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StriveTogether®

Cradle-to-Career Outcomes Data Guides: *Kindergarten Readiness*

Developed in partnership with URBAN INSTITUTE

Kindergarten Readiness

StriveTogether's recommended indicator considers the variation in metrics available and draws on current approaches used by kindergarten and early learning experts. This guide provides information on why kindergarten readiness matters, recommended indicators, data sources for indicators, detailed data specifications, how to calculate this outcome, data disaggregation, frequently asked questions, learning resources and data sharing. This guide also recommends data collection strategies, sources and methods for building data practices that can be used to better serve communities.

Why this outcome matters

Key takeaways:

- **High-quality early learning experiences have long-term benefits for the development and academic outcomes of students.**
- **Gaps in early learning are prevalent for children experiencing poverty because of limited access to quality early learning programs.**
- **Although the federal government has defined kindergarten readiness, there is no standard assessment or universal standards for assessment, so approaches vary significantly by state.**

High-quality early child care and education is crucial for positive developmental outcomes in children and is a foundation for later academic performance. The first eight years of a child's life are important for brain development for future learning, health and life success (CDC 2022). Early learning is also key to the long-term achievement of young children. For example, kindergartners who perform better on math, reading and attention skills are more likely to demonstrate higher achievement in third grade (Duncan et al. 2007). Educational disparities emerge early on, making early childhood a key point in addressing larger issues around equity (i.e., structural racism, xenophobia, opportunity) (ASU). The quality of early learning programs is critical to the short- and long-term academic, social and economic success of students enrolled (CAP 2017). Research suggests that high-quality preschool participation increases quality time that children experiencing poverty spend with their mothers — such as time spent reading, playing and talking. There are also modest but sustained increases in their eighth-grade math scores. However, it does not have the same benefits for children who are not experiencing poverty (Brookings). Cost benefit analysis research shows providing high-quality early learning opportunities can impact the social and economic trajectory of children, leading to a large financial return to society (Dalziel et al. 2015; Sylvia & Wiltshire 2007).

Because public school systems typically focus on kindergarten through 12th grade, early learning opportunities, such as publicly funded pre-K, are not guaranteed or mandatory. Families experiencing poverty have less access to early learning programs than families not experiencing poverty (Chaudry et al. 2017). Although public pre-K, such as Head Start, is more widely available for students experiencing poverty — which StriveTogether defines as two times the federal policy level — there are income thresholds to qualify. Families making just above the federal poverty line ($20K-50K a year) who do not

qualify for targeted public programs such as Head Start and cannot afford private ones are left with fewer options (**NCES 2019**). As a result of unequal opportunities and program quality, children experiencing poverty lag behind their more advantaged counterparts on most if not all aspects of readiness (**Lazer 2008; Valentino 2017**). Although readiness gaps between students experiencing poverty and their peers has narrowed in recent decades, gaps remain (**Reardon & Portilla 2016**).

The American Academy of Pediatrics recommends that kindergarten readiness become an outcome measure for a coordinated system of community-based programs, as factors in children's early experience can affect health and learning trajectories (Williams, et al.. 2019). Population-level measures of readiness can inform community strategies to promote readiness, including targeted funding for pre-K programs, professional development opportunities for early learning educators and engagement with parents on early learning (**Wesley & Buysse 2003**).

Federal role in defining and measuring kindergarten readiness

The federal definition of school readiness takes a holistic approach at defining readiness at various support levels. School readiness means children are ready for school, families are ready to support their children's learning and schools are ready for children. Head Start, a federal pre-K program, views school readiness as children possessing the skills, knowledge and attitudes necessary for success in school and for later learning and life (**ECLKC**).

Five domains of kindergarten readiness

In 1990, the National Education Goals Panel was established to set several education goals from early childhood into adulthood. Goal 1 was set to address the subjective way of assessing early learning so that "by the year 2000, all children in America will start school ready to learn" (**Copple 1990**). This document provided guidance for the early childhood education field that continues to guide the field today. It recommended that early childhood education providers assess the following five comprehensive domains of future success:

1. **Language and literacy development:** Assessments on language and literacy development screen for basic vocabulary and a child's ability to communicate thoughts and needs. These two interrelated skills are often grouped together.

   What is measured under this domain: An assessment within the language and literacy domain will account for children's ability to listen or speak. Other measures of language ability consider social uses of a language, vocabulary and meaning, and questioning or creative use of language. An assessment measuring literacy will account for literature awareness, print awareness, story sense and writing process (**Kagan et al. 1995**).

2. **Cognition and general knowledge:** Cognitive development and knowledge represent the process of growth and the accumulation and reorganization of experiences that children gain from their environments (**ECLKC 2021**). Children's opportunities to interact with individuals and materials become the foundation for later learning, allowing them to construct knowledge of patterns and relations, cause and effect, and methods of solving problems in everyday life.

   What is measured under this domain: Assessments of cognition and general knowledge may consider the physical knowledge of children (facts about the features

of something), the social knowledge (names and conventions, made up by people), or the logico-mathematical knowledge (the creation of relationships, constructed within the mind of the learner).

3. **Approaches toward learning:** Assessments on approaches toward learning focus on how children learn in different ways and the way that children become involved in learning and developing their inclinations. This domain refers to the inclinations, dispositions and styles of learning rather than using a uniform, "cookie cutter" approach to education.

   What is measured under this domain: Predispositions, learning styles and executive functions are the main aspects of learning assessed within this domain. Predispositions relate to the influence gender, temperament, cultural patterns and values have on learning. Different aspects of learning styles may include a child's openness to and curiosity about new tasks; initiative, task persistence and attentiveness; reflection on and interpretation of information; imagination and invention. Executive function is a subdomain to approaches toward learning that includes attention, working memory and self-control, which are key predictors of academic outcomes in early childhood and later schooling (**Developing Child Center**).

4. **Physical well-being and motor development, including adaptive skills:** In early childhood, physical well-being is associated with optimal motor development, from large motor movements that occur on the playground to small work required for holding a crayon or putting together puzzles (**Kagan et al. 1995**).

   What is measured under this domain: Assessments targeting physical abilities may target various motor skills (gross motor skills, fine motor skills, sensorimotor skills, oral motor skills). Measures related to physical development may target the rate of growth, physical fitness and body physiology.

5. **Social-emotional development**: This domain is associated with the evaluation of a child's ability to express their feelings and emotions. This area focuses on a child's interaction with others and considers their social-emotional understanding, relationship with peers and adults, and forms of play.

   What is measured under this domain: Assessments targeting social-emotional development will measure emotional development based on self-concept (traits, habits, abilities, motives, social roles, goals and values that define how we perceive ourselves). Additionally, emotional development is measured based on the ability to comprehend the feelings of others (empathy, understanding, acceptance). On the other hand, social development considers a child's ability to form and sustain social relationships with adults and friends. This includes social competence with adults and with peers.

These domains were established several decades ago and remain the foundational understanding of school readiness. School readiness is multifaceted, encompassing the physical health, social-emotional, cognitive, and linguistic status of children. Head Start, a federal program that promotes the school readiness of children from birth to age five, defines school readiness as children possessing the skills, knowledge and attitudes necessary for success in school and for later learning in life (**Head Start**).

Although there is a **federal definition of early readiness**, there is not a federal readiness

assessment, and there are no universal standards in terms of assessment, curriculum or pedagogies for these domains, nor are there established levels of domain "readiness" that indicate whether a child is ready for kindergarten via assessment (Reginstein et al. 2017).

State role in defining and measuring kindergarten readiness

States have adopted guidelines as well as their own assessments and definitions of readiness, like they have done for federal math and reading requirements. All 50 states and six territories have developed early learning standards and guidelines (ELGs) for preschool-age children and virtually all have ELGs for infants and toddlers (ACF). Some states have developed their own kindergarten readiness standards and measures internally and therefore can vary significantly, with some taking the form of brief goal or vision statements, while others include detailed lists of school readiness indicators across domains (Pierson 2018).

More than half of states have their own definition for kindergarten readiness (ACF 2016), and at least 43 states have assessments to help educators better understand what children know upon entering kindergarten (Reginstein et al. 2017).

Most states use these assessments for one of the following purposes:

- To inform classroom instruction, curriculum planning and professional development needs.
- To identify children in need of specialized supports or interventions.
- To provide a statewide snapshot of what children know when they enter kindergarten, monitor changes over subsequent kindergarten cohorts and inform public policy and public investments in early childhood.
- To equip families and advocates with information needed to support children and systems change (RELP 2016).

Each state and the District of Columbia has an advisory council that establishes the state's early care and education system (ECS). The governance structures of states' early care and education systems vary significantly and determine how programs and services like Head Start and Early Head Start, state and local pre-K programs, early intervention services, and other early care and education entities, are administered and interact to support young children.

Recommended indicators

Although there are federally recommended domains for kindergarten readiness, the lack of a specific, recommended metric means the best data available will vary by location. The criteria for identifying the best available data are listed below in order of StriveTogether's preference, with the Preferred indicator being the best, and Alternatives #1, #2, and #3 following in order of preference. Regardless of the indicator used, it is important that cradle-to-career partnerships understand whether their indicator applies to all children in the community, and whether it is an assessment or screener, according to this document's standards.

- The **Preferred** kindergarten readiness metric uses state or district defined assessment outcomes that apply to all children entering the community's kindergarten. The assessment should be administered before kindergarten or at the beginning of kindergarten and reflect children's growth and development across multiple domains.

Assessments are compared over time. Assessments are preferred to screeners as assessments are used to identify improvements (ECLKC).

- Formative assessment: An assessment that provides information to monitor progress and meet ongoing needs. This assessment usually takes place at the beginning of the school year (Yale).
- Summative assessment: An assessment that evaluates cumulative learning over a period of time. This assessment usually takes place at the end of the school year (Yale).

- The **Alternative #1** kindergarten readiness metric uses state or district defined screening outcomes that apply to all children entering the community's kindergarten. The tool is used to screen all children in the community for developmental delays or opportunities for intervention.

  Screeners provide a snapshot of whether the child's development is on track (ECLKC). They can be conducted by doctors, nurses, teachers or practitioners and are generally used to address developmental or behavioral concerns and diagnose disabilities, as well as to connect families and children to resources or further evaluation (CCD). Screeners are meant to identify developmental or behavioral disabilities such as autism, learning disorders or attention-deficit/ hyperactivity disorder.

  - Developmental screener: A screener that measures a child's cognition, fine and gross motor skills, speech and language, and/or social-emotional development.
  - Social-emotional screener: A screener used to identify potential behavioral problems in children.

The **Alternative #2** kindergarten readiness metric uses a teacher-implemented curriculum assessment upon kindergarten entry. Ideally, it applies to all children in the community and is used across all of the community's kindergarten classes.

  Curriculum assessment: An assessment that evaluates students' mastery of curriculum. This assessment usually takes place several times throughout the school year.

- The **Alternative #3** kindergarten readiness metric uses school- or district-provided data on pre-K enrollment prior to kindergarten entry for all kindergarten-age children in the community. The pre-K attendance rate is a contributing indicator for kindergarten readiness and is acceptable if other indicators are not available.

Because states or districts have discretion in determining what is in their kindergarten readiness or entry assessments, they can include developmental screeners or assessments (ECS).

Data sources for indicators

It will be helpful to ask the following questions to identify the best and most comprehensive data option available.

Questions to ask:

1. Is there an assessment, a screener or both that your state or district(s) use for all children?

a. If assessment, is it formative or summative?

i. Does it cover all five domains?

1. Language and literacy development
2. Cognition and general knowledge
3. Approaches toward learning
4. Physical well-being and motor development, including adaptive skills
5. Social-emotional development

ii. Does it provide a norm- or criterion-referenced cutoff for kindergarten readiness?

1. Describe how it is graded.

iii. If 1ai and 1aii are yes, this data would be Preferred

b. If screener, what kind of screener? Describe the screener.

i. This data would be **Alternative #1**

c. If both, are you able to disaggregate the assessment data?

i. If yes, disaggregate the assessment data and it would be **Preferred**

ii. If no, this data would be **Alternative #1**

2. Do kindergarten teachers in your community implement a curriculum assessment at the beginning of kindergarten?

a. Is the same assessment used for all children in your community?

b. If yes, does this include both public and private pre-K?

i. This data would be Alternative #2

c. If no, Alternative #3 is the best option. Consider working with community members to try to come to an agreement on the curriculum assessment that could be used in the future.

3. Do your target schools and districts have administrative data on which children attended pre-K prior to their entry into kindergarten?

a. This data would be Alternative #3

Detailed data specifications

Definitions

Regardless of which indicator is used, the general way to find the percent of children ready for kindergarten is to divide the number of students deemed "ready" for kindergarten in the community by the total number of kindergartners in the community and then multiply by 100. This quantity will be a number between 0 and 100.

Cutoffs or thresholds

The levels or scores at which a child's score is deemed "ready" or passing.

- **Norm-referenced:** the threshold is determined by comparing the score the rest of the scores (i.e., how a student's score compares to other students' scores).
- **Criterion-referenced:** the threshold is a predetermined standard and used for comparison (e.g., how a student's score compares to a pre-set threshold).

Target population

The target population for this metric includes all kindergartners in each cradle-to-career partnership's geographic scope.

Example

Formula for calculating the percent of kindergartners that are "ready" for kindergarten in a given school year:

$$\frac{\text{Number of kindergartners scoring "ready" for kindergarten}}{\text{Total number of kindergartners in the community}} \times 100$$

This section provides examples of kindergarten readiness metrics from StriveTogether network members.

Norwalk Acts reports Preferred and Alternate #1

Norwalk Acts reports data from a statewide kindergarten assessment, which is the Preferred kindergarten readiness metric. The Connecticut Kindergarten Entrance Inventory (KEI) is a beginning-of-year skills snapshot, based on teachers' observations of student performance levels (1-3) by domain (Creative, Language, Literacy, Numeracy, Personal and Physical). The KEI assessment is norm-referenced, as it requires each teacher to classify students in their class

into three predetermined performance levels by domain. Norwalk Acts defines readiness as performing at level 2 or 3 on all six domains of the KEI. The KEI is considered the Preferred kindergarten readiness metric because uses state- or district- defined assessment outcomes that apply to all children entering kindergarten.

Norwalk Acts also reports a developmental screening, which is an example of Alternative #1. For developmental screening, Norwalk Acts uses the Ages & Stages Questionnaire (ASQ), a developmental screening completed by parents for kindergarten registration. Results for five domains (Communication, Fine Motor, Gross Motor, Personal-Social and Problem Solving) are measured. Norwalk reports the number of children screened from birth to kindergarten as well as "ASQ Ready," defined as "Above Cutoff in All 5 Domains." Norwalk Acts uses **Brooke's Publishing ASQ** Data Management System. Prices on the **ASQ** vary. Over the past couple of years, Norwalk Acts has focused on increasing the use of the ASQ data to create impact and track success. In 2020-2021, Nowalk Acts engaged 23 community partners to complete over 7,263 ASQs, screening over 3,904 children. Over 1,497 children are being tracked to repeat ASQ screenings, and Norwalk Acts has seen an increase from 67 percent to 74 percent of children ready to learn at kindergarten entry (StriveTogether). The ASQ is considered the Alternative #1 because it is a screener that is widely used and can be disaggregated.

The Commit Partnership reports Alternative #1

The Commit Partnership uses percentage of students that qualify as "ready" based on an individual school district's assessment and cut score. Individual districts choose their own assessment to determine kindergarten readiness from the Commissioner's List of Approved Prekindergarten and Kindergarten Assessment Instruments. Under House Bill 3, each school district must administer a multidimensional assessment tool that includes a summative reading instrument and tests at least three developmental skills, including literacy. The approach that The Commit Partnership uses is considered Alternative #1 because it uses state- or district-defined screening outcomes that apply to all children entering the community's kindergarten. The tool is used to screen all children in the community for developmental delays or intervention, and reflects screened readiness. A standardized and age-appropriate measure to be used by all districts across Texas is currently in development, as mandated by House Bill 3. The Commit Partnership obtains a kindergarten readiness report for target schools or districts provided by the Texas Education Agency (TEA) through the **Texas Public Education Information Resource**.

Aligned Impact Muscatine County Iowa reports Alternative #2

Aligned Impact Muscatine County Iowa uses assessment data reports provided by the local Area Education Agency (AEA). Readiness data is reported for all kindergarten students. Students are given the **FAST earlyReading assessment** by their teachers at the beginning of the school year. This is an evidence-based assessment used to screen and monitor student progress, to determine student's skill levels as they enter into kindergarten. The Fast earlyReading assessment or curriculum assessment reported by Aligned Impact Muscatine County Iowa was reviewed for use as a **universal** screening by the Iowa Department of Education. The cost of this assessment is **$7.00** per student with a license duration of one year. This is considered Alternative #2 because it uses a teacher-implemented curriculum assessment upon kindergarten entry. Ideally, it applies to all children in the community and is used across all of the community's kindergarten classes.

Bold Goals Education Coalition reports Alternative #3

Bold Goals Education Coalition reports on the access to First Class Pre-K. They summarize this outcome for 21 public school systems in five counties. **Access to First Class Pre-K** is collected and reported by the Alabama Department of Early Childhood Education. This falls under Alternative #3 because it reports on the percentage of students with access to pre-K (**Alabama Department of Early Childhood Education**). The Alternative #3 kindergarten readiness metric is the share of kindergarten children that attended pre-K, sourced from administrative data.

Data disaggregation

The availability of data by child demographics will depend on the state/collecting entity. For example, EC Prism demographics may include but are not limited to developmental age and abilities, cultural, racial or ethnic identity, language, geography, economic status, family composition and gender (**EC Prism**).

Frequently asked questions

What are common assessments for kindergarten readiness?

The IMPACT measures Tool by EC Prism allows anyone interested in early childhood measurement and evaluation to search, compare and access measures scored on four categories — usability, cost, cultural relevance and technical merit.

How can I learn more about local providers and early care partners in my area?

The National Database of Child Care Licensing Regulations is a tool for finding national and state information about child care licensing regulations, agency policies and requirements for licensed child care centers, family care homes and group child care homes.

If I have to choose between quality (assessment vs. screening) and coverage (data for some vs. all students), which should I choose?

Full coverage, or data on all students in the community, is the more important of the two. Full coverage using screening data is preferred to some coverage using assessment data.

If I have to choose between a formal assessment and developmental screener, which should I choose?

Formal assessment, since developmental screeners are intended to diagnose developmental delays rather than identify kindergarten readiness.

If I can choose between an assessment given at the beginning of the school year and the end of the school year, which should I choose?

Beginning of the school year is preferred to middle or end of the school year.

If I can choose between an assessment that covers more domains or fewer domains, which should I choose?

The more domains the assessment covers, the more preferred.

If I can choose between independently trained/validated assessors versus families/teachers administering assessments, which should we use?

Independently trained/validated assessors are preferred to families/teachers.

Learning resources

Administration for Children and Families: Early Learning Standards and Guidelines:
https://childcareta.acf.hhs.gov/sites/default/files/state_elgs_web_final_2.pdf

American Academy for Pediatrics — School Readiness:
https://publications.aap.org/pediatrics/article/144/2/e20191766/38558/School-Readiness?autologincheck=redirected

Education-to-Workforce Indicator Framework:
https://www.mathematica.org/projects/education-to-workforce-indicator-framework

MPACT Measures Tools by EC Prism:
https://ecmeasures.instituteforchildsuccess.org/measures/

Interactive Head Start Early Learning Outcomes Framework: Ages Birth to Five. A Guide to What Children Should Know and Do in Five Central Developmental Domains:
https://eclkc.ohs.acf.hhs.gov/interactive-head-start-early-learning-outcomes-framework-ages-birth-five

LiBetti Ashley & Fu, Rachel., 2022. A State Scan of Early Learning Assessments and Data Systems. New America.
https://www.newamerica.org/education-policy/briefs/early-learning-assessments-and-data/

National Association for the Education of Young Children: Advancing Equity in Early Childhood Education: https://www.naeyc.org/resources/position-statements/equity

Education Commission of the State — ESSA: Quick Guides on Top Issues:
https://www.ecs.org/wp-content/uploads/ESSA-Quick-guides-on-top-issues.pdf

Data sharing

The StriveTogether **Guide to data sharing** provides important information about requesting, storing and working with data. It is important that cradle-to-career partnerships work with local school districts to obtain achievement and assessment participation data. This may involve entering into a data-sharing agreement with local schools, districts or the state. In some cases, it may be possible to access student-level data for this outcome as part of a request for district- or-state-level data. The data sharing guide provides important information for doing that responsibly.

StriveTogether®

StriveTogether is a national movement with a clear purpose: help every child succeed in school and in life from cradle to career, regardless of race, ethnicity, zip code or circumstance. In partnership with nearly 70 communities across the country, StriveTogether provides resources, best practices and processes to give every child every chance for success. The StriveTogether Cradle to Career Network reaches more than 14 million students, including more than 7 million children of color and over 7 million children experiencing poverty. The network spans 29 states and Washington, D.C.

125 East Ninth Street
Second Floor
Cincinnati, OH, 45202
513.929.1150

StriveTogether.org