The Research on Early Literacy and Math Proficiency

Literacy is related to listening, speaking, reading, and writing. Before a child even starts school, they are able to build foundational skills in literacy. These early skills, such as oral language, alphabet knowledge, phonological awareness, and letter writing, are connected to long term school performance. Achieving reading proficiency by the end of third grade is a critical marker in a child’s educational development because by fourth grade children are expected to use reading to learn other subjects. The majority of curricula in English/Language Arts from pre-kindergarten thru grade 3 focuses on building literacy skills. Reading is a foundational skill that enables the building of context and the acquisition of knowledge. Beginning in fourth grade, the curricular focus shifts to “reading to learn,” rather than learning to read. Many subjects, including history, science, and math, require literacy in order to progress. Hoosier children who are proficient readers when they begin fourth grade have a better chance of comprehending and mastering at least half of the curriculum they will be taught in fourth and fifth grade.¹

A child’s third grade reading level correlates with future educational performance. Early literacy has a significant relationship with graduation rates across a variety of contributing factors. Mastering the fundamentals of reading can impact a child’s grade retention and academic progression. Consequently, 3rd grade reading level has been shown to be a significant predictor of eighth-grade reading level and ninth-grade course performance even after accounting for demographic characteristics and school-level factors.² Specifically, students who are performing above grade-level in third grade graduated high school and attended college at higher rates than their peers who were performing at or below grade level. Nationally, more than 8 in 10 students who failed to earn a high school diploma were struggling readers in third grade. While these struggling readers account for about a third of students across the nation, they represent more than three-fifths of those who eventually drop out or fail to graduate on time.³

Nationally, more than 8 in 10 students who failed to earn a high school diploma were struggling readers in third grade.⁴

Reading is a foundational skill that enables the building of context and the acquisition of knowledge.

Another critical academic milestone for children is proficiency in math at 8th grade. Math proficiency in eighth grade is one of the most significant predictors of students’ progress and success in high school, college, and beyond.⁴ Math standards also become more challenging during the middle grade years. In middle school, students begin to learn abstract math concepts. They use graphs and tables to solve problems that involve both positive and negative numbers. They also begin to learn more about geometry and proportional relationships. Eighth-grade math includes multi-step word problems that use whole numbers, decimals, fractions, and percentages all at once. Success in math can influence a child’s motivation and academic interest. Math anxiety has been linked to avoidance of the subject and worse math performance over time. By 8th grade, students already have formed preconceived notions about their math ability, which can then manifest in their demonstration of proficiency in math. Trouble in mastering math standards can exacerbate the anxiety students have, which then creates a cycle of content problems and more anxiety.⁵
Data on Student Achievement

One way to measure students’ mastery of academic standards in reading and math is through standardized assessments. These tests can help track students’ progress toward academic proficiency, providing some indication of students’ college- and career-readiness. Through examination of standardized assessment data, educators, administrators, parents, and policymakers can understand which students are on track toward mastery and which children are not. Standardized tests also are used as a tool for revealing the differences in achievement for different subgroups. Throughout American history, certain groups of students — specifically students of color and students receiving special education services — have received less access to high-quality instruction and well-resourced schools, when compared to their peers. This lack of access is evidenced when standardized test scores are used to measure student achievement. Data obtained through standardized tests provide comparable, consistent, and objective information about disparities in educational outcomes and inequalities in school funding. These data can be one source to help inform resource equity in schools and more fair treatment for students of color, low-income students, students with disabilities, and English Learners.

Indiana utilizes IREAD-3 (The Indiana Reading Evaluation and Determination) to measure of foundational standards of reading in third grade. This is Indiana’s most consistent and long-standing assessment of all its standardized assessments, therefore can show longitudinal trend data. Due to the COVID-19 pandemic, the entirety of these assessments was not administered to students in the Spring of 2020. Therefore, complete and accurate data are not available for the 2019-2020 academic year. In 2018-2019, 87.3% of 3rd grade students passed the IREAD-3. Since 2013, Indiana’s 3rd grade reading proficiency scores have been at or above 87%.

Though Indiana’s overall 3rd grade reading scores appear high, this is not the case for all student subgroups. Specific subgroups of students significantly underperform their peers demonstrating the opportunity gap that exists in our state. Students in special education (60.9%), students who receive free/reduced lunch (81.9%), and students who are English learners (73.4%) are less likely to pass IREAD-3 than their peers. Congruently, these students are also more likely to attend schools with higher teacher turnover, less funding and supplementary resources, and fewer programs during out-of-school time (e.g., afterschool, summers, and other breaks) when compared to their peers in general education and from more affluent backgrounds.

Disaggregating by additional subgroups of historically marginalized students — those experiencing homelessness or in the foster care system — illuminates the impact poverty and trauma can have on students’ academic results. Three-quarters (71.6%) of homeless students passed the IREAD-3 assessment in 2018-2019, a 15 percentage point gap from their non-homeless peers. Homeless students trailed all students within all racial/ethnic categories in IREAD-3 passing rates. Homeless students in special education and those that are English Learners also had the lowest IREAD-3 passing rates, a rate about 1.4 times lower than the general education population and non-English Learners, respectively. 77% of foster students passed IREAD-3, 10 percentage points lower than all students. IREAD-3 passing rates were lower for all foster students’ subgroups compared to all students within those subgroups except for English Learners. The data clearly illuminate that students who lack security, safety, and stability, especially when accompanied by the trauma and stress of homelessness and/or foster care, have compounding disadvantages and vulnerabilities that impact achievement.

### Percentage of Students Passing IREAD-3 by Subgroups, Indiana: 2018–2019

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaskan Native</td>
<td>74.2%</td>
<td>82.5%</td>
</tr>
<tr>
<td>Asian</td>
<td>74.2%</td>
<td>88.1%</td>
</tr>
<tr>
<td>Black</td>
<td>87.0%</td>
<td>74.2%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>91.6%</td>
<td>78.1%</td>
</tr>
<tr>
<td>Two or more races</td>
<td>87.0%</td>
<td>87.0%</td>
</tr>
<tr>
<td>Native Hawaiian or Other Pacific Islander</td>
<td>91.6%</td>
<td>68.5%</td>
</tr>
<tr>
<td>White</td>
<td>91.6%</td>
<td>91.6%</td>
</tr>
<tr>
<td>Free/reduced-price meals</td>
<td>81.9%</td>
<td>94.2%</td>
</tr>
<tr>
<td>Paid meals</td>
<td>93.1%</td>
<td>60.9%</td>
</tr>
<tr>
<td>General education</td>
<td>93.1%</td>
<td>93.1%</td>
</tr>
<tr>
<td>Special education</td>
<td>93.1%</td>
<td>60.9%</td>
</tr>
<tr>
<td>Non-English Learner</td>
<td>93.1%</td>
<td>93.1%</td>
</tr>
<tr>
<td>English Learner</td>
<td>89.3%</td>
<td>73.4%</td>
</tr>
</tbody>
</table>

Source: Indiana Department of Education
The National Assessment for Educational Progress (NAEP) is another standardized metric used to gauge children’s reading proficiency. NAEP allows for comparisons of Indiana student performance in reading and mathematics with other students across the United States. A random sample of students in grades 4 and 8 take NAEP every other year. The most recent assessment occurred in 2019.12

- 37% of Indiana students in 4th grade scored at or above proficient in reading, compared to 34% of their peers nationally. In 2017, the proficiency rate was 41%.
- Indiana has the highest percentage of 4th grade students scoring at or above proficient in reading (37%) among neighboring states: Michigan (32%), Illinois (34%), Kentucky (35%), and Ohio (36%).13

Despite Indiana’s strong statewide comparative data, similar disparities along racial and ethnic lines in achievement emerge on NAEP as they do on IREAD-3. In 2019, Indiana’s Black students had an average score that was 28 points lower than White students. This performance gap has been static since the early 2000’s. Hispanic students had an average score that was 17 points lower than White students, which has also been stagnant since the early 2000’s. Low-income students eligible for the National School Lunch Program (NSLP), had an average score that was 28 points lower than that for students who were not eligible.14 As stated above, these students are more likely to attend under-funded schools, live in poverty, come from communities experiencing violence and trauma, and face food and housing insecurity.15

### Percentage of Foster and Homeless Students by Subgroups Passing IREAD-3, Indiana: 2018-2019

<table>
<thead>
<tr>
<th>Subgroups</th>
<th>All students</th>
<th>Foster students</th>
<th>Homeless students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 3</td>
<td>87.3%</td>
<td>77.1%</td>
<td>71.6%</td>
</tr>
<tr>
<td>Black</td>
<td>74.2%</td>
<td>60.7%</td>
<td>61.6%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>78.1%</td>
<td>60.3%</td>
<td>74.1%</td>
</tr>
<tr>
<td>Two or more races</td>
<td>87.0%</td>
<td>76.1%</td>
<td>75.2%</td>
</tr>
<tr>
<td>White</td>
<td>91.6%</td>
<td>81.8%</td>
<td>79.9%</td>
</tr>
<tr>
<td>Special education</td>
<td>60.9%</td>
<td>56.1%</td>
<td>44.5%</td>
</tr>
</tbody>
</table>

Source: Indiana Department of Education
*Data on Asian/American Indian/Alaskan Native/Native Hawaiian/Pacific Islander are not available for foster and homeless students due to privacy.

### NAEP 4th Grade Reading Proficiency by Subgroup, Indiana: 2019

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Percentage of Students</th>
<th>Average Score</th>
<th>Percentage at or above NAEP Baseline</th>
<th>Percentage at NAEP Proficient</th>
<th>Percentage at NAEP Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian/Alaska Native</td>
<td>#</td>
<td>†</td>
<td>†</td>
<td>†</td>
<td>†</td>
</tr>
<tr>
<td>Asian</td>
<td>4</td>
<td>232</td>
<td>76</td>
<td>47</td>
<td>17</td>
</tr>
<tr>
<td>Black</td>
<td>13</td>
<td>200</td>
<td>43</td>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>Hispanic</td>
<td>12</td>
<td>211</td>
<td>56</td>
<td>24</td>
<td>5</td>
</tr>
<tr>
<td>Native Hawaiian/Pacific Islander</td>
<td>#</td>
<td>†</td>
<td>†</td>
<td>†</td>
<td>†</td>
</tr>
<tr>
<td>Two or more races</td>
<td>5</td>
<td>219</td>
<td>63</td>
<td>33</td>
<td>9</td>
</tr>
<tr>
<td>White</td>
<td>65</td>
<td>228</td>
<td>74</td>
<td>43</td>
<td>12</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>48</td>
<td>226</td>
<td>71</td>
<td>41</td>
<td>12</td>
</tr>
<tr>
<td>Male</td>
<td>52</td>
<td>218</td>
<td>64</td>
<td>34</td>
<td>8</td>
</tr>
<tr>
<td>National School Lunch Program</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eligible</td>
<td>54</td>
<td>209</td>
<td>55</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>Not Eligible</td>
<td>45</td>
<td>237</td>
<td>82</td>
<td>52</td>
<td>16</td>
</tr>
</tbody>
</table>

# Rounds to zero.
† Reporting standards not met
NOTE: Detail may not sum to totals because of rounding, and because the “information not available” category for the National School Lunch Program, which provides free/reduced-price lunches, is not displayed. Black includes African American and Hispanic includes Latino. Race categories exclude Hispanic origin.

Source: National Center for Education Statistics
According to the federal law prescribed in the Elementary and Secondary Education Act (reauthorized as Every Student Succeeds Act in 2015), Indiana must administer an annual assessment to measure students' proficiency against state-determined standards. In 2018-2019, Indiana switched from its previous assessment, ISTEP, to the Indiana Learning Evaluation Assessment Readiness Network (ILEARN). The assessment measures student achievement and growth according to Indiana Academic Standards for grades 3 thru 8 in English/Language Arts (ELA) and Mathematics. Under previous state tests, Indiana saw much higher percentages of students passing, compared to NAEP. As illustrated by the data below, the scores of ILEARN closely matches that of NAEP.\(^{16}\)

In 2018-2019, 38.0% of 8th graders (around 30,849 students) met the level of proficiency on the Math ILEARN assessment. One-third of eighth graders (34.0%) scored below proficient and 28.1% were approaching proficiency – both of which signify that around two-thirds of Hoosier students did not master the 8th grade math standards. Indiana’s math proficiency levels start higher in grade 3 and then decline through the higher grades. This could be due to the more advanced standards, a shaky foundation in numeracy and math that becomes compounded with each successive grade, or the anxiety students develop around math.\(^{17}\)

When disaggregating math proficiency by student subgroups, disparities in the achievement emerge along similar trend lines of Indiana’s other assessments – students of color and students in special education have disproportionately lower achievement rates.\(^{18}\)

The gap in 8th grade math achievement between students of different races and ethnicities is inextricably connected to gaps in resources for these very students.\(^{19}\) Students of color, those from low-income families, those with mild to moderate disabilities, and English Learners spend the vast majority of their school days missing out on four crucial resources: grade-appropriate assignments, strong instruction, deep engagement, and teachers with high expectations. In classrooms with more access to these four resources, students have higher achievement than their under-resourced peers, particularly if they started the school year behind their peers. Classrooms that served predominantly students from higher-income backgrounds spent twice as much time on grade-appropriate assignments and five times as much time with strong instruction, compared to classrooms with predominantly students from low-income backgrounds.\(^{20}\) The data show that inequalities in resources and opportunities for these children contributes to lower achievement levels, inadequate access to and success in college, and barriers to high-skilled careers.

**Average Grade 8 Math ILEARN Proficiency Rates by County, Indiana: 2018–2019**

<table>
<thead>
<tr>
<th>10 Highest Counties</th>
<th>10 Lowest Counties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crawford</td>
<td>Ohio</td>
</tr>
<tr>
<td>Dubois</td>
<td>Randolph</td>
</tr>
<tr>
<td>Hendricks</td>
<td>Switzerland</td>
</tr>
<tr>
<td>Posey</td>
<td>Grant</td>
</tr>
<tr>
<td>Hamilton</td>
<td>Vermillion</td>
</tr>
<tr>
<td>Warrick</td>
<td>Wayne</td>
</tr>
<tr>
<td>Jay</td>
<td>Jefferson</td>
</tr>
<tr>
<td>Monroe</td>
<td>Starke</td>
</tr>
<tr>
<td>Boone</td>
<td>Scott</td>
</tr>
<tr>
<td>Hancock</td>
<td>Knox</td>
</tr>
</tbody>
</table>

**8th Grade Students Passing Math ILEARN by Subgroups, Indiana: 2018–2019**

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian</td>
<td>28.6%</td>
</tr>
<tr>
<td>Asian</td>
<td>60.3%</td>
</tr>
<tr>
<td>Black</td>
<td>14.8%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>24.6%</td>
</tr>
<tr>
<td>Two or more races</td>
<td>31.3%</td>
</tr>
<tr>
<td>Native Hawaiian or Other Pacific Islander</td>
<td>40.3%</td>
</tr>
<tr>
<td>White</td>
<td>44.0%</td>
</tr>
<tr>
<td>Female</td>
<td>38.7%</td>
</tr>
<tr>
<td>Male</td>
<td>37.3%</td>
</tr>
<tr>
<td>Free/reduced-price meals</td>
<td>22.8%</td>
</tr>
<tr>
<td>Paid meals</td>
<td>50.8%</td>
</tr>
<tr>
<td>General education</td>
<td>42.9%</td>
</tr>
<tr>
<td>Special education</td>
<td>8.8%</td>
</tr>
<tr>
<td>Non-English Learner</td>
<td>39.0%</td>
</tr>
<tr>
<td>English Learner</td>
<td>7.4%</td>
</tr>
</tbody>
</table>

**Source:** Indiana Department of Education
Similar to the state assessment results, the NAEP results for 8th grade math show only a little over one-third of students proficient.

- 37% of Indiana students in 8th grade scored at or above proficient in math, compared to 33% of their peers nationally.
- Indiana has the second highest percentage of 8th grade students scoring at or above proficient in math (37%) among neighboring states: Kentucky (29%), Michigan (31%), Illinois (34%), and Ohio (38%).

Like the NAEP reading data, in 2019, Black students had an average score that was 30 points lower than White students, which has been a static gap since 2000. Hispanic students had an average score that was 18 points lower than White students. Low-income students eligible for the National School Lunch Program (NSLP) had an average score that was 26 points lower than that for students who were not eligible, which was wider than the gap in 2000.

The toll of the educational disruptions induced by the pandemic have taken on student learning may not be known for months or years. Data from national education testing organizations have begun to offer an early look at the potential impact. In fall 2020, students in grades 3–8 performed similarly in reading to same-grade students on the NWEA MAP tests (which measures growth in and mastery of specific standards) in fall 2019 nationally. The scores on the NWEA math assessments were about 5 to 10 percentile points lower when comparing 2019 to 2020, signifying that students are falling behind relative to their prior standing. While a majority of students scored at levels similar to prior years, Black and Hispanic students and those who attend high-poverty schools saw slight declines in their scores. A large share of students who normally take NWEA tests was missing from the data set, and those students are at the highest risk of falling behind academically.

The findings from the NWEA test data were echoed in the fall results of the Star assessment, a similar formative assessment used across the nation. Star data indicated that reading scores were down slightly and math scores were down significantly compared to a typical year. Similarly, Black, Hispanic, and American Indian students, as well as rural and high-poverty populations, lost more ground than students with more advantages during the COVID pandemic. These data also reflect fewer students taking the assessment than in previous years, reiterating that many children are missing school.
The winter study of Star assessment data showed that student growth overall during the first half of the 2020–2021 school year was approaching typical or expected levels in both reading and math. Specifically, median fall-to-winter Star Student Growth Percentile (SGP) scores for reading and math were 46 and 48, respectively, which were close to the typical growth score of 50. Overall negative impacts on math have lessened in every grade, though they remain relatively large in late elementary and early middle school, where students are about 8 to 11 weeks behind mid-year expectations. Consistent with fall growth analysis, however, there were disparities in results by subgroup, with Black, Hispanic, American Indian, students with disabilities, and English Learner students growing less than the overall sample. Likewise, students attending urban or Title I schools were more likely to experience below-typical rates of growth. Slower-than-typical within-year growth rates could increase students’ risk for falling farther behind.

A study released by McKinsey & Co. estimated that the shift to remote school in the spring set White students back by one to three months in math, while students of color lost three to five months. If the status quo remains through June 2021, McKinsey predicts White students will lose seven to eight months of math, and students of color will lose 11 to 12 months. Potential solutions to address the growing achievement gaps include:

- Scaling high-intensity tutoring,
- Creating vacation academies over breaks to serve small groups,
- Protecting the neediest school districts from spending cuts,
- Adding academics into summer camp activities and other wraparound programming, and
- Touching base with missing students and their families weekly beyond virtual media (e.g., in-person home visits or delivering supplies).

Based on early results from Indiana’s standardized assessment, ILEARN, shared by the Indiana Department of Education, there were decreases in English and math scores. Indiana’s decreased math scores follow the national trend of being more significant than English. The Indiana Department of Education did not share specifications on the decline of assessment scores, noting that results will be finalized and published in July 2021.
On April 29, Governor Holcomb signed HEA 1008-2021 into law to establish the Student Learning Recovery Grant Program and Fund. This program appropriates $150 million for Fiscal Year 2021 to provide recovery learning and remediation to students in Kindergarten through grade 12 who:

1. Have experienced learning loss;
2. Have fallen behind in acquiring anticipated grade level academic skills and knowledge;
3. Have scored below academic standards or average benchmarks; or
4. Are at risk of falling below academic standards due to the disruption in student education caused by the COVID-19 pandemic.  

On June 1, the Indiana Department of Education (IDOE) announced that $122 million was awarded to 110 community partners across 83 counties. Award recipients will provide support to students in literacy, math and college and career readiness this summer and throughout the coming school years via focused tutoring, afterschool programming and other enhanced learning opportunities. As part of these awards, schools will work with IDOE to track student outcomes and monitor the success of strategies and programs to close gaps in student learning due to the COVID-19 disruption. To see the full list of award recipients, please see here. To see awards by county, please see here.

Additional resources for local practices to address student learning loss:

- **School Practices To Address Student Learning Loss and Broad-based Academic Supports for All Students** (EdResearch for Recovery)
- **Resources and Examples: Learning in the Time of COVID-19** (Learning Policy Institute)
- **Learning Acceleration Guide** (TNTP)
- **A Blueprint for Scaling Tutoring Across Public Schools** (Brown University)
- **COVID-19: Evidence-Based Resources** (Regional Educational Laboratory Program)
- **Keeping Pace: Strategies for Ensuring Equitable Continuity of Learning During the COVID-19 Pandemic** (REL-Mid Atlantic)

**Overcoming Barriers to Proficiency**

Children from disadvantaged households experience gaps in their development of literacy and numeracy skills before they even reach kindergarten because of the well-documented lack of accessibility to high-quality early childhood education. Nationally, only 48% of low-income children are ready for kindergarten-level materials, compared with 75% of moderate- or high-income children. Among low-income children, 30% score low on reading readiness and 26% lack readiness in math skills. To close early achievement gaps between low-income children and their peers, children from disadvantaged backgrounds must have access to adequate resources and high-quality programs between their preschool years and 3rd grade.

Nationally, only 48% of low-income children are ready for kindergarten-level materials, compared with 75% of moderate- or high-income children. Among low-income children, 30% score low on reading readiness and 26% lack readiness in math skills.

As illustrated by the data above, not all students receive the same reading or math education. Opportunities to engage with more challenging math content throughout grades K–8 are typically more available to White and Asian students in suburban schools than to disadvantaged youth in schools serving low-income and students of color. If children are not exposed to, supported through, and achieving in challenging math courses early in their academic career, they will not be ready for the more advanced standards in 8th grade. Proficiency in 8th grade math reflects the overall math proficiency and mastery a student has beginning in early grades.

Additionally, children with learning disabilities, particularly dyslexia, dysgraphia, and dyscalculia, require additional supports and targeted, differentiated instruction to achieve proficiency in reading and math. Skills that can cause difficulty for students with disabilities are possible to attain, but they must be taught early to address any persistent problems. For example, multisensory instructional interventions in early childhood can help develop reading and math skills in students to help them master these standards. Technology also has the potential to transform teaching and learning for students with disabilities as a supplement, rather than a substitution, for traditional instructional tools and supports to help students perform complex tasks.
A number of low-income and students of color need greater access to ensure all students are able to master literacy and numeracy skills. Repeating the same curriculum — specifically in 3rd grade reading or 8th grade algebra — has not been shown to be effective in helping students master these critical standards; something different in their instruction must occur. Because 3rd grade is the first time when students are assessed via a summative standardized test, this is often the first time gaps in understanding are identified. Schools and districts must develop early identification systems and assessments that identify learning gaps and provide struggling readers with early intervention.

Locally:

- **Develop local initiatives and strategies to increase interventions in early childhood education:** A number of diverse school districts have launched comprehensive education initiatives that use community-building to tackle poverty-related impediments to early learning and student success. School districts in Austin, Texas, Pea Ridge, Arkansas, and Joplin, Missouri, for example, have leveraged district and/or private funds to create initiatives and expand access to high-quality pre-K for their most vulnerable young children. Pea Ridge funds seats for low-income students through a combination of grant money and paid seats. Though each initiative is tailored to the districts’ specific needs, the initiatives share common elements that boost early achievement and sustain supports throughout children’s academic trajectories. These supports include investments in supports for new parents; access to childcare, quality pre-K, and other early childhood education experiences; attention to the full range of students’ needs, including health and nutrition support and enriching opportunities both within and outside of the classroom; efforts to reduce student absenteeism; strong parent and community engagement; and targeted strategies to boost college, career, and civic readiness.

- **Promote early intervention over retention:** Early identification and intervention for struggling students are the strategies most likely to improve student performance when compared to grade retention or course repetition. Repeating the same curriculum — specifically in 3rd grade reading or 8th grade algebra — has not been shown to be effective in helping students master these critical standards; something different in their instruction must occur. Because 3rd grade is the first time when students are assessed via a summative standardized test, this is often the first time gaps in understanding are identified. Schools and districts must develop early identification systems and assessments that identify learning gaps and provide struggling readers with early intervention.

- **Provide targeted professional development for teachers:** To ensure all students are able to master literacy and numeracy skills, teachers need professional development in the areas of differentiated instruction, formative assessment, and data analysis. This can occur during their preparation programs, induction when transitioning into a new district, or in-service throughout the year.
  - Some may need specific professional education to build their skills and knowledge in the fundamentals of literacy (oral language, listening comprehension, phonological awareness, word study, vocabulary, fluency, or comprehension of literary and informational text) and numeracy (the ability to use numbers and solve problems in real life) instruction.
  - Additionally, schoolwide approaches, such as Universal Design for Learning and a multi–tier system of supports, can benefit all students, especially those with learning and attention issues. More educators need access to best practices in evidence–based instruction for different kinds of learning and attention issues. For example, many educators may have heard of using multisensory structured language education, but few educators are trained to use this approach to help students with dyslexia make progress in reading or those with dyscalculia develop their number sense.

- **Allow for individual development:** The importance of proficiency in 3rd grade reading and 8th grade math can inform macro–level policies, decisions, and resources to help ensure all students, regardless of their backgrounds, reach these goals. Specifically, schools and districts can allocate funding for personnel to provide additional support for those students to help them master both of these academic benchmarks. At the individual level, some students may require supplementary supports and time to reach proficiency. For some students, this may mean accommodations via special education; for others, differentiated instruction for unique learning style may be required. The resources and supports for those who do not reach proficiency can be individualized. At the student level, educators, schools, and districts understand they should remediate and help students reach these missed proficiency milestones throughout their academic career. Additionally, as data continually demonstrate the clear link between economic advantages and student achievement and trauma and academic development, educators and policymakers should focus on improving access and increased opportunities for students who fail to achieve proficiency by specified benchmark grade levels.

- **Revise processes for Algebra I identification:** Though low-income and students of color need greater access to challenging math courses, placing all 8th graders into Algebra I, regardless of their preparation, sets up many students to fail. Additionally, districts often leave key aspects of policymaking about student placement to school sites. Targeted strategies, such as using students’ prior standardized test scores and grades to predict at least 70% chance of success in Algebra I, can identify students who might be exposed to challenging and advanced math coursework beginning in 8th grade.
  - Wake County in North Carolina implemented such a strategy as a way to ensure students from certain backgrounds were not being tracked into lesser math courses. A study of their policy can be found [here](http://example.com). Schools can be intentional in their efforts to ensure curricular coherence and evaluate student outcomes, and all students’ instructional needs to ensure everyone has an equal and equitable opportunity.
Statewide:

• **Implement a Pre-K thru 3rd grade approach**: High-quality early education is a cost-effective investment for improving both early and later school success, particularly for students in low-income families and for students of color. Academic, social, and behavioral gains for students are sustained if high-quality PreK is linked with the elementary grades to create a common structure and coherent sets of academic and social goals. An integrated PreK-3rd approach to education can include:
  - Aligned curriculum, standards, and assessment from PreK through third grade;
  - Consistent instructional approaches and learning environments;
  - A kindergarten readiness exam that provide valid, reliable, and comparable data; and
  - Availability of PreK for all children ages 3 and 4.

Classrooms in each year of the preschool-to-third-grade continuum could incorporate all elements of quality, promote children’s development, and support higher-order skills in literacy and math while growing social and emotional skills. Developing common, quality measures and approaches to teaching and learning across the preschool-to-third-grade continuum will provide many young children the promise of a high-quality academic career.

• **Implement an equitable kindergarten readiness inventory**: Building off of vertically aligned standards and curricula beginning in the third grade, Indiana could adopt a statewide kindergarten readiness inventory to gauge children’s levels of readiness at school entry in early numeracy, early literacy, and social-emotional skills, all of which can predict difficulties in later academic performance. Kindergarten readiness inventories improve classroom instruction and provide an understanding of the population at an aggregate level to support policy making regarding early learning resources and systems. Educators and parents obtain information about kindergarten readiness of individual children and various subgroups of children, identifying those children and groups that will require remediation and additional support. Additionally, when gaps in readiness are identified, schools need to have adequate resources available to them to support the strategies necessary for closing these gaps.

• **Maintain high standards and expectations with the necessary supports**: Under the federal Every Student Succeeds Act, up to 1% of the student population may qualify for alternative standards and assessments. These students are those with the most significant cognitive disabilities. One percent of all students in the general population is approximately 10% of all students with disabilities, which indicates that 90% of students with disabilities and 99% of the total general population can meet Indiana’s college- and career-ready standards. Because Indiana’s standards and assessments mirror nationally recognized college- and career-readiness benchmarks and assessments (e.g., NAEP), maintaining the current standards and expectations will ensure all children are ready to be successful after high school. The Individuals with Disabilities Education Act
entails the maintenance of high expectations for students with disabilities be paired with the supports and accommodations that will help them master those standards. A reallocation of funding and resources will be necessary to provide each student with his/her/their necessary supports to take advantage of opportunities and reach these benchmarks.

- **Weigh 3rd grade reading and 8th grade math separately in school accountability model:** Because of the correlation between 3rd grade reading and 8th grade math and a child’s likelihood to graduate on time and be successful in postsecondary pursuits, Indiana can weight both of these as separate indicators in its accountability model. Valuing these metrics within the state’s accountability model can illustrate the effectiveness of a school’s early literacy program and the vertical alignment of literacy standards, as well as encourage schools to make these investments early in students’ academic careers. The two options the State could pursue with these indicators are:
  - Measuring 3rd grade literacy and 8th grade math proficiency as standalone metrics in the model; or
  - Weighing proficiency in 3rd grade literacy and 8th grade math at a higher percentage than the other standardized assessments.

Either option will signal the importance of these metrics for transparent, data-based policy decisions. Additionally, placing emphasis on these metrics will encourage schools and districts to provide interventions early in students’ academic careers.

**Nationally:**

- **Prioritize high expectations for children in all federal laws and guidance:** Communities, states, and national leaders are essential in the development and funding of efforts to expand early learning, to develop integrated PreK-3rd initiatives, to reduce chronic absenteeism, to expand summer learning opportunities, to assure that schools provide high-quality instruction, and to provide access to health insurance and to effective opportunities for parents to increase their educational levels and human capital.
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