AN OVERVIEW ON MEASURES AND DATA REPORTING

The Kindergarten Individual Development Survey (KIDS) is an observational tool designed to help teachers, administrators, families, and policymakers better understand the developmental readiness of children entering kindergarten. KIDS is aligned to the Illinois Early Learning and Development Standards (IELDS) and Illinois Early Learning Standards–Kindergarten (IELS-K). IELDS are the state's expectations for children's learning and development at kindergarten entry. IELS-K are the state's expectations for children's learning and development at the end of kindergarten.

KIDS was designed to fully cover the breadth and content of the IELDS and IELS-K with a relatively small number of measures in each domain. Each KIDS domain was carefully constructed to represent a distinct area of learning and development for children defined by child development research and practice. The focus of each domain is on the acquisition of knowledge, skills, or behaviors that reflect each domain's developmental constructs. Each domain contains multiple measures, and each measure consists of a sequence of developmental levels or a progression along which a child's observed behavior is assessed. Measures represent the individual assessment items in the KIDS instrument. Teachers assess children at a developmental level for each measure, which represents a point along the developmental progression. The levels are organized in a sequence by two categories: Building (Earlier, Middle, Later) and Integrating (Earlier, Middle, Later).

Instrument Views Available with KIDS

The Illinois State Board of Education (ISBE) provides school districts with three instrument views to use when implementing KIDS:

1. 14 State Readiness Measures,
2. 5 Aligned Domains of School Readiness (29 measures), and
3. 11 Domains of Readiness representing full alignment to Illinois content standards (55 measures)

Which KIDS measures does the state require and which are optional?

- Beginning with the 2017 academic year, ISBE will **require** all kindergarten teachers to complete the 14 State Readiness Measures in the KIDS (2015) instrument.
- Teachers, schools, or districts may **optionally choose** for teachers to complete one or more full domains from either the "5 Aligned Domains" or "11 Domains" views of the instrument.

14 State Readiness Measures *(required)*

Beginning with the 2017 academic year, ISBE will require all kindergarten teachers to complete the 14 State Readiness Measures in the KIDS (2015) instrument. These select measures provide

population-based information about the overall readiness of a group of children at the beginning of kindergarten. The 14 State Readiness Measures are organized into three subsets which are comprised of a sample of measures from four KIDS domains in the following way:

- The *ATL-REG – SED Subset* consists of three measures from the Approaches to Learning and Self-Regulation (ATL-REG) domain and two measures from the Social and Emotional Development (SED) domain.
- The *LLD Subset* consists of five measures from the Language and Literacy Development (LLD) domain.
- The *COG: MATH Subset* consists of four measures from the Cognition: Math (COG:MATH) domain.

5 Aligned KIDS Domains of School Readiness (29 measures: 14 required, 15 optional)
The Five Domains of Readiness include the essential areas of development for children entering school. Evidence suggests that these five domains provide a strong foundation for long-term educational achievement, including college and career readiness much later in life. There are 29 measures across the five domains, including the 14 State Required Readiness Measures plus 15 optional measures. The complete domains are aligned to the respective content areas in the Illinois early learning standards and kindergarten content standards. The five domains are

- Approaches to Learning and Self-Regulation (ATL-REG),
- Social and Emotional Development (SED),
- Language and Literacy Development (LLD),
- Cognition: Math (COG:MATH), and
- Physical Development (PD).

11 KIDS Domains of Readiness representing full alignment to Illinois content standards (55 measures: 14 required, 41 optional)
The 11 Domains of KIDS provides comprehensive alignment to Illinois early learning standards (IELDS) and kindergarten content standards (IELS-K), including Common Core State Standards (CCSS) in English Language Arts and Mathematics, and Next Generation Science Standards (NGSS). The 11 Domains of KIDS includes 55 measures, including the 14 State Required Readiness Measures plus 41 optional measures. In addition to the 5 Aligned KIDS Domains of School Readiness, the 11 Domains include the following:

- Cognition: Science (COG: SCI),
- Health (HLTH),
- History Social Science (HSS),
- Visual and Performing Arts (VPA),
- English Language Development (ELD; conditional domain for children who live in homes where a language other than English is spoken), and
- Language and Literacy Development in Spanish (SPAN; conditional domain available for use in classrooms with instruction in Spanish).

Table 1: KIDS Subsets and Domains Included in Each Instrument View

KIDS Domains	Subsets for 14 State Readiness Measures Related to KIDS Domains	KIDS 5 Aligned Domains of School Readiness	KIDS 11 Domains of Readiness with Full Alignment to Standards
Approaches to Learning – Self-Regulation (ATL-REG)	ATL-REG – SED Subset	ATL-REG Domain	ATL-REG Domain
Social and Emotional Development (SED)	ATL-REG – SED Subset	SED Domain	SED Domain
Language and Literacy Development (LLD)	LLD Subset	LLD Domain	LLD Domain
English Language Development (ELD)			ELD Domain
Language and Literacy Development in Spanish (SPAN)			SPAN Domain
Cognition, Including Math and Science (COG: MATH, COG: SCI)	MATH Subset	COG: MATH Domain	COG: MATH, COG: SCI Sub-domains
Physical Development (PD)		PD Domain	PD Domain
Health (HLTH)			HLTH Domain
History – Social Science (HSS)			HSS Domain
Visual and Performing Arts (VPA)			VPA Domain

What are recommended incremental steps for completing more than minimum required 14 State Readiness Measures?

Although the 14 Measures are the minimum required at the beginning of kindergarten, teachers and school administrators who desire more information about their students' learning and development may find it helpful to complete more measures or to complete the 14 measures more frequently. As teachers collect evidence for the 14 measures, they observe that the interconnectedness of observations allows them to use evidence to inform additional KIDS measures beyond those that are part of the 14 State Readiness Measures. Individual teachers, schools, and districts can choose to include additional measures in the assessment, in order to have data for one or more full domains. The whole set of measures in each domain provides valid and reliable assessment of progress in essential domains of learning and development for young children.

A reasonable stretch goal for teachers wanting to complete more would be to complete the 14 State Readiness Measures again in the spring, along with 3 to 5 additional measures within those domains. For example, by completing one additional ATL-REG measure and 3 additional SED measures, teachers and school administrators will gain access to domain reports for ATL-REG and SED.

Table 2: KIDS Subsets and Domains Included in Each Instrument View

Domain	Number of measures for the required 14 State Readiness Measures	Number of optional measures to complete each domain in the "5 Aligned Domains of School Readiness" Instrument View	Total number of measures in the each domain in the "KIDS 11 Domains of Readiness with Full Alignment to Standards" Instrument View
ATL-REG*	3	1	4
SED*	2	3	5
LLD*	5	5	10
ELD	-		4
SPAN	-		4
COG: MATH*	4	2	6
COG: SCI	-		4
PD*	-	4	4
HLTH	-		5
HSS	-		5
VPA	-		4
Total (11 domains)	**14**	**15**	**55**

* 29 measures in the "5 Aligned Domains of School Readiness"

Two views of the KIDS instrument facilitate use of complete domains:

- 5 Aligned Domains of School Readiness (29 measures), and
- 11 Domains of Readiness representing full alignment to Illinois content standards (55 measures).

In either view, individual full domains may be completed, or all domains within a given view may be completed. Teachers who complete the KIDS full domains of ATL-REG, SED, LLD, and COG: MATH are also fulfilling the 14 State Readiness Measure requirement. Full domains that do not contain any 14 State Readiness Measures can be completed one or more times within a year, at time(s) that are most beneficial to the teachers, schools, and districts for curriculum planning and instructional support.

The recommended approach to using full domains to assess progress over time is to complete the measures at least two times per year, such as at the beginning of the year (first 40th day) and then again about six months later.

A district may choose to use a collection of full domains in place of report cards, such as the 5 Aligned KIDS Domains of School Readiness. When used for report cards, it is recommended that the domains are completed two to three times per year, such as (1) at the beginning of the year (first 40th day), (2) in the middle (105th day) and (3) toward the end (170th day). Capturing data three times per year will provide teachers with a deep understanding of how students' progress

in kindergarten in the selected domains, as well as greater context for teachers to share with families regarding their children's learning and development.

Benefits of each KIDS Instrument View

Each instrument view has benefits for teachers, school and district administrators, and the state.

Table 3: Benefits of Each KIDS Instrument View

Audience	14 State Readiness Measure Subsets	5 Aligned Domains of School Readiness	KIDS 11 Domains of Readiness with Full Alignment to Standards
For Teachers: *Guide classroom planning, communication with parents, and the provision of strengths-based support for individual children…*	… in selected skill areas that contribute to the statewide picture of readiness.	… in the essential areas of development for children entering school.	… in all Illinois early learning and kindergarten standards domains.
For School and District Administrators: *Valid and reliable assessment that can inform local planning and school readiness efforts, including local conversations about supporting children's learning and development…*	… in a general way, focused on specific skill areas that contribute to the statewide picture of readiness.	… in a targeted way, focused on the essential domains of learning and development for young children.	… in a comprehensive way that is aligned to state early learning and kindergarten content standards.
For the State: *Valid and reliable assessment that can inform state planning and school readiness efforts, including state conversations about supporting children's learning and development…*	… that correspond to select population-based indicators that relate to later school success, collected via the same rubric for all kindergarten children across the state.	… that can be aggregated across districts using full domains to understand progress of children in relation to the essential domains of learning and development.	… that can be aggregated across districts using full domains to understand progress of children in relation to state early learning and kindergarten content standards.

Different levels of data reporting are available for each KIDS instrument view and type of user.

Table 4: Data Reporting Available for Each KIDS Instrument View and User Type

Audience	14 State Readiness Measure Subsets	5 Aligned Domains of School Readiness	KIDS 11 Domains of Readiness with Full Alignment to Standards
For Teachers: *To guide classroom planning, communication with parents, and the provision of strengths-based support for individual children…*	Individual child and classroom measure-level summary reports.	Individual child and classroom measure- and domain-level summary reports.	Individual child and classroom measure- and domain-level summary reports.
For School and District Administrators: *To inform local planning and school readiness efforts, including local conversations about supporting children's learning and development…*	Aggregate subset summary reports and school/district measure-level summary reports.	Aggregate subset summary reports and school/district measure- and domain-level summary reports.	Aggregate subset summary reports and school/district measure- and domain-level summary reports.
For the State: *To provide statewide data on children's readiness to inform state planning and school readiness efforts, including state conversations about supporting children's learning and development…*	Aggregate subset summary reports and statewide measure-level summary reports.	Aggregate subset summary reports and statewide measure- and domain-level summary reports.	Aggregate subset summary reports and statewide measure- and domain-level summary reports.

14 State Readiness Measures *(required)*

The 14 State Readiness Measures represent a sampling of areas of learning that kindergarten teachers routinely identify as key to children's success in kindergarten. The 14 Measures are completed within the first 40 days of instruction to document children's development and learning at kindergarten entry. It would be inappropriate to use the 14 Measures for evaluation of teachers or schools or as a reflection of what children have learned in the first 40 days of school. Rather, the 14 Measures provide a means, at an aggregate level, to begin to understand in a general way the learning and support needs of an incoming cohort of kindergarten children.

Information from the three subsets is useful for providing the state with an annual snapshot that gives an overall indication of children's development across the state at the beginning of kindergarten. The three subsets for the KIDS 14 State Readiness Measures provide common indicators that can be used in all districts throughout Illinois. The primary value of a statewide indicator is to have a common assessment of children's readiness that is collected via the same rubric for all kindergarten children across the state. Looking at trends across the state within a given year, as well as how the trends change across years, will help the ISBE understand where

children, schools, and districts may benefit from additional support in specific areas of development. This information can also guide the provision of additional strengths-based support for children and teachers from school and district-level administrators.

Aggregate subset ratings, provide population-level data points to the state, districts, and schools to inform school readiness efforts in a general way and can guide local conversations about supporting children's learning and development within communities, including early learning communities, and with families. Aggregate subset ratings will be provided annually to state, districts, and school administrators.

Using measure ratings in a qualitative way provides useful information for teachers beyond the state reporting requirement. For example, reviewing the developmental progressions and reflecting on a child's level of development in the areas indicated by the 14 State Readiness Measures can provide information on specific information knowledge and skills to guide the individualization of instructional supports for children and communication with families. Once data are entered into KIDStech, teachers can download a summary of their raw measure ratings for individual children in the "Review Ratings Report." Classroom summary reports provide domain and measure-level information for classroom planning and reporting purposes. Teachers who complete the 14 measures at both the beginning and end of the year will be able to print the individual child and group level reports at both time points and can see children's progress on those specific measures over the academic year. Cautions when using the 14 State Readiness Measures for classroom planning:

- Concentrating on a narrow set of specific skills assessed by a small number of selected measures, such as the 14 required measures, does not provide the same level of coverage of the IELDS, IELS-K, or research-based developmental constructs that are represented in KIDS domains. The limited set of measures sampled may narrow a teacher's focus to only the developmental constructs represented in those measures, to the exclusion of other important developmental constructs. For example, the KIDS measure "Phonological Awareness" describes the developmental progression for increasing awareness of sounds that make up words, which is an important early literacy skill for languages such as English. However, an over-emphasis on any given skill such as phonological awareness may lead to too little attention being given to language and literacy skills addressed implicitly in several KIDS measures such as vocabulary development. When assessment is used for curriculum planning, focusing on a limited set of measures to the exclusion of other measures and related skills may lead to gaps in supporting learning and missed opportunities in individualizing that support.
- When comparing individual children's ratings at two or more points in time, statistically validated change can be attributed only at the domain level, rather than at the measure level.

Complete Domains *(optional)*

As teachers are collecting evidence for the 14 measures, they often observe that much of the evidence can inform additional KIDS measures beyond those that are part of the 14 State Readiness Measures. Individual teachers, schools, and districts can choose to include additional measures in the assessment, in order to have data for one or more full domains. The whole set of measures in each domain provides valid and reliable assessment of progress in essential domains of learning and development for young children.

In addition to the benefits outlined above for the 14 State Readiness Measures, when full domains are completed, teacher ratings on all of the measures in a domain can be used to determine a child's domain scaled score, which is an estimate of a child's developmental location or progress on a KIDS domain. Each full domain represents alignment to Illinois early learning and kindergarten content standards, and is grounded in domain research summaries developed by child development content experts.[1] Domain research summaries demonstrate how the developmental continua for the KIDS measures were developed from the empirical child development research literature. Completing full domains in the KIDS instrument provides teachers and districts with a complete picture of children's learning and development within completed domains. When full domains are completed, teachers and districts have access to enhanced child and group-level reports. Other benefits of completing full domains are the availability of domain reports for teachers and districts which provide greater value in translating data into classroom instruction and more comprehensive support of student development.

ADDITIONAL INFORMATION ABOUT DOMAIN SCALE RATINGS

The child's individual ratings for each measure in the domain are used to create the overall domain scaled rating. This overall rating can be used to interpret how a child is progressing on each domain of the KIDS (2015) instrument. Domain scaled ratings are produced using domain scaled scores. [2]

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[1] https://www.illinoiskids.org/content/standards-alignment-and-research-summaries

[2] Domain scaled scores are computed through a statistical model based on Item Response Theory (IRT). The measurement model used to calibrate KIDS (2015) is the Multidimensional Random Coefficients Multinomial Logit Model (MRCML; Adams, Wilson, & Wang, 1997). MRCML is the 'parent' model for the entire family of Rasch item-response models. IRT is a method of psychometric measure development and analysis that considers the relationship between an individual's rating on a given item of an assessment and that person's rating on the overall measure from which the item was derived. More priority is given to how an individual is rated on individual assessment items than on the raw domain score. As applied to the KIDS domains, it is important to examine the relationship between a child's rating on a particular measure (e.g. "Interest in Literacy") and his or her development in relation to the broader developmental domain (e.g. "Language and Literacy Development"). This approach to assessment is important, because, for a teacher looking to support individual children's learning effectively, information on a child's strengths as well as areas where that child is at earlier developmental levels than anticipated is more valuable than having only a summary score for the developmental domain. One major advantage of IRT is that it allows for different items (levels) on a measure to vary in amount of challenge or complexity or to have different probabilities for being rated at each level of a measure. As applied to the KIDS domains, this means that knowledge and skills that typically develop earlier or later than other knowledge and skills are accounted for in the quantitative models that produce the domain scales. In addition, IRT allows for the analysis of binary assessment items. For example, for each developmental level of the KIDS measures, the child is

A domain scaled score portrays the developmental progression of knowledge, skills, and behaviors that encompass the collection of measures included in that KIDS domain. When looking at the layout of measures on the KIDS instrument, each level appears to be an equal developmental distance from the other. However, as children grow and develop, some knowledge and skills take more time to develop than others. These differences in development are expected and are represented by different widths of the developmental levels in the domain scale. When a child functions in a particular level for what appears to be an extended period of time, it is important to consider that the child is likely to be still making gains within that domain. A teacher's observation notes, classroom learning activities, ongoing curriculum data (and other documents) can provide additional information about a child's learning and development.

A domain rating is a scaled score proficiency estimate that is calculated when the child's individual measure ratings are statistically transformed to a scale. For example, all measures in the Language and Literacy Development domain are used to calculate the domain or subdomain rating. The domain ratings can be used to identify children's strengths and areas in need of additional support.

In KIDStech reports, all of the levels for each domain follow a progression in a manner similar to the developmental progression for each measure on the KIDS instrument. The key difference is that the domain scale in the report reflects the psychometric transformation of the developmental levels based on the data collected during the calibration studies for KIDS, whereas the developmental progression on the KIDS instrument represents the developmental levels as having equal intervals. Only the KIDStech domain report shows the amount of challenge or complexity of each level of a measure, which is indicated by the varying widths of the measure's different levels.

The variation between developmental levels within and across each domain scale means, for example, that a child who demonstrates mastery at Integrating Middle on one domain may not necessarily demonstrate mastery at Integrating Middle on every other domain, even when the vertical domain rating on a report appears to be at about the same location on both domain scales. Likewise, even when a child has the same domain ratings across two domains (i.e.: at Integrating Middle for both domains), the vertical domain rating line may not be at the same location on both domain scales.

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either at that level or not. Another advantage of IRT scores is that they account for the uncertainty of measurement. A number of factors can create variability in a child's rating including who completed it (e.g., different teachers may base their ratings on differing amounts of experience with a child) and when the assessment was completed. Because all assessments contain some variability, a child's true proficiency can never be perfectly precise with any assessment tool. Thus, IRT provides a standard error which represents the area in which we are confident that a child's true rating lies (Wilson, 2005).