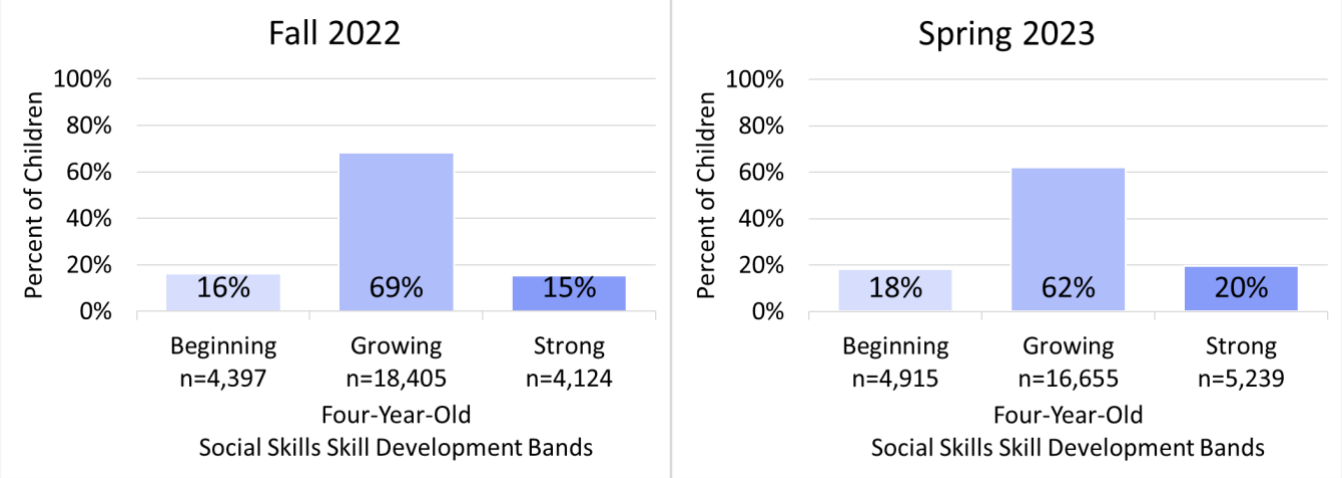
2022-2023 Four-Year-Old Pre-kindergarten Social Skills Skill Development Bands Descriptive Data

		Fall 2022			Spring 2023		
		n=26,926			n=26,809		
		Min	Max	Mean (*SD*)	Min	Max	Mean (*SD*)
Social Skills	CBRS Mean Score	1.00	5.00	3.92 (0.73)	1.00	5.00	4.15 (0.72)
		n (%)			n (%)		
Skill Development Bands	Beginning	4,397 (16.3)			4,915 (18.3)		
	Growing	18,405 (68.4)			16,655 (62.1)		
	Strong	4,124 (15.3)			5,239 (19.6)		

Figure 44 provides a visual depiction of the percentage of four-year-old children's social skills scores that fell into each of the Skill Development Bands in the fall of 2022 and the spring of 2023.

Figure 44

Fall 2022 and Spring 2023 Four-Year-Old Pre-kindergarten Social Skills Skill Development Bands



2022-2023 Four-Year-Old VKRP Pre-kindergarten Mental Health Well-Being Data

The mean Mental Health Well-being scores for four-year-old children in fall 2022 and spring 2023 were 4.13 (*SD*= 0.65) and 4.34 (*SD*= 0.62), respectively (Table 30). **In the fall of 2022, teachers reported being moderately, very, or extremely concerned about the social-emotional well-being for 19% of four-year-old children. Teacher concern for four-year-old pre-kindergarten children's social-emotional well-being decreased slightly in the spring of 2023 where teachers reported being moderately, very, or extremely concerned about 16% of their four-year-old children.**

Figure 45

Fall 2022 and Spring 2023 Four-Year-Old Pre-kindergarten Well-Being Composite Score

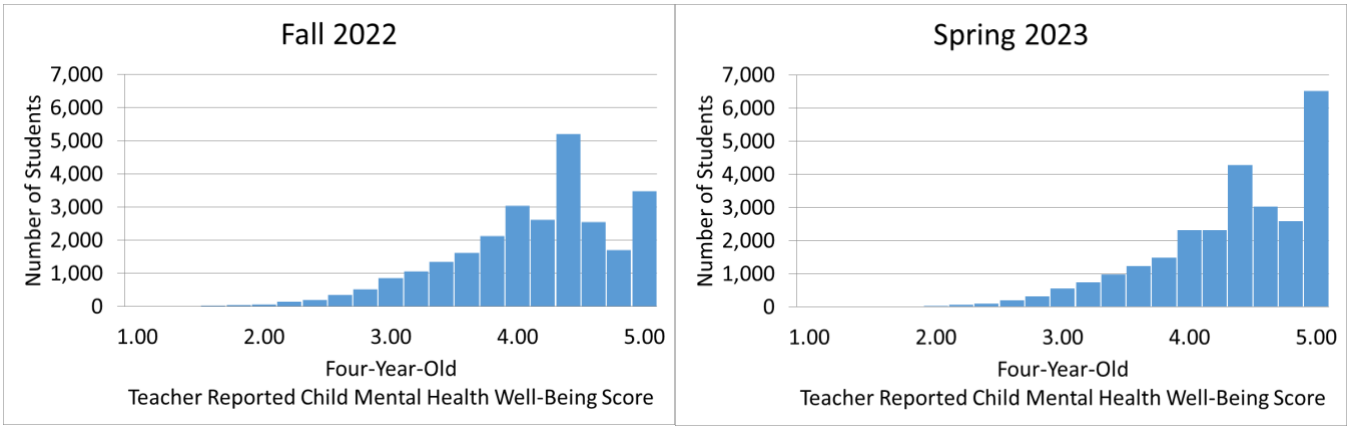
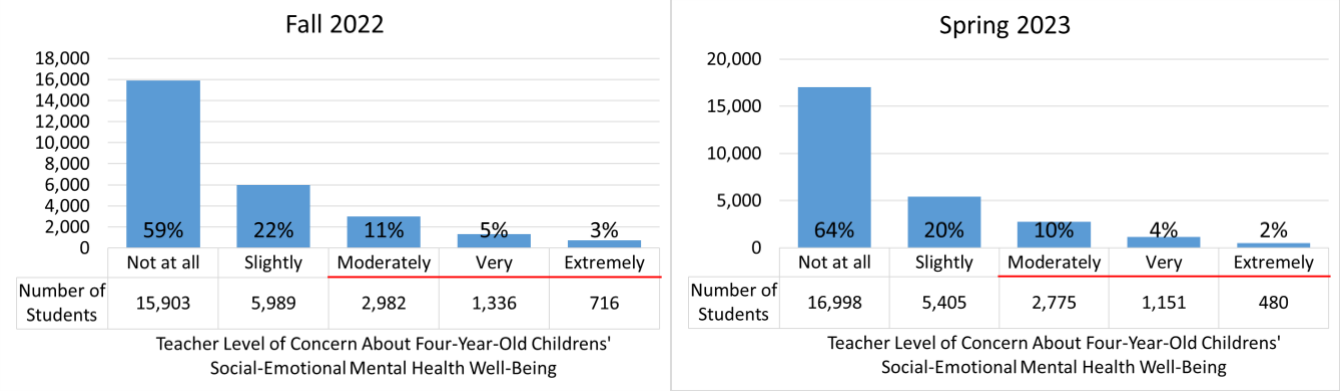


Figure 46

Fall 2022 and Spring 2023 Four-Year-Old Pre-kindergarten Teacher Concern



How Did Four-Year-Old VKRP Pre-kindergarten Children Grow in Mathematics, Self-Regulation, and Social Skills from Fall 2022 to Spring 2023?

In this section, we will discuss the overall growth in four-year-old children's scaled scores in mathematics and growth in raw averaged scores in self-regulation and social skills from fall 2022 to spring 2023. The newly developed VALLS: Pre-K measure for literacy does not yet have growth data available.

2022-2023 VKRP Four-Year-Old Pre-kindergarten Children's Mathematics Scaled Scores Growth

The Early Mathematics Assessment System (EMAS) for pre-kindergarten captures growth over time using scaled scores ranging from 250 to 817. In the following table and figures, each child's scaled score in the fall of 2022 is subtracted from their scaled score in the spring of 2023 to arrive at each individual child's growth in mathematics (Table 34). These individual growth scores are then averaged to create a mean growth score at the state level for the 2022-2023 year.

Four-year-old pre-kindergarten children's scores on the EMAS were normally distributed in the fall 2022 and spring 2023, and there was a normal distribution of growth across the year. Although there was a range in growth across the year, on average, four-year-old pre-kindergarten children gained 107 points in mathematics from fall 2022 to spring 2023, demonstrating robust growth in mathematics skills. Very few four-year-old children (32 or 0.1% of children with growth data) showed no growth, while a small portion of children (1,109 or 4.6%) showed negative growth.

Table 34

Fall 2022 and Spring 2023 Four-Year-Old Pre-kindergarten Mathematics Descriptive Data

		n	Mean (*SD*)	Range
Mathematics	Scaled Score, Fall	26,322	504.07 (89.22)	250 – 758
	Scaled Score, Spring	26,373	609.76 (85.26)	296 – 817
	Mean Growth	24,318	107.08 (69.23)	-276 – 505

2022-2023 VKRP Four-Year-Old Pre-kindergarten Children's Demographic Characteristics Associated with Mathematics Scaled Score Growth

There were significant associations between four-year-old pre-kindergarten children's demographic characteristics and growth in mathematics scores from fall 2022 to spring 2023. **Specifically, children's age, race/ethnicity, pre-kindergarten funding source, low-income background status, disability status, and EL status were all significantly associated with growth (see Table 35).** There was not a significant association between gender and growth in mathematics scores. Significant associations ranged from small to large in effect size. Drawing from Cohen (1988)[22], we interpret an R^2 of .001 as a small effect size, .009 as a medium effect size, and .025 as a large effect size. More specifically:

- **Younger four-year-old pre-kindergarten children showed more growth than older children in mathematics scores from fall 2022 to spring 2023.** This effect size was small (R^2 = .004).
- **Four-year-old children from different racial/ethnic backgrounds showed different amounts of growth in mathematics skills from fall 2022 to spring 2023.** Native Hawaiian or other Pacific Islander children showed the greatest mean growth (127 points), followed by Hispanic/Latino children (124 points), Asian children (114 points), American Indian or Alaska Native (113 points), White, not of Hispanic origin and Black or African American (both 106 points), and non-Hispanic, two or more races (104 points) children. This effect size of race was medium (R^2 = .011).
- **Four-year-old children from different pre-kindergarten funding sources showed different amounts of growth in mathematics skills from fall 2022 to spring 2023.** Children in Title I Preschool showed the greatest mean growth (116 points), followed by Head Start (112 points), VPI, local funding for VPI placement, special education funding for VPI placement (111 points), VA Child Care Subsidy Program (108 points), local funding for other public preschool (87 points), Special Education Preschool (76 points), VECF Mixed Delivery (72 points), and Private (70 points). This effect size was medium (R^2 = .023).
- **Four-year-old children from low-income backgrounds made greater gains (112 points) in mathematics from fall 2022 to spring 2023 compared to children who are not from low-income backgrounds (106 points).** This effect size was small (R^2 = .001).
- **Four-year-old children without a disability (111 points) had greater growth than students with a disability (99 points).** This effect size was small (R^2 = .004).
- **English language/multilingual learners (EL) made greater growth (146 points) than non-EL four-year-old children (109 points).** This effect size was small (R^2 = .004).

[22] Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences. New York, NY: Routledge Academic.

Table 35

Four-Year-Old Pre-kindergarten Mathematics Growth by Demographic Characteristics

	Fall Mean Score	Spring Mean Score	Mean Growth	Difference from Average Average = 107	Effect Size
Age in months	n=23,129	n=23,434	n=21,890		R^2 = .004
<= 51.15	472	587	116	+9	
51.16 - 54.31	492	603	112	+5	
54.32 - 57.30	510	616	108	+1	
57.31+	524	628	104	-3	
Race/Ethnicity	n=23,129	n=23,434	n=21,890		R^2 = .011
American Indian or Alaska Native	516	627	113	+6	
Asian	506	617	114	+7	
Black or African American	500	605	106	-1	
Hispanic/Latino of any race	468	590	124	+17	
White, not of Hispanic origin	516	621	106	-1	
Native Hawaiian or other Pacific Islander	507	632	127	+20	
Non-Hispanic/Latino of any race, two or more races	511	616	104	-3	
Merged Funding Source Code	n=23,440	n=23,974	n=22,363		R^2 = .023
Head Start	490	599	112	+5	
VPI, local funding for VPI placement, special education funding for VPI placement	500	610	111	+4	
Special Education Preschool	456	534	76	-31	
Title I Preschool	518	632	116	+9	
Local funding for other public preschool	554	644	87	-20	
VECF Mixed Delivery	531	613	72	-35	
Private	574	646	70	-37	
VA Child Care Subsidy Program	582	700	108	+1	
Family Income Status	n=23,129	n=23,434	n=21,890		R^2 = .001
Not from low-income backgrounds	513	622	106	-1	
From low-income backgrounds	492	602	112	+5	
Disability	n=23,118	n=23,392	n=21,851		R^2 = .004
Without a disability	503	616	111	+4	
With a disability	468	563	99	-8	
Language	n=23,129	n=23,432	n=21,889		R^2 = .004
Not English language/ multilingual learners (EL)	500	608	109	+2	
English language/multilingual learners (EL)	474	613	146	+39	

2022-2023 VKRP Four-Year-Old Pre-kindergarten Children's Self-Regulation Growth

Four-year-old children's mean raw scores in self-regulation in the fall 2022 and spring 2023 as well the average self-regulation growth across the state are presented in Table 36. There was a range in four-year-old pre-kindergarten children's self-regulation scores in both the fall of 2022 and the spring of 2023. **Teachers reported small gains in four-year-old pre-kindergarten children's self-regulation skills over the year, and growth was normally distributed. The data also showed that some four-year-old children made larger gains in self-regulation skills while other four-year-old children demonstrated negative growth in their self-regulation skills across the 2022-23 school year.**

Table 36

Fall 2022 and Spring 2023 Four-Year-Old Pre-kindergarten Self-Regulation Descriptive Data

		n	Mean (*SD*)	Range
Self-Regulation	Average Raw Score, Fall	26,926	3.43 (0.81)	1.00 – 5.00
	Average Raw Score, Spring	26,809	3.84 (0.81)	1.00 – 5.00
	Mean Growth	24,895	0.41 (0.68)	-2.80 – 4.00

2022-2023 VKRP Four-Year-Old Pre-kindergarten Children's Demographic Characteristics Associated with Growth in Self-Regulation

There were significant associations between four-year-old pre-kindergarten children's demographic characteristics and growth in self-regulation scores from fall 2022 to spring 2023. **Specifically, four-year-old children's race/ethnicity and pre-kindergarten funding source were significantly associated with growth (see Table 37).** There was not a significant association between age, gender, low-income background status, disability status, or EL status and growth in pre-kindergarten self-regulation scores. Significant associations were small to medium in effect size. More specifically:

- **Four-year-old children who are American Indian or Alaska Native showed the greatest growth in self-regulation scores (.55 points),** followed by Asian children (.49 points), Hispanic/Latino of any race and Native Hawaiian or other Pacific Islander (both with a .46-point gain), Black or African American children (.43 points), and White, not of Hispanic origin and Non-Hispanic two or more races (both .41 points). This effect size was small (R^2 = .001).
- **Four-year-old children from different pre-kindergarten funding sources showed different amounts of growth in self-regulation skills from fall 2022 to spring 2023.** VPI, local funding for VPI placement, special education funding for VPI placement showed the greatest growth in self-regulation (0.44 points) followed by Title I Preschool and VA Child Care Subsidy Program (both 0.43 points), Head Start (0.38 points), Special Education Preschool (0.33 points), local funding for other public preschool (0.30 points), VECF Mixed Delivery (0.27 points), and Private (0.19 points). This effect size was medium (R^2 = .009).

Table 37

Four-Year-Old Pre-kindergarten Self-Regulation Growth by Demographic Characteristics

	Fall Mean Score	Spring Mean Score	Mean Growth	Difference from Average Average = 0.41	Effect Size
Race/Ethnicity	n=23,679	n=23,808	n=22,409		R^2 = .001
American Indian or Alaska Native	3.37	3.86	0.55	+0.14	
Asian	3.55	4.02	0.49	+0.08	
Black or African American	3.34	3.76	0.43	+0.02	
Hispanic/Latino of any race	3.43	3.88	0.46	+0.05	
White, not of Hispanic origin	3.49	3.89	0.41	+0.00	
Native Hawaiian or other Pacific Islander	3.74	4.18	0.46	+0.05	
Non-Hispanic/Latino of any race, two or more races	3.44	3.86	0.41	+0.00	
Merged Funding Source Code	n=24,019	n=24,348	n=22,910		R^2 = .009
Head Start	3.51	3.89	0.38	-0.03	
VPI, local funding for VPI placement, special education funding for VPI placement	3.43	3.87	0.44	+0.03	
Special Education Preschool	2.82	3.12	0.33	-0.08	
Title I Preschool	3.68	4.08	0.43	+0.02	
Local funding for other public preschool	3.72	4.05	0.30	-0.11	
VECF Mixed Delivery	3.57	3.81	0.27	-0.14	
Private	3.70	3.89	0.19	-0.22	
VA Child Care Subsidy Program	3.60	4.08	0.43	+0.02	

2022-2023 VKRP Four-Year-Old Pre-kindergarten Children's Social Skills Growth

Four-year-old children's mean raw scores in social skills in the fall of 2022 and spring of 2023 as well the average social skills growth across the state are presented in Table 38. There was a range in four-year-old pre-kindergarten social skills scores in both the fall of 2022 and the spring of 2023. Like self-regulation, **pre-kindergarten teachers reported small gains in four-year-old children's social skills over the year 2022-2023. The distribution of growth is normally distributed with some four-year-old children making gains and others demonstrating negative growth with regards to teachers' perceptions of their social skills.**

Table 38

Fall 2022 and Spring 2023 Four-Year-Old Pre-kindergarten Social Skills Descriptive Data

		n	Mean (*SD*)	Range
Social Skills	Average Raw Score, Fall	26,926	3.92 (0.73)	1.00 – 5.00
	Average Raw Score, Spring	26,809	4.15 (0.72)	1.00 – 5.00
	Mean Growth	24,895	0.22 (0.60)	-3.14 – 3.43

2022-2023 VKRP Four-Year-Old Pre-kindergarten Children's Demographic Characteristics Associated with Growth in Social Skills

There were a few significant associations between four-year-old children's demographic characteristics and growth in social skills scores from fall 2022 to spring 2023. **Specifically, four-year-old children's race/ethnicity, pre-kindergarten funding source, and disability status were significantly associated with social skills growth (see Table 39).** There was not a significant association between age, gender, low-income background status, and EL status and growth in pre-kindergarten social skills scores. Significant associations were small to medium in effect size. More specifically:

- **Asian four-year-old children showed the greatest growth in social skills scores (.31 points)**, followed by American Indian or Alaska Native (.30 points), Hispanic/Latino of any race and Native Hawaiian or other Pacific Islander (both .26 points), Black or African American (.24 points), and White, not of Hispanic origin and non-Hispanic/Latino of any race, two or more races (both .22 points). This effect size was small (R^2 = .001).
- **Four-year-old children from different pre-kindergarten funding sources showed different amounts of growth in social skills from fall 2022 to spring 2023.** VPI, local funding for VPI placement, special education funding for VPI placement showed the greatest growth in social skills (0.25 points) followed by VA Child Care Subsidy Program (0.24 points), Title I Preschool (0.22 points), Special Education Preschool and Private (both 0.21 points), Head Start (0.20 points), local funding for other public preschool (0.17 points), and VECF Mixed Delivery (0.07 points). This effect size was small (R^2 = .006).
- **Four-year-old children with a disability showed more growth in social skills (.27 points) compared to four-year-old children without a disability (.23 points).** This effect size was small (R^2 = .001).

Table 39

Four-Year-Old Pre-kindergarten Social Skills Growth by Demographic Characteristics

	Fall Mean Score	Spring Mean Score	Mean Growth	Difference from Average Average = .22	Effect Size
Race/Ethnicity	n=23,679	n=23,808	n=22,409		R^2 = .001
American Indian or Alaska Native	3.89	4.11	0.30	+0.08	
Asian	4.03	4.33	0.31	+0.09	
Black or African American	3.87	4.12	0.24	+0.02	
Hispanic/Latino of any race	3.95	4.21	0.26	+0.04	
White, not of Hispanic origin	3.96	4.18	0.22	+0.00	
Native Hawaiian or other Pacific Islander	4.02	4.30	0.26	+0.04	
Non-Hispanic/Latino of any race, two or more races	3.92	4.16	0.22	+0.00	
Merged Funding Source Code	n=24,019	n=24,348	n=22,910		R^2 = .006
Head Start	3.96	4.17	0.20	-0.02	
VPI, local funding for VPI placement, special education funding for VPI placement	3.94	4.19	0.25	+0.03	
Special Education Preschool	3.41	3.60	0.21	-0.01	
Title I Preschool	4.12	4.34	0.22	0.00	
Local funding for other public preschool	4.10	4.29	0.17	-0.05	
VECF Mixed Delivery	3.84	3.92	0.07	-0.15	
Private	3.99	4.21	0.21	-0.01	
VA Child Care Subsidy Program	3.43	4.19	0.24	+0.02	
Disability	n=23,667	n=23,766	n=22,369		R^2 = .001
Without a disability	3.98	4.24	0.23	+0.01	
With a disability	3.51	3.79	0.27	+0.05	

Mathematics, Self-Regulation, Social Skills, and Mental Health Well-Being Assessment Pilot: Grades 1-3

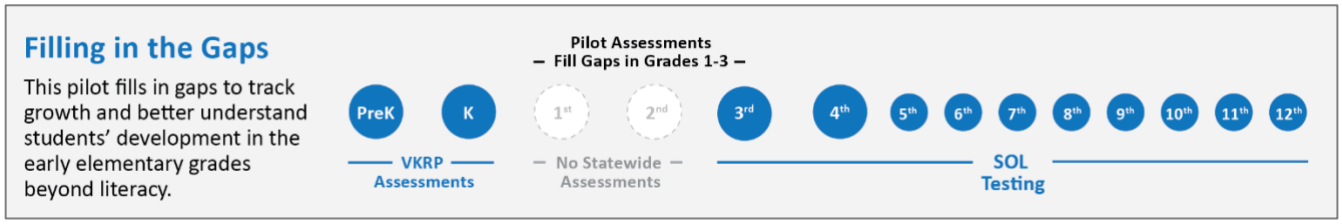
Introduction

VKRP, in partnership with VDOE, is conducting a mathematics, self-regulation, social skills, and mental health well-being assessment pilot in grades one through three (1-3 Assessment Pilot). The purpose of the pilot, required by Virginia's 2022-2023 Biennial Budget, is to explore the utility of building longitudinal measures of mathematics, self-regulation, social skills, and mental health well-being that could potentially extend into grades one through three. These measures could complement Virginia's use of literacy screening in the primary grades administered by Virginia Literacy Partnership (VLP). At the conclusion of the pilot, VKRP will share a report with VDOE on what has been learned.

School and division leaders, teachers, and families across Virginia have expressed interest in understanding how young students' skills develop in the early elementary grades and how to better track student growth from pre-kindergarten through the early grades. Currently, there are several gaps in existing assessments. Apart from literacy, there are no statewide assessments that measure students' early learning in these areas in grades one and two. Additionally, there are no statewide assessments that universally track students' growth within the academic year and across academic years in these areas from pre-kindergarten through grade three (noting there are growth assessments in mathematics starting in third grade). Currently, school divisions vary in their approach to student assessments in the early elementary grades.

Figure 47

How the Assessment Pilot Fills Gaps in Grades 1-3



Goals of the Grades 1-3 Assessment Pilot

There are three goals of the 1-3 Assessment Pilot. For each goal, VKRP has engaged or is continuing to engage in data collection and analysis:

1. Solicit feedback from teachers, school, division, and state leaders about existing assessments to learn what types of measures are currently being used in school divisions and to gain perspectives on gaps in data on students' mathematics, self-regulation, social skills, and mental health well-being.
    - This goal is being accomplished through the development, administration, and analysis of a **Division Assessment Survey**.
2. Create an inventory of current Early Mathematics Assessment System (EMAS) and Child Behavior Rating Scale (CBRS) items.

- For mathematics, the VKRP team created a crosswalk between Clements and Sarama's Mathematics Learning Trajectories[23,24], which describe the developmental path along which children learn mathematical concepts and skills, the Virginia Mathematics 2016 Standards of Learning, and existing EMAS items to guide item development.
- VDOE reviewed and provided feedback on the CBRS, which is used statewide in three and four-year-old pre-kindergarten and kindergarten classrooms to measure aspects of students' self-regulation, social skills, and mental health well-being. The CBRS has been used in research with children ranging in age from 3 to 10.

3. Pilot items in grades one through three in a subset of school divisions with the goal that these items could potentially be used as part of a statewide suite of assessments to better understand student progress in mathematics, social skills, self-regulation, and mental health well-being.
    - This goal is being accomplished through the **development and item piloting of EMAS mathematics items** led by UVA data collectors.

1-3 Assessment Pilot Timeline

Table 40 displays a timeline for the 1-3 assessment pilot activities. Ongoing and completed 2022-23 activities are listed as well as activities that will be completed during the 2023-2024 school year.

Table 40

Timeline for 1-3 Assessment Pilot Activities

Year	Activities

2022-2023	• Gather information from stakeholders, including subject matter experts
	• Launch division survey for assessments in grades one through three
	  ○ Understand what assessments are currently available across the state
	• Develop and pilot EMAS items
	  ○ Receive teacher feedback about EMAS items
	  ○ Revise items based on feedback

2023-2024	• Continue to pilot items in grades one through three • Provide report of findings to VDOE

Key Pilot Activity Updates

Below, we share updates on ongoing key pilot activities noted in the goals section above.

1-3 Division Assessment Survey

The purpose of the division assessment survey was to learn what assessments are currently being used division-wide in Virginia to understand students' development and learning in the early grades. Additionally, we were interested in learning what leaders and teachers would like to have available at the division and/or state level with respect to assessments for grades one through three.

[23] Clements, D. H., & Sarama, J. (2021). Learning and Teaching Early Math: Learning Trajectories Approach. Routledge & CRC Press.

[24] Sarama, J., & Clements, D. H. (2009). Early Childhood Mathematics Education Research: Learning Trajectories for Young Children. Routledge.

We asked respondents a series of questions about division-wide assessments currently being used in grades one through three to assess mathematics, social-emotional learning (with a particular interest in self-regulation and social skills), and mental health well-being. At least two division leaders from each of the 130 divisions across the state were identified, contacted, and asked to complete the survey.

The final sample of survey respondents included a total of 181 responses across 109 divisions. Respondents had a range of positions including, but not limited to, mathematics specialists, directors of elementary instruction, first to third grade teachers, and principals. All respondents had the opportunity to share their knowledge about assessments being used in their division across mathematics, social-emotional skills, and mental health well-being regardless of their position/specialty. Future analyses will aggregate responses from divisions with multiple respondents to understand the assessments that are currently available across the state.

Figures 48 through 50 show the number of respondents that reported having division-wide assessments for mathematics, social-emotional learning, and mental health well-being in grades one through three. Most divisions have an assessment to measure mathematics in grades one, two, and three. In contrast, most respondents reported not having a division-wide assessment for social-emotional learning or mental health well-being in grades one, two, or three.

Figure 48

Division Level Mathematics Assessments by Grade

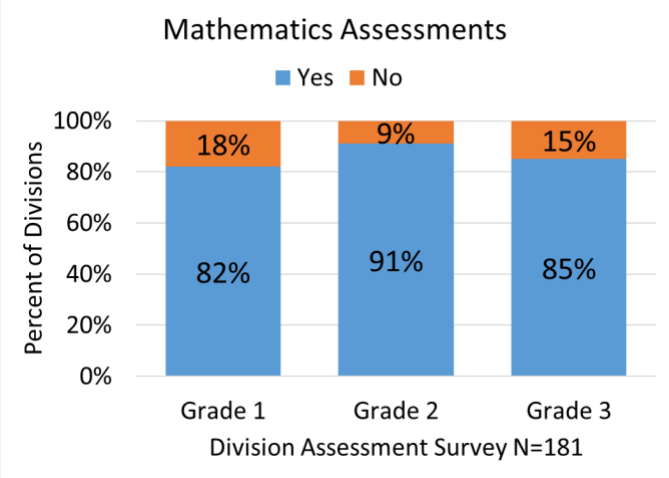


Figure 49

Division Level Social-Emotional Learning Assessments by Grade

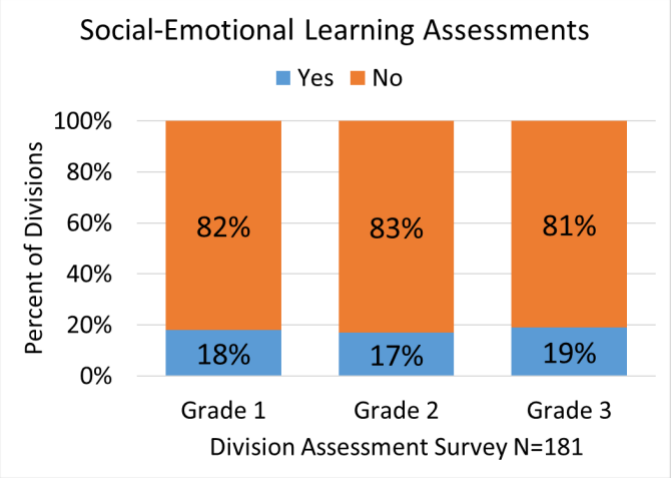
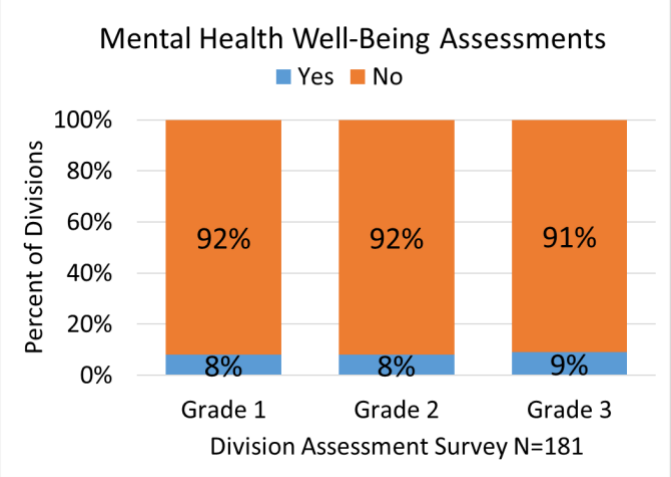


Figure 50

Division Level Mental Health Well-Being Assessments by Grade



Qualitative responses detailing specific assessments currently being used by each division, information about whether assessments track growth, how the assessments are used to support students and families, and the utility of a possible state-supported assessment are in the process of being analyzed.

EMAS Item Development and Piloting

EMAS Item Development

The Early Mathematics Assessment System (EMAS) is the measure currently used to assess students' mathematics skills in pre-kindergarten and kindergarten through VKRP. The EMAS has been developed to assess students' growth in mathematics knowledge and skills from the beginning of pre-kindergarten through the end of kindergarten.

One pilot activity has been to explore the possibility of extending the EMAS longitudinally for use in the early elementary grades, specifically grades one through three. The VKRP team formed a Mathematics Working Group whose members included key staff from VDOE's Office of STEM and Innovation Team and external consultants. Consultants included researchers with expertise in students' early mathematics development and mathematics coaches, coordinators, and specialists from four Virginia school divisions. Member expertise included mathematics, special education, and English language/multilingual learners (EL). The purpose of the Mathematics Working Group was to provide feedback and guidance to inform the development of the Mathematics Assessment Pilot in grades one through three, provide expertise on existing mathematics measures used nationally and/or in Virginia, and develop items to be piloted in the early elementary grades.

The working group created a crosswalk between Clements & Sarama's (2009) *Mathematics Learning Trajectories* and the *2016 Virginia Standards of Learning* to determine subdomains and skills for which new items should be developed. The VKRP team worked with consultants with mathematics expertise to create 237 new items across five domains (Numeracy = 52, Geometry & Measurement = 43, Patterning = 36, Computation = 84, and Probability & Statistics = 22) that were then reviewed by VDOE.

EMAS Item Piloting

The VKRP team recruited 12 school divisions to participate in an EMAS item pilot. We intentionally recruited a diverse group of divisions that included variability based on urbanicity and size. Table 41 shows the 12 divisions and the number of students assessed per division.

Table 41

Number of Students Assessed Per Division

Grades 1-3 Assessment Pilot Spring 2023 N=1627	
Division	n
Amherst County Public Schools	50
King George County Public Schools	141
Lynchburg City Public Schools	61
Madison County Public Schools	41
Norfolk City Public Schools	467
Pittsylvania County Public Schools	21
Richmond City Public Schools	281
Roanoke City Public Schools	22
Virginia Beach City Public Schools	273
Warren County Public Schools	97
Waynesboro City Public Schools	129
Wise County Public Schools	44

The goal of the pilot was to have data collectors administer items to students in first through third grades and to collect both quantitative and qualitative data.

In spring 2023, VKRP hired and trained data collectors to pilot test items in first through third grade classrooms. To date, we have collected data on 1,627 students across grades one through three. Our goal is to assess 900

students per grade to enable a rigorous psychometric analysis of item properties. Item-level piloting with trained data collectors will continue into the fall of 2023.

Teacher EMAS Review

In addition to quantitative and qualitative data being collected as part of the EMAS item pilot by data collectors, another important source of data is teachers' feedback on the newly developed EMAS items. In partnership with VDOE, a diverse sample of first, second, and third grade mathematics teachers were recruited across all eight superintendent regions to conduct a thorough review of the proposed EMAS pilot items. A total of 40 teachers participated in the teacher review.

Teachers were assigned to a specific mathematics subdomain (e.g., numeracy, computation, geometry) and were asked to share feedback about the appropriateness of directions for administrators and students, scoring criteria, and task stimuli for each item within their assigned domain. Teachers were also invited to participate in a listening session with the VKRP team and VDOE once they completed their item-level review.

As part of the teacher survey and listening sessions, teachers shared their thoughts about what should be considered when developing a mathematics assessment as well as what subdomains should be assessed. Teachers were also asked about the benefits and drawbacks of specific administration methods and if manipulatives should be provided for each grade level. Themes from the teacher survey and listening sessions are shared below.

- Theme 1: **The assessment should produce meaningful and useful data to support students' mathematics knowledge and skills and should measure growth over time.** Many agreed that a core purpose should be to identify areas for improvement with their students and to help guide instruction. Many felt that the assessment should be administered two to three times per year to show growth over time.
    - "I like that it's broken down by strands and given three times per year and able to see growth. We have a lot of assessments in reading, so it will be nice to see that type of growth in math and broken down by strands. So many assessments for reading and not a lot out there for math."
    - "I saw the benefits from VKRP in kindergarten. So, getting it as a 1st grade teacher is a great starting point in the beginning of the year, have it broken up like the MAP data. And to have the growth info to see what areas are still struggling in, areas to improve, and strengths."
    - "The assessment should enhance mathematics learning and support good instructional practice. For teachers and students alike, it should provide the opportunity to identify areas of understanding and misunderstanding."
- Theme 2: **A direct one-on-one assessment, rather than a computerized assessment, is the most valuable testing method.** However, teachers noted concerns about time for administration.
    - "If time was not an issue, definitely 1:1 administration. You get the best information that way."
    - "I feel that for first graders it should be done one-on-one and with hands on manipulatives."
    - "A lot of tests are 'how well can they manipulate a computer' – and if they don't have that experience with the manipulation, it's very difficult."
- Theme 3: **Physical mathematics manipulatives should be offered as part of the assessment at all grade levels**.
    - "Yes, because so many students learn in a variety of ways to understand different concepts."

    - "After 3rd grade, they should start weaning off manipulatives, but up through 3rd grade they should use them."
- Theme 4: **There is value in having a mathematics assessment that could measure growth in grades one and two. Consider value of additional third grade testing.** Teachers generally felt that an assessment would be valuable in grades one and/or two. Third grade teachers agreed there is already a considerable amount of testing and were concerned that any additional information collected would not outweigh the loss of instruction time to testing.
    - "Having a growth measure like this could be a game changer for the lower grades."
    - "What would this assessment add? We already take MAP testing 3 times and SOL testing 3 times/year."

1-3 Assessment Pilot Next Steps

- Responses from the division assessment survey will be synthesized to determine the wants and needs of each division surrounding assessments in mathematics, social-emotional learning, and mental health well-being for grades one through three.
- Item-level EMAS data will continue to be collected by data collectors in school divisions in the fall of 2023. Information from the teacher item review and listening feedback sessions along with the data collector item pilot will be used to create mathematics pilot assessments for grades one, two, and three.

2023-2024 Next Steps

Virginia's youngest learners arrive to pre-kindergarten and kindergarten with different experiences, including varied access and exposure to early learning opportunities in home, childcare, and school-based settings. Educators and administrators can continue to use VKRP data in combination with other formative and summative assessments to help target individualized instruction, determine teacher professional development needs, and, at the state level, inform policy decisions to help identify school divisions and regions most in need of support. VKRP data can also be used to help families understand what readiness means, and to create home-school connections focused on supporting young learners in educational settings. In partnership with VDOE, VKRP will continue to improve and expand the assessment system in the following ways during the 2023-2024 school year:

Continued Support for Pre-kindergarten and Kindergarten Implementation

VKRP will continue to support teachers', administrators', and divisions/programs' implementation of VKRP by providing in-person trainings, webinars, and online trainings and resources for teachers and school/division/program level administrators. Based on teacher and administrator feedback, additional training and data use modules and resources will be developed to assist teachers and administrators in understanding how best to use VKRP data to support students' learning and development. Finally, VKRP is working with divisions and programs this upcoming year to analyze their data, to encourage collaboration between grade levels, and to provide a more complete picture of the skill levels of young students.

Continued Three and Four-Year-Old Pre-kindergarten VKRP Expansion

VKRP will continue to be available for use in publicly funded four-year-old pre-kindergarten classrooms with continued implementation support for programs required to participate (e.g., VPI, ECSE, VECF Mixed Delivery) or who are voluntarily participating and targeted outreach to those who are not yet participating but may choose to participate. In 2022-2023, VKRP was made available for three-year-old children in publicly funded pre-kindergarten classrooms. VKRP will continue to be available for use in three-year-old programs and provide support for three-year-old programs in 2023-2024.

Grades 1-3 Assessment Pilot

Data collection will continue in the 2023-2024 school year, and item pilot data and teacher feedback will be utilized to create mathematics pilot assessments. Further analysis of the division assessment survey will be conducted to determine the needs of each division surrounding assessments in mathematics, social-emotional learning, and mental health well-being for grades one through three. VKRP will submit a report to VDOE that summarizes our findings from the pilot activities.

Mid-Year Assessment Pilot

A mid-year assessment timepoint will be piloted in pre-kindergarten and kindergarten classrooms during the 2023-2024 school year. The inclusion of a mid-year timepoint for VKRP will allow teachers to better monitor students' progress over the year and to make continual instructional changes to best meet student's individual needs. We will include Head Start programs as key stakeholders in the development of the VKRP Mid-Year assessment, which will support their continued adherence to the Head Start Program Performance Standard 45CFR 1302.102(C)(2)(ii) to aggregate and analyze child-level assessment data three times annually.

Collaboration With the Virginia Literacy Partnerships (VLP) Team

Continuing in 2023-2024, VKRP will collaborate with the Virginia Literacy Partnerships (VLP) team around their development and implementation of the Virginia Language & Literacy Screener (VALLS: Pre-K) as well as the new English and Spanish versions of the kindergarten literacy screener (VALLS: Kindergarten). The two teams regularly work together on assessment coordination and development, technology system development and expansion, data integration, teacher, and administrator training, troubleshooting, and data usage and reporting. Our Technology and Outreach and Communication teams work together to provide users with consistent literacy and VKRP communication.

Collaboration With STREAMin^3

The STREAMin^3 curriculum model supports skills and interactions that align to the Virginia Kindergarten Readiness Program (VKRP) and highly encourages use of VKRP as a progress monitoring tool. Through a competitive process and beginning in fall 2022, STREAMin^3 is being provided as a no to low-cost choice for eligible early childhood programs who receive public dollars. To support VKRP use in new STREAMin^3 programs, the VKRP and STREAMin^3 teams collaborated to encourage new programs, many of whom were small private childcare and family childcare programs, to use VKRP, beginning in summer 2022. With the onboarding of a new cohort of STREAMin^3 classrooms, VKRP will be potentially training approximately 206 interested educators and programs to administer VKRP in the 2023-2024 academic year. Like the previous year, all educators will receive VKRP kits and support throughout the school year.

Improved and Expanded Reports

VKRP includes a robust reporting system that provides a detailed snapshot of students' academic and social-emotional skills in the fall and spring of each academic year. These reports provide detailed, actionable information to help meet students' needs at their current skill levels and to give a snapshot of how students' skills have grown across the year. VKRP is planning to expand its capabilities to show students' growth across a single year and provide information about students' skills across both the pre-kindergarten and kindergarten years. VKRP plans to collect feedback and improve reports specifically designed to share information on students' academic and social-emotional skills with their families. Additionally, in collaboration with pre-kindergarten administrators and teachers, VKRP will launch revised new pre-kindergarten reports that can meet the needs of a variety of pre-kindergarten settings, including mixed-age (three and four-year-old together) classrooms.

Enhanced Resources for Families

VKRP, in collaboration with VDOE, continues to prioritize elevating families' voices and improving families' experiences with VKRP. During the summer and fall of 2023, VKRP and VDOE are co-leading a series of family focus groups to gather feedback on the VKRP family information reports and VKRP family resources. Feedback from focus groups will directly inform improvements to the VKRP suite of family resources. In addition, the improvements made from families' feedback will also be shared back to the focus group families during the winter of 2024.

Virginia Connects for Kids (VAConnects)

The VKRP team continues to collaborate with VLP and the LinkB5[25] teams to develop a coordinated integrated data system, VAConnects. This system will integrate statewide early childhood data collection initiatives to leverage data to maximize the impact of the three separate data systems. This critically important work will allow for better visibility into children's early experiences from birth to age five and how these experiences influence children's readiness for kindergarten and their future success in school. Through VAConnects, researchers, policymakers, and stakeholders will be better poised to make well-informed decisions regarding funding and professional development support across the state. VLP is launching in 17 school divisions this fall in VAConnects. VKRP and LinkB5 will begin to be incorporated into VAConnects this year.

[25] LinkB5. (2021). Academic Two-Pager. Retrieved from https://resources.linkb5.virginia.edu/hc/en-us/articles/6954727887387-LinkB5-Academic-Two-Pager

Appendices

Appendix A

VDOE Student Record Collection Codes

English Language/Multilingual Learners (EL) Flag	
Yes	If VDOE EL Services Code is: 1) Identified as EL and receives EL services, 2) Identified as EL but has refused EL services, or 4) Identified as formerly EL for each of the four years after exiting EL services.
No	If VDOE demographic data is present but EL Services Code is not present.

Disability Flag	
Yes	If any VDOE Primary Disability Code is present except "*Qualified individual under Section 504*"
No	If VDOE demographic data is present but Primary Disability Code is not present or if Primary Disability Code is "*Qualified individual under Section 504*".

Disadvantaged Status Flag	
Yes	Yes, student is disadvantaged if the student meets any one of the following: 1) is eligible for Free/Reduced Meals, or 2) receives TANF, or 3) is eligible for Medicaid.
No	No, student is not disadvantaged.

All public preschool students must be reported to the Student Record Collection (SRC) system when the school division is the fiscal agent, grantee, or sub-grantee. All public preschool students receive both a Preschool Funding Code and a Preschool Experience Code assigned by school divisions in the preschool year. Non-public preschoolers are not captured in the SRC system, and their Preschool Experience Code is parent-reported at kindergarten entry. If parent-reported preschool experience does not match the SRC system, the Preschool Experience Code will default to division records. This information comes from the Guidance for PK Funding and PK Experience Codes posted on the VPI website.[26]

Note. Further documentation of these codes is available on the VDOE website:

Virginia Department of Education Data Elements
Virginia Department of Education Student Record Collection Code Values

[26] Guidance for PK Funding and PK Experience Codes posted on the VPI website: https://www.doe.virginia.gov/teaching-learning-assessment/early-childhood-care-education/virginia-preschool-initiative

PK Experience Code	
Head Start	The preschool classroom for at-risk four-year-olds is funded by the federal Head Start grant in a community-based organization.
Public Preschool	A preschool program operated in the public school. This would include VPI, VPI+, Title I, ECSE, and Head Start programs – both in the public school and if the public school is the fiscal agent; and locally funded public preschool program.
Private Preschool/Daycare	The student is served by a preschool, child daycare, or other program provided by a private provider. This includes programs for-profit and non-profit providers, including faith-based programs and commercial daycare centers.
Department of Defense child development program	A preschool program operated by the Department of Defense on a military installation.
Family Home Daycare Provider	The student was served by a preschool or child daycare provided in a home.
No Preschool Experience	The student has not had a formal classroom preschool experience. The student was at home with a parent, family member, caregiver, nanny, etc.

PK Funding Code	
Head Start	Select Head Start as the funding source code if the student slot is fully funded with federal Head Start funds administered by the school division as the Head Start grantee.
Virginia Preschool Initiative (VPI – Four-Year-Old Students)	Select VPI 4-year-old program as the funding source code if the student slot is fully funded by the state Virginia Preschool Initiative (state/local match).
Special Education Preschool (Part B, 619)	Select Special Education Preschool as the funding source code if the student slot is fully funded with federal Special Education Preschool funds. This code may apply to students with Individualized Education Programs who receive special education and related services in a public special education early childhood classroom, regular early childhood program, or in a service-provider location (e.g., therapist's office). This code may also apply to students in a private community-based program if services are funded with federal Special Education Preschool funds. This funding code is not used if the student slot is funded by Head Start, VPI, or VPI+.
Title I Preschool	Select Title I Preschool as the funding source code if the student slot is fully funded with federal Title I, Part A funds, not mixed with state or other funding sources. *Ex. A student slot funded with VPI state funds in a classroom where the teaching assistant's salary is paid out of Title I funds would not be labeled with this funding code because the student slot is not fully funded by Title I. Instead, the slot would receive a #3 funding code as a VPI state funded slot.*
Local Funding for VPI Placement	Select local funding for VPI student placement if a student is in a VPI classroom but is funded locally. This funding code is typically used when a school division has been allocated state VPI funds for less than a full classroom of 18 students. *Ex. The division may be allocated 11 VPI funded slots. In order to maximize services for students, the school divisions places 7 more students in the room and provides local funds to account for the additional student slots. Seven students would be coded #8 in this scenario.*
Local Funding for Other Public Preschool Program	Select local funding that supports any other public preschool program not identified in this list.
Virginia Preschool Initiative (Pilot for Three-Year-Old Students)	Select VPI 3-year-old program as the funding source code if the student is a part of the VPI Pilot for 3s and is not 4 but turns 3 by September 30 and the slot is fully funded by the state Virginia Preschool Initiative (state/local match).
Mixed Delivery Grant Program (administered by VECF)	Select Mixed Delivery Grant if the student is participating in a Mixed Delivery Grant program administered by the Virginia Early Childhood Foundation (VECF)
Special Education Funding for VPI Placement	Select special education funding if a student with an IEP is placed in a VPI classroom but is funded through special education funds (618 or 619) and is not reported as one of the division's state allocated VPI slots (Funding Code #3) or allocated VPI Pilot for Three-Year-Olds slots (Funding Code #12). This funding code is typically used when a school division places a child with an IEP in a VPI classroom and the child is not funded by an allocated VPI slot, Head Start, or local funds. This funding code is not to be used if the student slot is funded by VPI or Head Start.

Appendix B

How VKRP Defines Readiness and Benchmark Estimates for Summative Purposes

Virginia defines school readiness as, "the capabilities of children, their families, schools, and communities that best promote student success in kindergarten and beyond." The VKRP readiness and/or benchmark estimates are calculated based upon the expected skill levels of a kindergarten student at the beginning (fall) and end (spring) of the school year. There are separate kindergarten benchmarks for fall and spring with spring benchmarks being higher than fall benchmarks.

For summative purposes, kindergarten students are categorized as ready or meeting the overall benchmark (fall) and/or meeting the overall benchmark (spring) if they demonstrate minimally expected skills for the fall or the spring (depending upon the data timepoint) of kindergarten for literacy, mathematics, self-regulation, and social skills. If a kindergarten student does not demonstrate the minimally expected skill in one or more areas at the respective timepoint (fall or spring), they are categorized as not ready or below the overall benchmark (fall) and/or below the overall benchmark (spring).

The VKRP assessment tools measure students' skills along a developmental continuum. However, it is common practice to establish benchmarks, often called thresholds or cut points, to help determine where students fall related to a standard. For VKRP, a benchmark at the fall and spring of kindergarten were established to estimate students' skills relative to developmentally appropriate expectations in each area.

Benchmarks for the mathematics (EMAS), self-regulation, and social skills (CBRS) assessments were established using developmental expectations in conjunction with students' scores across the Commonwealth. Students scoring below the benchmark on a specific assessment are most likely not demonstrating the level of skills one would expect for a kindergarten student in the fall or spring of kindergarten. The benchmarks vary from the fall to the spring based on increased skill level expectations.

A Note on Using Benchmarks:

Benchmarks can provide a quick, first-pass means of interpreting a student's scores. For instance, a student who scores well above the benchmark in each early learning area likely possesses a high level of skill and could benefit from additional challenge. For students whose scores are falling well below the established benchmark for a given early learning area, additional support may be needed to help the student's skill development. Similarly, teachers will likely need to provide additional scaffolding to students whose scores are falling close to the benchmark, including those who are slightly above it.

Although derived theoretically, it is important to recognize that imposing a benchmark on a measure that assesses students' skills provides only a rough, imprecise estimate, which can be particularly problematic for students who score just above or below a particular threshold. For these reasons, it is not recommended to use whether or not a student is above or below the benchmark as the sole criterion for understanding his or her skills within an early learning domain. For all students, continual progress monitoring is critical as students develop skills at different rates and respond differently to instruction and scaffolding.

Appendix C

Merged Funding Source Code

VKRP serves a larger population of children than those enrolled in public preschool programs, including children enrolled in Mixed Delivery classrooms. Current efforts are underway to close information gaps about funding sources. Below we provide information about how children's funding source was estimated for the 2022-2023 school year through multiple data sources.

All public preschool students receive a Preschool Funding Code (PK Funding Code) assigned and reported to the VDOE's SRC system by school divisions in the preschool year. VDOE PK Funding Code was missing for approximately 22% of the VKRP pre-kindergarten sample in the 2022-2023 school year, with the *"Mixed Delivery Grant Program (administered by VECF)"* code having limited utilization (Table 42).

The VLP system offers the opportunity for users to assign a Funding Source (PK Funding Source) as part of their pre-kindergarten student upload. Funding source codes entered into the VLP system are optional and were missing for over 75% of the VKRP pre-kindergarten sample in the 2022-2023 school year. However, the VLP PK Funding Source code for Mixed Delivery was present for a small portion of the VKRP pre-kindergarten sample (Table 43). Approximately 99% of students with VLP PK Funding Source of "*Mixed Delivery"* were missing a VDOE PK Funding Code.

Table 42

2022-2023 VKRP Pre-kindergarten Sample VDOE PK Funding Code Descriptives

PK Funding Code (VDOE)	Fall Total Pre-kindergarten Children	Spring Total Pre-kindergarten Children
	n (%)	n (%)
Head Start	2,362 (6.5)	2,303 (6.3)
Virginia Preschool Initiative (VPI – Four-Year-Old Students)	19,350 (53.5)	19,470 (53.5)
Virginia Preschool Initiative (Pilot for Three-Year-Old Students)	1,613 (4.5)	1,654 (4.5)
Local Funding for VPI Placement	469 (1.3)	423 (1.2)
Special Education Funding for VPI Placement	119 (0.3)	129 (0.4)
Special Education Preschool (Part B, 619)	2,335 (6.5)	2,435 (6.7)
Title I Preschool	1,094 (3.0)	1,126 (3.1)
Local Funding for Other Public Preschool Program	665 (1.8)	700 (1.9)
Mixed Delivery Grant Program (administered by VECF)	-	18 (<0.1)
Missing	8,179 (22.6)	8,119 (22.3)
Total	36,186 (100.0)	36,377 (100.0)

Table 43

2022-2023 VKRP Pre-kindergarten Sample VLP PK Funding Source Descriptives

PK Funding Source (VLP)	Fall Total Pre-kindergarten Children	Spring Total Pre-kindergarten Children
	n (%)	n (%)
Early Head Start	2 (<0.1)	-
Head Start	1,189 (3.3)	1,333 (3.7)
VPI 4YO	4,293 (11.9)	4,487 (12.3)
VPI 3YO	563 (1.6)	547 (1.5)
Local for VPI	60 (0.2)	71 (0.2)
Special Ed Preschool	307 (0.8)	260 (0.7)
Title I	9 (<0.1)	9 (<0.1)
Other Local	266 (0.7)	241 (0.7)
Mixed Delivery	533 (1.5)	1,167 (3.2)
Private	506 (1.4)	428 (1.2)
VA CCSP	8 (<0.1)	23 (0.1)
Funding Source Unassigned	28,450 (78.6)	27,811 (76.5)
Total	36,186 (100.0)	36,377 (100.0)

To provide an estimate of participation by funding source which includes Mixed Delivery children, available SRC data was merged with pre-kindergarten funding source codes entered into the VLP system. VDOE PK Funding Code was set as the default code. VDOE PK Funding Codes of "*Virginia Preschool Initiative (VPI – Four-Year-Old Students*)," "*Virginia Preschool Initiative (Pilot for Three-Year-Old Students)*," "*Local Funding for VPI Placement*," and "*Special Education Funding for VPI Placement*" were combined into a single "*VPI, local funding for VPI placement, special education funding for VPI placement*" code. If no VDOE PK Funding Code was present and a VLP Funding Source code was present, VLP Funding Source was set as the merged funding source code. VLP Funding Source codes of "*Early Head Start*" and "*Head Start*" were combined into a single "*Head Start*" code. VLP Funding Source Codes of "*VPI 4YO*," "*VPI 3YO*," "*Local for VPI*" were combined into a single "*VPI, local funding for VPI placement, special education funding for VPI placement*" code (Table 44).

Table 44

Creation of Merged Pre-kindergarten Funding Code

Default: PK Funding Code (VDOE)	If missing VDOE Funding Code: PK Funding Source (VLP)	Merged Funding Code
Head Start	Early Head Start Head Start	Head Start
Virginia Preschool Initiative (VPI – Four-Year-Old Students)	VPI 4YO	VPI, local funding for VPI placement, special education funding for VPI placement
Virginia Preschool Initiative (Pilot for Three-Year-Old Students)	VPI 3YO	
Local Funding for VPI Placement Special Education Funding for VPI Placement	Local for VPI	
Special Education Preschool (Part B, 619)	Special Ed Preschool	Special Education Preschool
Title I Preschool	Title I	Title I Preschool
Local Funding for Other Public Preschool Program	Other Local	Local funding for other public preschool
Mixed Delivery Grant Program (administered by VECF)	Mixed Delivery	VECF Mixed Delivery
	Private	Private
	VA CCSP	VA CCSP
Missing	Funding Source Unassigned	Missing