Ready for Kindergarten: Kindergarten Readiness Assessment Technical Report

Fall 2014

Prepared for the Maryland State Department of Education
and the Ohio Department of Education by WestEd

The Ready for Kindergarten: Early Childhood Comprehensive Assessment System is a partnership between the Maryland State Department of Education and the Ohio Department of Education, in collaboration with the Johns Hopkins University Center for Technology in Education and WestEd, that is supported by a Race to the Top–Early Learning Challenge grant from the U.S. Department of Education and the U.S. Department of Health and Human Services (CFDA 84.412A) and by a Race to the Top grant from the U.S. Department of Education (CFDA 84.395).

1 Overview

1.1 Race to the Top—Early Learning Challenge Grants

On December 16, 2011, Maryland and Ohio were each awarded Race to the Top Early Learning Challenge (RTT-ELC) Grants for four years. Along with other projects, these funds supported an innovative partnership between Maryland and Ohio to develop the Ready for Kindergarten Early Childhood Comprehensive Assessment System, which consists of the Kindergarten Readiness Assessment (KRA) and the (formative) Early Learning Assessment. A number of partners have played a vital role in executing Maryland's and Ohio's shared vision for improving kindergarten readiness and early childhood assessments. These partners include the Johns Hopkins University Center for Technology in Education (JHU CTE), WestEd (the Standards, Assessment, and Accountability Services [SAAS] program and the Center for Child & Family Studies [CCFS]), state advisory councils, and a national technical advisory committee (TAC), facilitated by the Council of Chief State School Officers (CCSSO). A list of project members from each organization is provided in Appendix A.

1.2 Purpose of the Kindergarten Readiness Assessment (KRA)

The purpose of the KRA is to provide information to stakeholders at the local, regional, and state levels about how well prepared children are for kindergarten. State, district, and school leaders use the KRA to learn about children's levels of preparedness and readiness for kindergarten, which enables programmatic decision-making at the school, district, and state levels. Score information by domain and overall readiness is summarized by demographic characteristics, in order to pinpoint where there are achievement gaps upon kindergarten entry; how children's prior education and care experiences impact readiness; and where to target resources to better support children identified as at-risk through academic, health, and behavioral supports and interventions. By making aggregated assessment reports available in the Ready for Kindergarten Online system at the individual, classroom, school, and district levels, and by facilitating the integration of the KRA results into longitudinal data systems at the state level, the KRA informs these policy, research, and education decisions. Families and teachers learn about each child's skills, learning, and developmental needs so that the teachers can identify strengths and weaknesses for each child.

The purpose of the KRA is complemented by the purpose of the Early Learning Assessment (a formative assessment), in which teachers monitor students' progress across the essential domains of learning, as measured by 32 learning progressions that describe a continuum of typical child development from ages 36 to 72 months. The Early Learning Assessment also provides information to determine if a child with an Individualized Education Program (IEP) or Individualized Family Support Plan (IFSP) demonstrates improved (1) social-emotional skills; (2) acquisition of knowledge and skills; and (3) use of appropriate adaptive behaviors to meet his or her needs.

1.3 Future Administrations and Development

Maryland and Ohio are part of a state partnership that was awarded an Enhanced Assessment Grant (EAG) in September 2013 to continue development efforts to improve and enhance the KRA. Given that the KRA continues to develop, the KRA that is being developed by Maryland and Ohio is referred to as version 1.0 (i.e., KRA 1.0). The enhanced version that will result from the efforts of the EAG state partnership[1] is referred to as KRA 2.0. The first census administration of KRA 2.0 is anticipated in fall 2017.

The fall 2014 administration of KRA 1.0 represented the first statewide administration of the assessment in Maryland and in Ohio. With this first administration of the assessment, teachers became familiar with the KRA content, the classroom management strategies necessary to support its administration, and the use of Ready for Kindergarten Online (the data reporting system). Teachers reported through focus groups and/or surveys convened by the Maryland State Department of Education (MSDE) and the Ohio Department of Education (ODE) that they found the assessment and the reporting requirements to be time-intensive. Being sensitive to this feedback, MSDE and ODE engaged WestEd to determine ways to reduce the assessment administration time. Through the review of teacher feedback, analyses of census data, and discussions among stakeholders, the states agreed to implement a reduced version of the KRA for fall 2015 and 2016. The reduced version of the assessment is referred to as KRA 1.5.

Throughout this report, all versions of the KRA may be referenced. Table 1.3 provides a summary of the versions and can serve as a quick reference for the reader.

Table 1.3—Summary of KRA Versions

Version	Year(s) of Administration	States	Summary
KRA 1.0	2014	MD and OH	First administration of KRA
KRA 1.5	2015 and 2016	MD and OH	Reduced version of KRA 1.0
KRA 2.0	2017 and thereafter	MD, OH, and additional states	Revised and enhanced version of KRA 1.0 and KRA 1.5

1.4 Purpose of This Report

The purpose of this report is to provide evidence of the technical qualities of the KRA, including its reliability and validity for use as a measure of school readiness, and to describe the efforts and processes that contributed to the development and support of the Ready for Kindergarten assessment system.

[1] The EAG state partnership includes CT, IN, MA, MD, MI, NV, OH, and TN.

2 KRA Design

2.1 Common Language Standards

In an effort to identify the content standards for the Ready for Kindergarten Assessment System, an alignment study of Maryland's and of Ohio's early childhood standards was conducted in August 2012. This alignment study informed the drafting of the Common Language Standards, which include the domain, strands, standards, and essential skills and knowledge that form the basis of the KRA and the formative Early Learning Assessment. Further, the Common Language Standards identify the link between the KRA and the Early Learning Assessment—there is a one-to-one correspondence between the standards and the learning progressions, which form the foundation of the Early Learning Assessment.

Upon multiple reviews and revisions by WestEd, MSDE, ODE, and the TAC, the Common Language Standards were finalized during summer 2013. The Common Language Standards can be found in Appendix B.

2.2 KRA Item Types

A KRA item is one question or observation that aligns to a specific essential skill and knowledge statement from within the Common Language Standards and that results in one recorded score. In some instances, multiple items are clustered around a common stimulus (e.g., a story), but multiple item scores are recorded (one for each item in the cluster).

The KRA comprises three item types: selected response, performance task, and observational rubric. Each item type is described below, and an example of each item type can be found in Appendix C.

- **Selected-response items** consist of a question or prompt and three possible answer options, of which there is only one correct answer. A student indicates his or her response by touching one of the three answer options. Selected-response items are worth one score point. A benefit of selected-response items is that they require the least amount of time to administer.
- **Performance-task items** consist of an activity or action that is completed by the child in response to a prompt. In some instances, manipulatives are provided with performance-task items to allow the student to demonstrate the skill being assessed. Performance-task items are scored with a rubric that is based on the proficiency of the student's performance, and are worth one, two, or three score point(s). The benefit of performance-task items is that they allow a student to demonstrate his or her knowledge and, in some instances, provide an explanation or reason.
- **Observational-rubric items** describe specific behaviors or skills that a student demonstrates during typical classroom activities. The teacher evaluates and scores each student's behaviors or skills, using a rubric that describes the quality for each criterion. Observational items do not require the teacher and the student to directly interact (i.e., the student is unaware of the teacher's intention to assess) and, therefore, provide the advantage of assessing the student in everyday situations.

2.3 KRA Blueprint

The KRA Blueprint outlines the distribution of items by type, total items, total raw points, and percentage of total raw points across the domains defined in the Common Language Standards. Tables 2.3.A and 2.3.B show the distribution of item types across the domains in KRA 1.0 and KRA 1.5, respectively. See section 4.2.3 for details regarding the reduction of items from KRA 1.0 to KRA 1.5.

Table 2.3.A—KRA 1.0 Blueprint

Domain	Selected Response	Performance Task	Observational Rubric	Total Items	Total Raw Points	Percentage of Total Raw Points
Language and Literacy	7	10	3	20	39	33
Mathematics	3	12	0	15	26	22
Physical Well-Being and Motor Development	0	0	7	7	14	12
Social Foundations	0	0	16	16	32	27
Science	2	0	1	3	4	3
Social Studies	0	0	2	2	4	3
Total	12	22	29	63	119	100

Table 2.3.B—KRA 1.5 Blueprint

Domain	Selected Response	Performance Task	Observational Rubric	Total Items	Total Raw Points	Percentage of Total Raw Points
Language and Literacy	6	9	2	17	34	35
Mathematics	3	11	0	14	25	26
Physical Well-Being and Motor Development	0	0	7	7	14	14
Social Foundations	0	0	12	12	24	25
Total	9	20	21	50	97	100

Note: Some science and social studies items were recoded and included in the Social Foundations domain, based on the results of the factor analysis and item reduction.

3 KRA Development and Administration

3.1 Cognitive Interviews

Cognitive interviews were conducted individually during school hours in the students' home schools in January 2013. Two WestEd researchers working with two staff members from JHU CTE conducted the interviews.

3.1.1 Purpose

Cognitive interviewing strategies are drawn from the family of process-tracing or verbal protocol models, which can be used to verify hypotheses about access to tested content. Cognitive interviews provide a forum for researchers to test assumptions about the intent of an item or question. By analyzing the items (Solano-Flores & Trumbull, 2003), researchers simultaneously gather information about students' understandings of task expectations; their levels of mastery of the content; and the reasoning processes, problem-solving strategies, and adaptive skills students use when answering test questions (Ericsson & Simon, 1980, 1993; Paulsen & Levine, 1999).

During a cognitive interview, researchers observe students individually as the students respond to test questions or perform tasks. As they attempt to answer each question or solve each task or problem, students are encouraged to articulate, or describe aloud, their interpretation of what the task requires and the steps or processes needed to complete the task (concurrent data collection). Student comments, observations, and insights about and responses to directions, item stems, response choices, and graphics or stimuli help researchers check assumptions about whether a test item is functioning as intended—that is, whether the assessment task actually taps the cognitive processes that are intended to be assessed (National Research Council, 2001).

The cognitive interview process used in Maryland and Ohio was conducted using an adaptation of the process described in Sato, Rabinowitz, Gallagher, & Huang (2010). The student was first asked a few social interaction questions in order to allow the student to become familiar with the interviewer and the interview process. Then student comments were collected concurrently as the student spoke aloud as he or she attempted to answer each test question. Via prompts, the researcher interacted with the student to elicit verbal and nonverbal responses that indicated the student's understanding of the prototype items and strategies for answering them. The usual next step in the process is the retrospective stage of data collection, in which the student is asked specific questions about the test item (probes) immediately after answering the question to show or tell what he or she did to answer the question or solve the problem. However, given the age of the students in this study, this step was omitted.

A multistep process helps reveal the types of prior/background knowledge and/or requisite skills that support students' abilities to respond to the item and to assess the consequences of their decisions (Kopriva, 2001). Data collected through cognitive interviews contribute information to validate interpretations of test performance outcomes by indicating the degree to which students' demonstrated understanding accords with the construct intended to be measured by the item. From these cognitive interviews, data can be used to inform decision-making about which item types prove most conducive to eliciting what students know and can do.

3.1.2 Design

Two sets of KRA prototype items were configured: Set 1 comprised items 1N, 4N, 7N, 8N, 10N, 12N, and 14N; Set 2 comprised items 2N, 3N, 5N, 6N, 9N, 11N, and 13N. The relative lengths of tasks for each set were equivalent. Table 3.1.2 describes the prototype items that were used for the cognitive interviews.

Table 3.1.2—Description of KRA Prototype Items Used for Cognitive Interviews

Item	Set	Domain	Skill Assessed
1N	1	Language and Literacy	The child's acquisition of common vocabulary.
		Personal and Social Development	The child's ability to attend to a learning task (visual attention and ability to ignore extraneous stimuli; visual tracking—eye movement across a page—is necessary for reading).
2N	2	Mathematics	(1) The child's ability to identify three basic shapes; and (2) ability to sort on one dimension (shape).
		Language and Literacy	The child's knowledge of shape names.
3N	2	Language and Literacy	The child's ability to understand spoken language.
		Mathematics	(1) The child's ability to sort; and (2) knowledge of "same" number.
4N	1	Language and Literacy	The child's ability to understand spoken language.
5N	2	Cognitive and General Knowledge: Social Studies	The child's understanding of specific flags.
6N	2	Personal and Social Development	The child's ability to understand basic feelings.
7N	1	Personal and Social Development	The child's knowledge of spatial positions.
8N	1	Cognitive and General Knowledge: Science	The child's knowledge of general developmental stages.
9N	2	Personal and Social Development	The child's knowledge of obtaining assistance.
10N	1	Cognitive and General Knowledge: Arts—Music	The child's recognition of speed and volume.
11N	2	Cognitive and General Knowledge: Arts—Visual Arts	The child's knowledge of shapes and colors.
12N	1	Cognitive and General Knowledge: Social Studies	The child's understanding of social rules and conventions.
13N	2	Cognitive and General Knowledge: Science	The child's understanding of body features and how those parts help the animal to move.
14N	1	Mathematics: Counting and Cardinality	The child's understanding of the relationship between quantity of objects and numerals.

At the beginning of each cognitive interview, the student was told that the researchers were developing a new game and sought the student's assistance. Sticker sets were given to the student at the completion of his or her participation; any student who declined to participate was also given stickers. The prototype items were administered orally, and all directions, prompts, stimuli, and item stems were provided in English only. Directions and stimuli could be repeated or rephrased at the discretion of the researcher. All student responses were timed solely to provide information as to the length of time usually needed to complete the various tasks; students were allowed as much time as needed to answer.

A total of 14 KRA item prototypes, two per each of seven domains, were administered. To minimize the cognitive load on students and to shorten the interview time so that each student's participation lasted approximately 15 minutes, each student was administered a subset of seven prototype items (one per domain). By dividing the number of prototype items in this manner, researchers collected data from a greater number of students in the time available. To ensure a representative number of responses to each item type, researchers alternated the administration between Set 1 and Set 2. The goal was to administer each subset of prototype items to an equal number of students within each site.

The teacher focus groups, conducted after the student cognitive interviews were completed, took about 20 to 30 minutes. Teachers provided feedback on both the KRA item prototypes and a sample of learning progressions (the foundation of the formative Early Learning Assessment).

Teachers did not administer the prototype items to students; rather, their opinions about prototype items were based on how they, as experienced education professionals, felt students (including English learners and students with disabilities) in their current class would perform.

3.1.3 Sample

The student cognitive interviews involved a sample of 28 students enrolled in public school kindergartens: 14 students were from schools in Maryland, and 14 were from schools in Ohio. Within each state, sites were chosen from urban and rural settings. All students were native English speakers, and were chosen by the participating schools. (At this point in the KRA development process, the focus was to establish the general structure and format of items, which is why the interviews were conducted in English only.) The participating schools included one urban school and one rural school from each state. One student from Ohio opted out, resulting in a final sample size of 13 Ohio students from which data were collected. Three students in Maryland were administered all 14 items.

Teachers were solicited to participate in focus groups to evaluate KRA and formative prototype items in terms of how their students (including English learners and students with disabilities) would be expected to perform. The focus groups were held at the participating elementary school sites; focus groups with preschool teachers were conducted at two early learning programs (one rural and one urban) in each state. Participants included 13 teachers and one principal in Ohio, and 12 teachers in Maryland.

3.1.4 Findings

Due to the sample sizes, the most reliable statistics were the frequencies of the responses given. The student data indicated that the prototype items were accessible to kindergarten students. Only one complete prototype item (8N) was answered incorrectly by more than half the students. Portions of two other prototype items (3N: put chair and 9N: dial 911) were answered incorrectly by more than half the students. There were no broad differences between urban and rural students' responses to the items.

The data from the teacher interviews supported the conclusion that the prototype items were appropriate for kindergarten students. Many teachers offered suggestions for slight alterations that they felt would improve the accessibility of the prototype items. For example, several teachers thought that students might have trouble with multistep directions. One teacher suggested reading one part of the story and then asking the question, rather than first reading the entire story. The teachers' opinions about using the prototype items with English learners and students with disabilities were mixed. Nearly every teacher who commented about English learners noted that a prototype item's appropriateness

depended on the individual student and from whom and where the student acquires English. In the case of students with disabilities, teachers qualified their opinions by noting that it depended on the nature of the student's disability. A summary of student and teacher responses to the KRA prototype items is presented in Appendix D.

3.1.5 Summary

The cognitive interviews examined the various item prototypes that engaged students and allowed students to demonstrate their skills and knowledge. The intention of the study was to address issues pertaining to the appropriateness, structure, and format of the prototype items for kindergarten students and the teachers' perceptions of the accessibility of the items for English learners and students with disabilities.

The collected data indicated that most tasks worked very well, and that a few other tasks would likely work well with minor revisions. Notes were made of student comments during the prototype activities, and observations of student behavior were collected, tabulated, and analyzed after the activities concluded. Teacher comments regarding the KRA prototype items and the formative learning progressions were collected and tabulated. All data from these activities were used to further inform and enhance the item types and formats in preparation for future item development (i.e., the Pilot and Field Tests).

3.2 Pilot Test

The Pilot Test was conducted in April 2013. The Pilot Test materials were distributed and collected by WestEd, in coordination with JHU CTE.

3.2.1 Purpose

The purpose of the Pilot Test was twofold: to investigate the students' accessibility to the KRA items and to explore the feasibility of the assessment administration for teachers. The data previously collected through the cognitive interviews informed the development of the Pilot Test items and administration. Essentially, the intentions of the pilot were to expand upon the cognitive interviews and to use the quantitative and qualitative data captured during the pilot administration to inform the development of the Field Test.

3.2.2 Design

The Pilot Test comprised two parts (direct assessment and observation of students) utilizing four item types (selected response, performance task, observational rubric, and checklist). In addition, a questionnaire was included to be completed by the teacher (referred to as test administrator for the Pilot Test). Table 3.2.2 provides a description of the Pilot Test, including the estimated time to complete each part.

Table 3.2.2—Pilot Test Design

Part	Description	Estimated Time
Part I: Direct Test Administrator Interaction with Student	Selected-response and performance-task items that required direct test administrator interaction with the student.	30 minutes per student
Part II: Test Administrator Observation	Checklists and observational rubrics that were completed by the test administrator throughout the Pilot Test administration window.	20 minutes per student
Part III: Test Administrator Questionnaire	Questionnaire that was filled out by the test administrator at the conclusion of the Pilot Test administration window.	20 minutes

Administration times were included for planning purposes only. The Pilot Test was not a timed test, and each test administrator was requested to complete the assessment in its entirety for each student within the pilot administration window.

The test administrator manual (TAM) guided each test administrator through the steps of the assessment and included the scripts and instructions for each item in Parts I and II. The test administrator recorded all scores within the TAM. For Part I, the direct-interaction component, the TAM was accompanied by a student test booklet, which was used to present the selected-response and performance-task items to the students. Several performance-task items required the use of manipulatives.

Part III, the test administrator questionnaire, was separate from the TAM. The questionnaire was completed by the test administrator at the end of the administration window and after all students were assessed. The intention of the questionnaire was to collect feedback from the test administrators. It consisted of two Likert scales that focused on the main purposes of the pilot—accessibility of the assessment items and feasibility of administration. Space was provided for written, open-ended feedback.

The assessment items were distributed across four forms (Forms A through D), with each form consisting of Parts I and II, as previously described. For each form, Part I comprised 13 to 14 unique selected-response and performance-task items and contained two item clusters.

Part II comprised 12 checklist items and 12 observational-rubric items. Each of the 12 checklist items corresponded to the same skills assessed in the 12 observational-rubric items. This was intentional in order to allow a comparison of the two observational item types. Forms A and B utilized the same set of 24 observational items, and Forms C and D used a second set of 24 observational items.

Each test administrator who participated in the pilot was asked to assess five kindergarten students from his or her classroom. Given the small sample size per test administrator, there was no requirement for specific student demographics; however, it was requested that the five students reflect the variety of students in the test administrator's classroom. All students who were assessed were required to have the ability to understand instructions provided in English, and test administrators were advised to provide accommodations for students with disabilities that were consistent with current state testing policy and guidelines. Each test administrator was responsible for assessing his or her five students within the aforementioned testing window and for recording all scores for each item within the TAM. The scores for each item and the results of the questionnaire were entered into a database and were verified for accuracy by WestEd staff.

3.2.3 Sample

A total of 36 schools from Maryland and Ohio participated in the Pilot Test conducted in April 2013. These schools represented three district types (urban, suburban, and rural). Table 3.2.3.A indicates the number of schools from each state by district type.

Table 3.2.3.A—School by District Type

	Urban	Suburban	Rural	Total
Maryland	6	2	8	16
Ohio	6	10	4	20
Total	12	12	12	36

From these 36 schools, a total of 49 teachers and 212 students were involved in the pilot study. Forms A, B, C, and D were distributed as uniformly as possible across all schools and district types. Table 3.2.3.B summarizes the sample population for the Pilot Test across the four forms and the two states.

Table 3.2.3.B—Sample Population for Pilot Test

	Teachers	Form A	Form B	Form C	Form D	Students
Maryland	22	25	19	18	16	78
Ohio	27	29	35	35	35	134
Total	49	54	54	53	51	212

3.2.4 Findings

Appendix E contains the frequency distributions for student responses to the Pilot Test items. Mean scores and standard deviations were not analyzed since the purpose of the Pilot Test was to determine the accessibility of the items and feasibility of administration.

Some skills and content (e.g., social interaction with peers and adults) were unsuitable for assessment using direct-assessment item types. Therefore, these skills were assessed using observational-assessment item types, namely checklists and observational rubrics. For this part of the assessment, the test administrator did not need to interact directly with or prompt the student in any way. The test administrator observed the student at any time during the administration window and scored the student appropriately on the checklist and observational-rubric items.

The skills assessed by test administrator observation were intentionally written as both checklist and observational-rubric items and assessed together within the same form. By assessing the same skill using each item type, a comparison could be made to determine the value of providing the additional observation points and/or descriptions for the purposes of the KRA. Contingency tables were created to compare the scores on the checklist and observational-rubric versions of each item for the same skill. The tables indicate the percentage of students who scored a specific combination of scores for each type of observational item (i.e., checklist and observational-rubric). Figure 3.2.4 is a sample observational item contingency table.

Figure 3.2.4—Sample Observational Item Contingency Table

Observational Rubric

Checklist	3	2	1	0	Total
2	69.2%	4.7%	0.0%	0.0%	73.8%
1	0.0%	13.1%	9.3%	0.0%	22.4%
0	0.0%	0.0%	0.0%	3.7%	3.7%
Total	69.2%	17.8%	9.3%	3.7%	100.0%

The contingency tables allowed a comparison of the percentages of students' scores on the observational rubric (3, 2, 1, or 0) and students' scores on the checklist (2, 1, or 0). These comparisons helped to evaluate the relative effectiveness of the two approaches to scoring observational items. The entire set of contingency tables are presented in Appendix F.

Of the 49 teachers who participated in the Pilot Test, 47 returned test administrator questionnaires. The objectives of the questionnaire were to collect feedback from the test administrators about their perspectives on the accessibility of the items and to evaluate the feasibility of administering this type of assessment. Table 3.2.4.D summarizes the responses from the test administrators.

Table 3.2.4.D—Summary of Pilot Test Administrator Questionnaire

Accessibility of the Items	N	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
1.1 The specific skills and behaviors addressed by the items in both parts of the assessment are appropriate for *entering* kindergarten students.	47	31.9%	51.1%	14.9%	2.1%
1.2 The directions given to the students in Part I are clear and easy to understand.	47	70.2%	29.8%	0.0%	0.0%
1.3 The illustrations in the items in Part I are appropriate, clear, and easy for the students to interpret.	47	78.7%	21.3%	0.0%	0.0%
1.4 The provided manipulatives are easy for the students to use.	47	83.0%	10.6%	6.4%	0.0%
1.5 The topic of each story and item in Part I is relevant, interesting, and meaningful to the students.	47	59.6%	29.8%	10.6%	0.0%
1.6 The topic in each story and item in Part I does not pose a fairness issue because of some students' prior knowledge or lack of exposure.	46	45.7%	32.6%	17.4%	4.4%
1.7 With proper accommodations, the items are appropriate for students with disabilities.	46	56.5%	30.4%	13.0%	0.0%
1.8 The items are appropriate for English language learners (ELLs).	46	50.0%	30.4%	15.2%	4.4%
Feasibility of the Administration	**N**	**Strongly Agree**	**Somewhat Agree**	**Somewhat Disagree**	**Strongly Disagree**
2.1 The directions are clear and easy to follow.	47	72.3%	25.5%	2.1%	0.0%
2.2 The amount of time expected for each student to complete Part I of the assessment is appropriate.	47	63.8%	25.5%	8.5%	2.1%
2.3 The format of the assessment allows for easy administration.	47	76.6%	12.8%	8.5%	2.1%
2.4 Scoring students' responses to the questions in Part I is simple and straightforward.	45	88.9%	11.1%	0.0%	0.0%
2.5 The rating scales used in Part II are easy to understand and apply.	46	60.9%	28.3%	10.9%	0.0%
2.6 The checklists are easier to complete than the observational rubrics.	46	47.8%	19.6%	30.4%	2.2%
2.7 The observational rubrics allow for better consistency in rating all students than the checklists.	47	55.3%	42.6%	2.1%	0.0%

3.2.5 Summary

For the direct-assessment items, there was evidence that supported the accessibility and overall validity of the selected-response and performance-task items as measures of kindergarten readiness. The percentage of students who received the maximum points was greater than 85% for 25 of the 43 selected-response and performance-task items. The questionnaire results indicated that a large percentage (80% or more) of test administrators felt positively (either "strongly agree" or "somewhat agree") that the items were accessible. Furthermore, all test administrators agreed, either strongly or somewhat, that the directions and illustrations were clear, easy to understand, and appropriate for students. All but three test administrators felt that the manipulatives were easy for the students to use.

Despite the fact that 18 of the 43 direct-assessment items did not perform as well as the other items, there was no clear indication that item type (i.e., selected response or performance task) systematically contributed to the lower percentages of students receiving the maximum number of points on these specific items. A more thorough investigation to determine the reason for the lower scores on these items was reserved for the Field Test.

The questionnaire statements that yielded the most disagreement among the test administrators, although only from a relatively small percentage, were those that referred to the content or context of the items (i.e., statements 1.1, 1.5, and 1.6). It is possible that the reason for the test administrators' mixed reactions to statement 1.1 was due to the fact that only a subset of the assessable content was included in the Pilot Test. More evidence supporting the conclusion that the rating of an item as inappropriate had more to do with the content or context of the item rather than with the item type itself could be found in the test administrators' comments about the items. Almost all comments that were critical of the items referenced the context of the items, rather than the mechanics of the item type itself.

There was strong evidence that the checklist and observational-rubric items are both appropriate for the KRA. Based on the results in the contingency tables, neither observational-assessment item types appeared clearly superior. However, the results from the questionnaire were more informative. Almost all (98%) of the test administrators agreed, either strongly or somewhat, that the observational rubrics allowed for better consistency in rating the students (statement 2.7), but nearly 70% agreed that the checklists were easier to complete than the observational rubrics (statement 2.6). A number of the written comments seemed to contradict each other. Several test administrators felt that the level of discrimination required by the observational rubrics would be difficult to complete at the beginning of the school year because teachers had a limited amount of time with the students; therefore, it would be difficult to score the students' performance accurately. On the other hand, several comments indicated a preference for the rubric since it was more specific. Based on the aforementioned results and test administrators' comments, WestEd recommended that the KRA utilize a combination of the features of the checklist and observational-rubric items for the observational part of the KRA, such that all observational items would be based on a rubric that describes the skill, but at only three levels rather than at four levels.

Concerning the feasibility of administration, there was strong evidence that the assessment was manageable and straightforward. Almost all (98%) of the test administrators felt that the directions were clear and easy to follow (statement 2.1), and nearly 90% felt that the format of the assessment

was appropriate and easy to administer (statement 2.3). Further, 89% of the test administrators indicated that the amount of time to complete the direct-assessment part of the pilot was appropriate (statement 2.2). A few comments provided by test administrators expressed concerns about assessing an entire class, especially at the beginning of the school year. This suggested that further investigation was warranted with the upcoming Field Test.

Overall, the Pilot Test data and findings supported the assumptions underlying the assessment. All items from the Pilot Test were reviewed by content specialists and a decision was made whether to include or exclude them from the Field Test. All findings from the Pilot Test informed the development of replacement items or new items in order to maximize their accessibility and overall validity.

3.3 Field Test

The Field Test was conducted during November and December 2013.

3.3.1 Purpose

The Field Test was a trial administration of the KRA, in which all aspects of the assessment were investigated (i.e., the content of the KRA items, the feasibility of the administration, the allowable student supports, the online data system, and the professional development). The focus of the Field Test was to administer the KRA items to a representative sample of students from Maryland and Ohio, in order to evaluate the performance of each item relative to the intended skill being assessed by the item and to collect information to inform item selection for the first census administration.

3.3.2 Design

In September 2013, prior to the administration of the Field Test, all items were reviewed and accepted by a bias and sensitivity committee and a content review committee. The bias and sensitivity committee consisted of community members from Maryland and Ohio who represented the diversity of the testing population. The content review committee consisted of educators from several districts across Maryland and Ohio. Table 3.3.2.A summarizes the criteria used by each committee to evaluate the items for any bias and sensitivity and/or content issues.

Table 3.3.2.A—Bias and Sensitivity and Content Review Criteria

Review	Criterion	Description
Bias and Sensitivity	Equal Opportunity and Access	The content and language of the items should provide all students with a fair opportunity to demonstrate what they know, regardless of: gender, race/ethnicity, culture, socioeconomic status, location, religion, disabling condition.
	Appropriate Portrayal of Groups	The subjects, issues, and/or themes addressed by the items must be approached in a way that does not demean, offend, or inaccurately portray any religious, ethnic, cultural, gender, or social group.
	Protection of Privacy	The content of the items cannot intrude on the privacy, values, or beliefs of students or their families.
Content	Alignment to standards	The item reflects the intention of the essential skills and knowledge.
	Appropriateness of development level	The expectation for student demonstration of the skill and/or knowledge required by the item is appropriate for the developmental level.
	Item format	The visual and verbal presentation of the item and the means by which the student responds is appropriate.
	Scoring guidelines	The range of score points for the item and description of the student performance for each score point are appropriate.

Following the bias and sensitivity and content reviews, items were revised or amended to reflect feedback received from the committees.

The Field Test included 164 items (49 selected response, 58 performance task, and 57 observational rubric). The items were assessed across six forms (Forms A–F). Each teacher administered one of the six forms to all students in his or her class. Forms A, B, and C contained items from the Language and Literacy domain only. Forms D and E contained items from the Mathematics and Science domains. Form F contained only observational-rubric items from all domains except Mathematics. Table 3.3.2.B summarizes the six forms and the distribution of item types on each form.

Table 3.3.2.B—Field Test Forms and Item Type Distribution

Item Type	Form A	Form B	Form C	Form D	Form E	Form F
Selected Response	13	13	13	5	7	0
Performance Task	11	11	11	17	15	0
Observational Rubric	0	0	0	0	0	57
Total	24	24	24	22	22	57

3.3.3 Sample

In order to support item analyses, 500 student responses per item were desired. To secure this required number, the target sample size was 600 students per form.

The Field Test forms were distributed at the school level; in other words, the same form was administered by every teacher within a school who participated. A total of 237 teachers participated in

the Field Test, 79 from Maryland and 158 from Ohio. Table 3.3.3.A includes the sample population of the distribution of students, by form, who participated in the Field Test.

Table 3.3.3.A—Student Sample for Field Test

	Form A	Form B	Form C	Form D	Form E	Form F	Total
Maryland	293	286	239	308	278	210	1,614
Ohio	564	401	428	333	400	1,288	3,414
Total	857	687	667	641	678	1,498	5,028

To ensure a balanced representation of students, the sample included urban, rural, and suburban schools (proportional to their representation in each state) and ethnic distribution representative of the individual states. Similarly, a representation of low-socioeconomic-status (low-SES) schools, English learners, and students identified as special education students were also included within the sample. Table 3.3.3.B includes the distribution of students by form and demographic criteria.

Table 3.3.3.B—Field Test Sample—Demographics Distribution by Form

		A	B	C	D	E	F	Total
Ethnicity	American Indian	1	3	1	1	0	6	12
	Asian or Pacific Islander	13	33	23	38	1	15	123
	Black	155	137	177	166	187	135	957
	Hispanic	39	39	39	38	59	43	257
	Multiple	75	34	44	43	43	110	349
	White	571	336	238	295	319	657	2,416
	Other/Unknown	3	105	145	60	69	532	914
Low SES	Yes	459	358	255	246	250	337	1,905
	No	395	295	225	238	203	629	1,985
	Blank	3	34	187	157	225	532	1,138
English learner	Yes	94	42	74	52	61	121	444
	No	760	629	485	523	548	846	3,791
	Blank	3	16	108	66	69	531	793
Special Education	Yes	79	43	39	64	24	69	318
	No	775	628	520	511	585	898	3,917
	Blank	3	16	108	66	69	531	793

The Ready for Kindergarten Online system was used to collect all item-level data, including students' scores on individual items and teachers' comments about individual items. The data system included class rosters and the scoring criteria, aligned to the Test Administration Manual, for the specific form being administered by the teacher. The data system was accessible only to teachers participating in the Field Test and required secure login credentials.

Following the administration of the Field Test, the teachers were surveyed (via SurveyMonkey) to collect feedback on the administration as a whole. The survey included questions regarding the content of the KRA items, the feasibility of the administration, the allowable student supports, the online data system, and the professional development.

3.3.4 Findings

Item-level statistics (i.e., mean, standard deviation, difficulty, and score-point distribution) were used to determine which of the 164 KRA items were appropriate for inclusion in the census administration. For selected-response items, an analysis of distracters (incorrect answer choices) was also completed. Only one item (SC.1.1.B_A111) needed to be removed for poor performance. The remaining items were considered eligible for inclusion in the census administration. The item-level statistics for all Field Test items are provided in Appendix G. Many of the items that were on Form F show a greater percentage of missing scores because the state departments provided the option to complete only part of the form.

In addition to the quantitative item data, the teachers' qualitative comments were considered. Of the 237 teachers who participated in the field test, 171 submitted surveys. Table 3.3.4.A summarizes the teacher survey responses regarding the general administration, the administration of the direct assessment items, and the administration of the observational-rubric items.

Table 3.3.4.A—Summary of Field Test Teacher Survey Responses

General Administration	N	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
The Test Administrator Manual was easy to use.	171	22.2%	63.7%	12.3%	1.8%
The test materials were easy to use during administration.	169	13.6%	59.2%	21.9%	5.3%
The specific skills or behaviors addressed by the assessment items align to classroom instruction.	170	10.0%	69.4%	15.9%	4.7%
The specific skills or behaviors addressed by the assessment items are appropriate for entering kindergarten students.	168	8.3%	50.0%	32.1%	9.5%
The data gathered from the KRA could be used to develop classroom activities/lessons.	170	7.6%	64.1%	23.5%	4.7%
The data gathered from the KRA could guide classroom instruction.	168	7.1%	64.9%	24.4%	3.6%
The data gathered from the KRA could be used to individualize instruction.	166	8.4%	68.7%	19.9%	3.0%
Administration of Direct Assessment Items (Forms A–E)	**N**	**Strongly Agree**	**Somewhat Agree**	**Somewhat Disagree**	**Strongly Disagree**
The scoring criteria are easy to apply.	124	11.3%	60.5%	23.4%	4.8%
It was easy to embed the administration of assessment items into a typical day of instruction.	123	1.6%	16.3%	35.8%	46.3%
The item scripts (item text read to the students) are appropriate for children entering kindergarten.	124	5.6%	62.1%	29.0%	3.2%
The graphics and illustrations are appropriate for children entering kindergarten.	124	11.3%	75.0%	12.9%	0.8%
The manipulatives are appropriate for children entering kindergarten.	120	13.3%	66.7%	16.7%	3.3%
The item context (topic of story setting) is appropriate for children entering kindergarten.	122	10.7%	71.3%	15.6%	2.5%

Administration of Observational-Rubric Items (Form F)	N	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
The observational rubrics (Form F) are easy to use or apply.	45	6.7%	42.2%	35.6%	15.6%
The behaviors in the observational items were easy to observe in a typical day of classroom instruction.	45	4.4%	28.9%	53.3%	13.3%
It was easy to embed the administration of assessment items into a typical day of instruction.	45	4.4%	28.9%	46.7%	20.0%

Teachers were also asked to provide open-ended comments regarding the administration of the Field Test and content of the assessment items. The open-ended comments were grouped into categories based on topic, and general themes were determined. Table 3.3.4.B summarizes the topics and general themes of the open-ended teacher survey responses.

Table 3.3.4.B—Summary of Open-Ended Teacher Survey Responses

Topic	General Themes
Administration	• Logistics of embedding administration in classroom activities. • Too long; extensive time investment. • Difficult to administer and assess at the beginning of the school year.
Skills/Behaviors Assessed	• Information could be used to inform instruction. • Too difficult for entry to kindergarten. • Not enough academic/Common Core State Standards (CCSS) focus. • Not aligned to classroom instruction (e.g., motor skills, social foundations). • Observational-rubric items were too subjective. • Too difficult to assess observational-rubric items at entry to kindergarten. • Difficult to observe some skills if situation does not occur in daily classroom activities; may need a structured activity to elicit some behaviors. • Too many skills assessed. • Preference to focus on letter and sound recognition for all letters, rather than a subset of letters. • De-emphasize syllables, ending sounds, and plurals; include more rhyming and letter sounds. • Science items too difficult and not critical for entry to kindergarten.
Use of Online System	• Students should be listed alphabetically by last name. • Format and order of items should match the teacher manual. • Too much scrolling required. • Include auto-save feature for entering scores. • Paper-based score sheet should match online system.
Professional Development	• Simulator activity was great. • Helpful in understanding the expectations of administration. • Helpful with planning the administration. • Face-to-face and online trainings were very helpful. • Electronic Learning Communities were helpful. • Focus future professional development on how to administer.

3.3.5 Summary

The Field Test data were used to determine which subset of the 164 KRA items to include in the census administration. The KRA 1.0 Blueprint provided the framework that was used to determine the final set of 63 items, by item type and domain. As is typical with field testing, an overage of items was administered and analyzed to ensure that enough items were eligible for the census administration. The first step of the item analysis was to remove any items that did not perform well during field testing. In this instance, one item needed to be removed for poor performance. In addition to the quantitative item data, the teachers' qualitative comments were considered. Upon completion of the quantitative and qualitative analyses, the final set of items based on the KRA 1.0 Blueprint was recommended for the census administration of KRA 1.0.

The data collected as part of the teacher survey helped to inform key decisions in preparation for the census administration. In general, the results of the teacher survey indicated agreement with and support for the KRA. Almost all of the survey questions received 70% or greater teacher agreement. The few survey questions with lower rates of agreement were identified as areas for improvement. The main areas for concern were the administration logistics (time and effort required at the beginning of the school year), the observational items that assessed the Social Foundations domain (some teachers responded that they found these items difficult to assess), and the efficiency of recording and entering item scores into the online data system. These concerns were consistent with expectations of the stakeholders, especially when implementing a new assessment system.

As a result of the Field Test, several strategies were implemented to address the areas of improvement. To mitigate the concerns with the Social Foundations items, a larger focus on the importance of these skills for kindergarten readiness was implemented in the professional development. In addition, the professional development sessions were structured to provide opportunities for teachers to plan for the KRA administration and to highlight best practices for administering observational items. Because the online data system was in its early stages of development at the time of the Field Test, extensive enhancements were made to improve the user experience and reduce the amount of time required to administer the KRA.

3.4 Census

3.4.1 Administration

The KRA was administered statewide in Maryland and Ohio during fall 2014. Table 3.4.1 shows the complete administration schedule for Maryland and Ohio.

Table 3.4.1—KRA (Fall 2014) Administration Schedule

	Administration Window	Deadline for Data Completion
Maryland	First day of school–November 7, 2014	December 15, 2014
Ohio	First day of school–November 1, 2014	December 15, 2014

3.4.1.1 Administration Materials

The materials needed for the administration of the KRA were:

- the Teacher Administration Manual (TAM);
- the Test Item Images booklet;
- the item manipulatives;
- a pencil and a blank sheet of paper (8.5"x 11"), one per student, for Items 16 and 17 in the Language and Literacy section; and
- item score sheets.

Each teacher was provided with the TAM, Test Item Images booklet, and item manipulatives. The item score sheets were accessed via the Ready for Kindergarten Online system.

3.4.1.2 Test Security

The KRA materials were considered secure documents and were kept in a secure location at all times, except during administration. During the administration, the security of test materials was carefully monitored by the teacher. The teachers followed all state, district, and school test-security guidelines to ensure the security of the assessment materials before, during, and after the administration. It was unethical, and viewed as a violation of test security, for any person to:

- disclose, allow to be disclosed, or record video of the content of any portion of the KRA before, during, or after administration;
- allow students access to KRA items prior to administration;
- allow students to share KRA information during or after administration;
- read any parts of the KRA to students, except as indicated in the TAM;
- influence students' answers or change students' answer choices; and
- participate in, direct, aid, counsel, assist in, encourage, or fail to report any violations of these test-security procedures.

3.4.1.3 Guidelines on Allowable Supports for the Kindergarten Readiness Assessment

The *Guidelines on Allowable Supports for the Kindergarten Readiness Assessment* include a list of universally designed allowable student supports that can be used with any student participating in the KRA.

If the universally designed supports proved insufficient to enable students with disabilities or English learners to demonstrate their skills and knowledge, the teacher was expected to use the appropriate Level the Field support(s) described in the *Guidelines on Allowable Supports for Administration of the Kindergarten Readiness Assessment*.

The *Guidelines on Allowable Supports for the Kindergarten Readiness Assessment* for Maryland and Ohio are included in Appendix H.

3.4.1.4 Ready for Kindergarten App

For the fall 2014 administration, there were 12 items that could be administered via the Ready for Kindergarten app. Administration of items via the app was optional. Table 3.4.1.4 shows the number of students who completed items via the app, total number of students, and percentage of the total of students from each state who completed items via the app.

Table 3.4.1.4—Students Administered Items via Ready for Kindergarten App

	Students*	Total	Percentage of Total
Maryland	29,915	67,092	44.6%
Ohio	20,703	132,872	15.6%
Total	50,618	199,964	25.3%

**Because the number of students who completed an item via the app varied slightly from item to item, the average (mean) number of students across the 12 items is used to indicate the number of students who used the app.*

3.4.1.5 Alternate KRA Materials

Two alternative TAMs were developed: one for students with significant vision impairments and one for students who communicate using American Sign Language. Additionally, a Braille version and tactile graphic version of the student Test Item Images were developed to ensure the accessibility of the assessment.

3.4.2 Post-Administration Focus Groups and Surveys

Upon completion of the KRA 1.0 administration in November 2014, Maryland and Ohio each conducted a post-administration review and analysis. Focus groups were conducted by ODE staff throughout December 2014 and January 2015. MSDE, in conjunction with JHU CTE, conducted a formal online survey of teachers to collect feedback and data on the administration of KRA 1.0.

Results from each of the post-administration activities helped to inform the reduction of items, which is further discussed in Section 4.2.3.

4 KRA Data Analyses, Standard Setting, and Reporting

4.1 Item Scores

The KRA 1.0 included dichotomous and polytomous items. All selected-response items were dichotomous and were scored 0–1. Performance-task items were either dichotomous or polytomous and were scored 0–1, 0–2, or 0–3. Observational-rubric items were polytomous and were scored 0–2.

KRA items were scored by the teacher who administered the assessment, unless a student completed items via the Ready for Kindergarten app. Items administered via the Ready for Kindergarten app were auto-scored.

In some circumstances, a teacher determined that an item could not be administered to a student after following the processes described in the *Guidelines on Allowable Supports for Administration of the KRA* document. In this scenario, the teacher entered “Not Scorable” for that particular item. Each state handled “Not Scorable” items differently when calculating overall and domain scores for reporting (see Section 4.4.2).

4.2 Data Analyses

Classical item analysis, factor analysis, and Item Response Theory (IRT) were used to evaluate the KRA items after the first census administration in fall 2014.

4.2.1 Classical Item Analysis

All KRA items were evaluated for their mean, standard deviation, difficulty (*p*-value), and discrimination (item-rest correlation). These statistics are provided in Appendix I. Items were evaluated for their internal consistency (Cronbach's alpha), both overall and within each domain.

Item difficulty is determined by dividing the mean score by the maximum points possible for each item, resulting in the proportion of students who correctly completed the item. This proportion of students (i.e., *p*-value) is represented by a value between 0.00 and 1.00. Items with *p*-values closer to 1.00 indicate that the items were answered correctly by many students and are considered easier items. Items with *p*-values closer to 0.00 indicate that the items were answered correctly by fewer students and are considered more difficult items. The *p*-values for the fall 2014 administration of the KRA fell between 0.15 and 0.95, with the majority between 0.60 and 0.85. Because the KRA Blueprint is based on the pre-kindergarten early learning standards and students were assessed at the start of kindergarten, the *p*-values are expected to be slightly higher than is typically observed in other state-level or grade-level assessments.

It is expected that students who achieve high scores on the overall assessment will achieve higher scores on individual items. Conversely, students who achieve lower total scores on the assessment are expected to achieve lower individual item scores. Item discrimination is a measure of these expectations. The item-rest correlation is used to evaluate item discrimination by determining an individual item's relationship to the total assessment (or domain), excluding the item of interest. Item-rest correlations are values between -1.00 and 1.00, where 0 represents no correlation. Item-rest correlations are expected to be positive values because students who perform better overall are expected to perform better on the individual items, leading to positive correlation between performance on an individual item and the overall test.

Cronbach's alpha is a reliability measure that describes the internal consistency of items as a group. It is a function of the number of items and the inter-item covariance. Values for Cronbach's alpha fall between 0.00 and 1.00. Although there is no clear value for measures of reliability that is considered appropriate, values greater than 0.80 are generally considered desirable for widely used scales, as they indicate that the group of items demonstrates internal consistency. At that level, correlations are attenuated very little by random measurement error (Carmines & Zeller, 1979).

Table 4.2.1 provides a summary of the *p*-values, item-rest correlations, ranges, and Cronbach's alphas for the overall score and by domains for KRA 1.0.

Table 4.2.1—Summary of *p*-Values, Item-Rest Correlations, Ranges, and Cronbach's Alpha for KRA 1.0

	Number of Items	*p*-Value			Item-Rest Correlation			Cronbach's Alpha
		Mean	SD	Range	Mean	SD	Range	
Overall	63	0.72	0.14	0.15–0.95	0.47	0.15	0.15–0.70	0.95
Language and Literacy	20	0.73	0.15	0.35–0.95	0.43	0.11	0.21–0.57	0.84
Mathematics	15	0.68	0.20	0.15–0.92	0.40	0.10	0.20–0.54	0.78
Physical Well-Being and Motor Development	7	0.83	0.04	0.76–0.87	0.55	0.04	0.50–0.59	0.81
Social Foundations	16	0.72	0.07	0.59–0.84	0.68	0.04	0.59–0.73	0.94
Science	3	0.69	0.07	0.61–0.74	0.11	0.01	0.09–0.12	0.20
Social Studies	2	0.73	0.08	0.67–0.79	---	---	---	0.72

4.2.2 Factor Analysis

As described in previous sections, the KRA is designed to assess general readiness for kindergarten, as described by the essential domains of school readiness and Maryland's and Ohio's early learning standards; thus, school readiness is considered the main latent trait being assessed. The KRA is unique, however, because it comprises several constructs (i.e., domains) that are typically assessed separately in other education assessments. Assuming that each of the domains contributes to readiness for kindergarten, one expects that each of these constructs accounts for variability in student performance. Factor analysis is a method for gaining a better understanding of the underlying variables that most contribute to variance in student performance. Based on a matrix of inter-item correlations, factor analysis is a statistical technique used to determine a possible set of underlying variables (i.e., factors) that account for the observed variance.

Factor extraction was completed using the principal-component factors method within the Stata® statistical software package. The KRA data from all students in Maryland and Ohio who completed all items were used for this analysis. In order to determine the number of factors to retain, two common methods were employed: the scree test and the Kaiser criterion. The scree test utilizes the scree plot (a graph of eigenvalues against number of factors) to determine the bending point in the data where the curve begins to flatten. The Kaiser criterion suggests retaining all factors whose eigenvalue is greater than one. Figure 4.2.2 is the scree plot, graphing the eigenvalue versus the factor number, obtained from the KRA data.

Figure 4.2.2—Scree Plot of Explained Variance

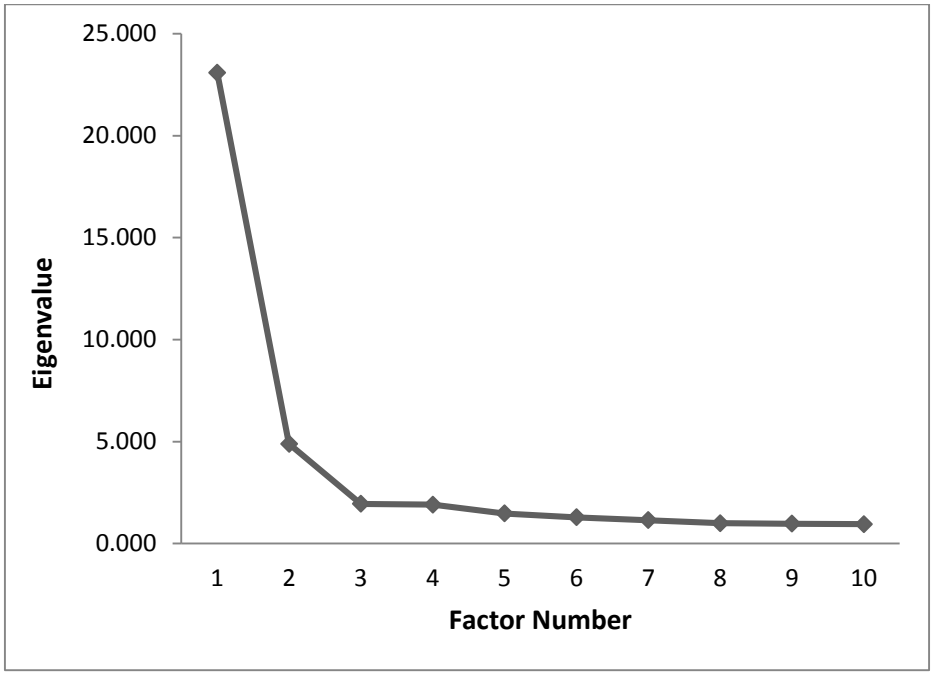

Table 4.2.2.A lists the eigenvalues for the first seven factors (values greater than 1.0), including the percentage of variance explained by each factor.

Table 4.2.2.A—Eigenvalues and Variance by Factor

Factor	Eigenvalue	% of Variance	Cumulative %
1	23.094	36.7	36.7
2	4.891	7.8	44.5
3	1.945	3.1	47.6
4	1.907	3.0	50.6
5	1.477	2.4	53.0
6	1.289	2.1	55.1
7	1.148	1.8	56.9

Based on the scree test and Kaiser criterion, and given that the KRA comprises multiple domains (see the KRA Blueprints in Section 2.3), analyses were run for four, five, and six factors. Because the KRA consists of multiple, and seemingly related, domains of school readiness, oblique rotation was chosen instead of orthogonal rotation, as it allows for the correlation of factors. Further, since behavior is rarely packaged neatly into units that function independently, especially during early childhood development, oblique rotation is believed to render a more accurate and reproducible solution (Costello & Osborne, 2005).

The four-factor analysis yielded the best fit and most interpretable results. All but five items loaded (retaining loadings greater than 0.3) on one of the four factors, and only four items cross-loaded on two factors. Table 4.2.2.B summarizes the results of the four-factor analysis, including the underlying construct of each factor as evaluated by the KRA developers. The factor loadings for individual items are provided in Appendix J.

Table 4.2.2.B—Summary of Four-Factor Analysis

Factor	Underlying Construct	Number of Items	Range of Item Loadings
1	Social Engagement	17	0.36–0.90
2	Self Regulation/Control	14	0.41–0.96
3	Foundational Academic Skills	13	0.34–0.93
4	Applied Academic Skills	18	0.31–0.79

4.2.3 Item Reduction

After completion of the administration of the KRA 1.0, feedback from the field indicated that the time and effort to administer the assessment was challenging. In an effort to assuage these challenges and concerns from the field, Maryland and Ohio decided to reduce the length of the KRA for the subsequent administrations. The state leadership teams, in conjunction with the assessment, technology, and professional development partners, held a meeting on February 2 and 3, 2015, to review the item data (i.e., classical item analysis and factor analysis discussed in Sections 4.2.1 and 4.2.2, respectively) and to discuss the feedback received from teacher surveys and focus groups. The goal of this meeting was to agree upon a reduced set of items that would alleviate the perceived burden of administration, yet still retain enough content to allow for reporting valid and reliable results.

Upon conclusion of the meeting, the leadership teams agreed to reduce the length of the assessment by approximately 20%, from 63 to 50 items. Of the 13 items that were removed, five were selected-response or performance-task items and eight were observational-rubric items. The decisions to remove these 13 items were based on feedback that indicated that the items were more difficult or time intensive to administer or that they were not as critical to the evaluation of students' readiness for kindergarten. It was decided to move the retained items from the Science and Social Studies domains into the Social Foundations domain based on the results of the factor analysis.

The resulting version (i.e., KRA 1.5) will be administered in fall 2015 and fall 2016. The KRA 1.5 Blueprint is presented in Table 2.3.B in Section 2.3.

Table 4.2.3 provides similar information to that of Table 4.2.1, and summarizes the *p*-values, item-rest correlations, ranges, and Cronbach's alphas for the overall score and by domains for KRA 1.5. The revised item-rest correlations for KRA 1.5 are included in Appendix I.

Table 4.2.3—Summary of *p*-Values, Item-Rest Correlations, Ranges, and Cronbach's Alpha for KRA 1.5

	Number of Items	*p*-Value			Item-Rest Correlation			Cronbach's Alpha
		Mean	SD	Range	Mean	SD	Range	
Overall	50	0.75	0.12	0.46–0.95	0.47	0.12	0.23–0.67	0.94
Language and Literacy	17	0.76	0.13	0.57–0.95	0.44	0.10	0.29–0.54	0.82
Mathematics	14	0.71	0.14	0.46–0.92	0.41	0.08	0.27–0.55	0.78
Physical Well-Being and Motor Development	7	0.83	0.04	0.76–0.87	0.55	0.04	0.50–0.59	0.81
Social Foundations	12	0.73	0.08	0.59–0.84	0.64	0.05	0.53–0.72	0.91

4.2.4 IRT Rasch Scaling

As is typically done with measures of education assessments, the 50 items on the KRA 1.5 were scaled to aid in interpretation. A one-parameter item response theory (IRT) model, commonly referred to as the Rasch model, was used to define the relationship between the assumed latent trait (readiness for kindergarten) and the probability of a student correctly answering a given KRA item. This model assumes that responses are a function of a student's knowledge about the assessment content and the difficulty of the item. This model allows the student score and the difficulty of the item to be placed on the same scale, known as theta (θ), which represents the latent trait being measured. This θ scale allows direct interpretation of the difficulty of an item and the probability of a student answering an item correctly. The probability that a student will answer a question at a given level is determined by whether the student's score is below, at, or above the difficulty threshold for the level.

In mathematical terms, the Rasch model is a logistic regression model based on a single parameter, known as the item difficulty parameter (*b*). The formula for the one-parameter model is a logistic equation:

$$P(Ui = 1 \mid \theta) = P(\theta_i) = \frac{e^{(\theta - b_i)}}{1 + e^{(\theta - b_i)}}$$

In the equation above, b_i = item difficulty and θ = student ability. The expression P(*Ui* =1|θ) represents the probability of a student of ability θ answering item *i* correctly.

For polytomous items, the partial credit model dichotomizes responses by making binary comparisons between adjacent score categories (*k* and *k-1* out of *m* possible responses). The probability that a person of ability θ will reach response *k* given that the response is in either *k* or *k-1* is:

$$P_{ik|k,k-1}(\theta) = \frac{P_{ik}(\theta)}{P_{i,k-1}(\theta) + P_{ik}(\theta)} = \frac{1}{1 + e^{(b_{ik} - \theta)}} = \frac{e^{(\theta - b_{ik})}}{1 + e^{(\theta - b_{ik})}}$$

The IRT parameters were calculated using Winsteps Rasch measurement software, with the mean of student ability set to 0. Table 4.2.4 summarizes the number of items with Infit and Outfit statistics between 0.5 and 1.5. Items with fit statistics that fall between 0.5 and 1.5 are considered productive for measurement (Lincare, 2015).

Table 4.2.4—Summary of Infit and Outfit Statistics

	Number of Items		
	Below 0.5	**Between 0.5 and 1.5**	**Above 1.5**
Infit	0	49	1
Outfit	0	48	2

The IRT parameters and fit statistics for all KRA 1.5 items, including the step parameters for polytomous items, are provided in Appendix K.

4.3 Standard Setting

4.3.1 Performance Levels

Throughout the development process, there were ongoing discussions about what information could be reported on student performance and how that information would be meaningful for policymakers and educators. Based on these different purposes, it was decided that students' overall performance should be classified into three categories: students who are demonstrating readiness for kindergarten, students who are approaching readiness, and, finally, students whose readiness skills are emerging. In determining these categories of performance, the focus was placed on whether students demonstrate the skills and behaviors upon entering kindergarten that reflect their readiness to engage in instruction based on kindergarten content standards. Performance level descriptors (PLDs) that define these principles of readiness were developed, and they are presented below. These PLDs are critical to establishing a common understanding of readiness and for supporting the standard setting activities that determine the cut scores for each of these levels.

- **Demonstrating Readiness**: [Student name] demonstrates foundational skills and behaviors that prepare [him/her] for instruction based on kindergarten standards.
- **Approaching Readiness**: [Student name] demonstrates some foundational skills and behaviors that prepare [him/her] for instruction based on kindergarten standards.
- **Emerging Readiness**: [Student name] demonstrates minimal foundational skills and behaviors that prepare [him/her] for instruction based on kindergarten standards.

4.3.2 Method

Reporting student performance into categories or levels of performance based on the student's performance on assessments is often more meaningful than reporting the raw or scaled scores themselves; therefore, there needs to be a way to determine how student performance on an assessment can be related to the performance levels. That is the role of standard setting—to determine how performance, as defined by scores on the assessment, relate to the performance levels. In other words, what score determines whether a student should be classified as demonstrating, approaching, or emerging readiness?

A well-established standard setting procedure, known as Bookmark, was used for the KRA (Mitzel, Lewis, Patz, & Green, 2001). With this method, panelists review an ordered item booklet in which the content of the assessment is presented in the order of difficulty, based on how students actually performed on the items. Panelists are then asked to place a "bookmark" at the point in the ordered item booklet where they believe the items would separate students into the different performance levels.

The standard setting for the KRA was held February 18–20, 2015, in Columbus, Ohio. The panelists were educators from Maryland and Ohio. The ordered item booklet was based on the reduced number of items reflected in the KRA 1.5 Blueprint, and the items were ordered using the response probability of 0.67 (i.e., RP67). This means that students at the cut score have a 2/3 chance of correctly answering the item at the cut score.

Panelists were asked to set two bookmarks. The first bookmark identified the items that separated students from the emerging to approaching readiness levels, and the second bookmark identified the

point in the ordered item booklet that separates students who are approaching readiness from those who are demonstrating readiness.

The key distinction between the PLDs focused on the degree of remediation required. Students in the emerging level require significant support on a breadth of content or are lacking significant skills or behaviors in a particular domain. Students demonstrating readiness require no re-teaching or remediation. These students are ready to begin with instruction based on the kindergarten content standards beginning on day one of the school year. The approaching readiness students are those who fall in between the emerging and readiness levels.

After receiving training on the standard setting process, reviewing the ordered item booklet, and discussing the PLDs, the panelists independently set their bookmarks for round one. After setting their bookmarks, the panelists discussed their selections, at their assigned tables, indicating their rationales for their bookmark placement. The ratings of the individual panelists were pooled separately for the first and second bookmarks and the median of the ratings was determined. (The median is selected as the best indicator of the overall group because it is not sensitive to extreme values, as is the mean.) The median ratings were presented to the group, and then the panelists engaged in a whole-group discussion about the outcomes.

Once the group discussion was completed, the panelists set their second set of bookmarks. They were encouraged to consider the whole-group discussion when making their second selections. Following the completion of the individual work, the panelists again discussed their placements at their individual tables. The median of the new bookmarks was calculated and then shared with the group.

These new values were discussed as a whole group, and then the impact data were presented demonstrating the proportion of students who would be assigned into the three performance levels based on the combined Ohio and Maryland data. The panelists then engaged in a group-facilitated discussion of the impact data and were encouraged to consider whether the proportions of students falling into the performance levels met their expectations. The panelists were guided through two additional rounds of standard setting until there was general consensus about the items that distinguished the performance levels and when the proportion of students who corresponded to those levels was appropriate, based on the panelists' evaluation of current student performance.

Cut scores were not established for each domain given that the number of points for each domain was insufficient to establish two cuts. The exception is that Ohio panelists established one cut for the Language and Literacy domain in order to support the Third Grade Reading Guarantee within the state.

4.4 Scaled Scores and Reporting

4.4.1 KRA Scaled Scores

Because IRT scaling takes place after the administration, raw scores were reported immediately after the fall 2014 administration so that teachers could utilize the results. However, scaled scores are preferred over raw scores because they allow for comparison of scores in future test administrations, despite potential changes in the total raw points.

The Rasch ability scale (i.e., θ scale) is centered at 0 and extends in both positive and negative directions. Applying a linear transformation to the θ scale is desirable because it allows for a scale that is more easily understood and does not include negative values. The θ scores determined by IRT scaling were converted using the linear transformation: scaled score = 12θ + 250. The scale was truncated at θ scores of -4 and 4, which results in minimum and maximum scaled scores of 202 and 298, respectively. The linear transformation also maintains the established cut scores, which translate to scaled scores of 258 and 270. The Physical Well-Being and Motor Development domain has a lower maximum score (289 instead of 298) due to a limited number of items and score points within the domain. Conversion tables for raw to theta (θ) to scaled scores are provided in Appendix L.

The overall scaled score determines each student's performance level. Domain scores are determined using the same parameters as established for the items when evaluated as an overall test in order to show relative strengths in each student's performance. The scaled cut score for the Ohio Third Grade Reading Guarantee, which applies to the Language and Literacy domain only, is 263.

Table 4.4.1.A summarizes the aggregate distribution of student results by performance level based on the data from both states. These values are based on only students with complete data. A more detailed display of the distributions of scaled scores (overall and by domain) is provided in Appendix M.

Table 4.4.1.A—Aggregate Distribution by Performance Level

Reporting Category	Overall Scaled Score Range	Combined (n = 186,650)
Demonstrating	270–298	40.3%
Approaching	258–269	38.1%
Emerging	202–257	21.6%

4.4.2 Reporting

Each state established different rules for reporting overall and domain scores for students who had missing item scores and/or "Not Scorable" items. Tables 4.4.2.A and 4.4.2.B summarize the guidelines for reporting scores in Maryland and Ohio, respectively.

Table 4.4.2.A—Guidelines for Reporting KRA Scores in Maryland

	Scores Reported	Reporting Categories
Students who complete all items.	Overall score. Domain scores with error bands for each domain.	Demonstrating, Approaching, and Emerging.
Students with one or more "Not Scorable" items.	No overall score. Domain scores with error bands for domains that were completed.	Other.
Students with one or more items missing.	No overall score. Domain scores with error bands for domains that were completed.	Incomplete Assessment.

Table 4.4.2.B—Guidelines for Reporting KRA Scores in Ohio

	Scores Reported	Reporting Categories
Students who complete all items.	Overall score. Domain scores with error bands for each domain.	Demonstrating, Approaching, and Emerging.
Students who complete seven or more items in all four domains but have at least one "Not Scorable" or missing item.*	Overall score. Domain scores with error bands for each domain.	Demonstrating, Approaching, and Emerging.
Students who complete seven or more items in one, two, or three domains.*	No overall score. Domains scores with error bands for domains that were completed.	Incomplete Assessment.
Students who complete fewer than seven items in all four domains.	No overall score. No domain scores.	Incomplete Assessment.
Student who are missing all items.	No overall score. No domain scores.	Did Not Participate.

** In Ohio, missing items are not included in the calculation of overall and domain scores. "Not Scorable" items are not included in the calculation of scores for students who are designated as limited English proficiency (LEP) or students who are designated as having an individualized education program (IEP). "Not Scorable" items are scored zero (0) for students who are not designated as LEP or having an IEP.*

An Individual Student Report (ISR) is created for each student, which reports the overall score and related performance level to the student's teacher and family. The ISR includes the four domain scores and error bands, displayed as a vertical bar, that show relative strengths in the student's performance. Examples of the ISR for each state are included in Appendix N.

5 Technology Support

5.1 Overview of Ready for Kindergarten Online

Technical development of the Ready for Kindergarten Online system was led by the Johns Hopkins University Center for Technology in Education (JHU CTE). The system was developed based on requirements gathered from key personnel in MSDE and ODE. Version 1.0 of the Ready for Kindergarten Online system launched on August 18, 2014, to kindergarten programs across Maryland and Ohio.

The Ready for Kindergarten Online system supports:

- administration and scoring of the KRA, including a subset of the KRA items using child-friendly, touch-screen technologies;
- import and export of data to and from state longitudinal data systems;
- reports summarizing student-level results;
- reports to monitor completion of the KRA by key personnel at the local, district, and state levels;
- back-end data management of teachers, students, schools, and enrollment information;
- management of the assessment content and supporting materials; and
- delivery and support of professional development.

5.1.1 Role of JHU CTE

JHU CTE was responsible for technical planning, conceptual design, software development, quality assurance and user-acceptance testing; system deployment; technical monitoring; and end-user support phases of Ready for Kindergarten Online. JHU CTE collaborated closely on these activities with project leadership from Maryland and Ohio, the JHU CTE professional development team, WestEd, and external software and systems engineers. Specifically, JHU CTE:

- provided consultation related to how technology could efficiently and effectively be employed to meet the objectives and vision of the project;
- gathered information related to each state's needs, policies, current systems, and infrastructure;
- analyzed functional requirements, along with the information gathered to develop high-level and detailed technical specifications;
- verified system requirements with project leadership and key stakeholders;
- researched and recommended appropriate technologies, solutions, and delivery systems, including hardware and operating systems to be supported;
- developed preliminary and final technical architecture and system design documents for use by external technology partners;
- determined timeline and budget implications of various hardware, software, and technology development decisions, and consulted with the leadership team at critical decision points;
- oversaw the Ready for Kindergarten Online version 1.0 technical build and testing phases to ensure that the system was operational by the launch date;
- carried out ongoing system enhancement and modification based on feedback and usage patterns observed during the testing window;
- collected feedback and analyzed results of the Ready for Kindergarten Online version 1.0 implementation to inform recommendations for version 1.5; and
- provided Tier 3 technical support and training for help desks in both states.

5.1.2 Ready for Kindergarten Technology Development Process

The specific technology and database architecture that constitutes the Ready for Kindergarten system was determined through an iterative process of technical requirements analysis and stakeholder verification. Following the conceptual design phase carried out in collaboration with project leadership and key stakeholders in Maryland and Ohio, a detailed document outlining the proposed system requirements and technical architecture was developed. This specifications document provided the basis for a cost estimate for the technical build. An overview of the Ready for Kindergarten Online system design development is summarized in Table 5.1.2.

Table 5.1.2—Summary of Ready for Kindergarten Online System Design Development

Task	Activities	Timeline
Conceptual Design	Goals and expectations determined.	October–November 2012
System Requirements	Critical functionality documented.	November–December 2012
Stakeholder Verification	Requirements reviewed for feedback.	January 2013
Formal Requirements	Documentation completed for cost estimation.	April 2013
Cost and Timeline Estimation	Bids and timeline estimates requested.	May 2013
Resource Alignment	Selection of external technology partners, and prioritization of final build specifications.	June 2013
Wireframes and Graphic Design	Initial designs of user interface, workflow, and use-cases.	June–July 2013
Technical Build (Version 0.5)	Develop system for use with Field Test.	August–October 2013
Field Test	Initial implementation of technology.	November 2013
Data Guidelines	File layout and protocols for Ready for Kindergarten Online version 1.0 shared with districts.	May 2014
Technical Build (Version 1.0)	Develop Ready for Kindergarten Online version 1.0.	April–July 2014
Quality Assurance and User-Acceptance Testing	System testing and verification.	June–July 2014
Launch of Version 1.0	System launch across Maryland and Ohio.	August 2014
Stakeholder Feedback (Post-KRA 1.0 Administration)	Feedback collected to inform Ready for Kindergarten Online version 1.5 specifications.	November 2014–January 2015
Technical Requirements (Version 1.5)	Technical system enhancements for version 1.5 determined and incorporated.	February 2015–June 2015

5.2 Structure and Use of System

The Ready for Kindergarten Online system comprises two key components: (1) the Ready for Kindergarten Online website (the primary teacher interface) and (2) the Ready for Kindergarten app (for delivering a subset of the KRA items directly to students, using child-friendly technologies). Both of these technology components were field tested (November 4 through December 20, 2013), and the results and feedback from the field testing informed the development of version 1.0 of the app.

5.2.1 The Ready for Kindergarten Online Website

The Ready for Kindergarten Online website is the primary system interface for teachers. Upon login, the teacher is taken to a dashboard page that includes customized information pertaining to the teacher's professional development enrollments, the status of any required professional development assessments, and his or her students' KRA completion percentage. From the dashboard, the teacher can enter professional development resources or assessments or access the KRA to assess the students in his or her classroom.

Other features and functions of the Ready for Kindergarten Online website include the following.

- *Browsing/Scoring the KRA Assessment*: All assessment content was available on-screen for browsing and data entry. Scoring of the KRA could be accomplished in a variety of ways, including by individual student, by whole class, or by small group. Rubrics appeared on-screen for quick data entry. While version 1.0 was designed primarily for a standard PC/Mac desktop or laptop computer, this interface was mobile-friendly for use on tablet devices.
- *Printable materials and score sheets*: Professional development versions of the material included in the TAM were made available, in context to specific items, for download and printing. Score sheets were available for those teachers who wished to record KRA data manually and enter the data at a later time.
- *Group Creation*: To help teachers manage their KRA implementation, the system provided a mechanism for teachers to create sub-groups within their class, and to score the KRA using those groups.
- *Spreadsheet Mode*: Aligned with the printable score sheets, the spreadsheet mode provided a complementary, simple interface for entering data that were recorded without using technology. Transferring the scores from a paper score sheet was most easily accomplished using the spreadsheet mode.
- *Reports*: A set of simple reports was available to support implementation of the assessment, including the following.
    - Completion Report: Classroom- and student-level data provided a mechanism for teachers to monitor KRA completion by class, student, or domain. In addition, a completion report was developed for administrators to help them monitor KRA completion at the classroom, school, and district levels, based on their administrative position.
    - Language and Literacy Report (Ohio): A specialized report was developed for Ohio to provide KRA (Language and Literacy) results to local districts as part of the Third Grade Reading Guarantee.
    - Interim Child-Level Report: An interim report that reported raw KRA results by domain was available.
- *Comments*: In addition to rubric scores for each KRA item, the ability for teachers to include comments was available.
- *Allowable Supports*: Teachers were able to document any supports used with a particular student.

5.2.2 Ready for Kindergarten App

The Ready for Kindergarten app was developed to allow for 12 of the 63 KRA items to be delivered directly to students. The items selected were all selected-response and performance-task items, which reduced the burden on the teacher in two key ways: (1) no physical manipulatives were needed to administer the items if the teacher used the Ready for Kindergarten app, and (2) the items were scored automatically, based on the student's selection, reducing the amount of data entry required of the teacher and thus expediting the assessment delivery time.

Version 1.0 of the Ready for Kindergarten app was developed for use on iOS (Apple iPad) devices and distributed through Apple's App Store at no cost. In addition, a Flash-based version of the app was made available for download onto a Windows or Mac OS X computer. In most cases, the non-iOS version of the app requires the use of a mouse, thus not taking advantage of its child-friendly, touch-screen design. Some districts reported success using the app with touch-screen Windows tablet devices, though version 1.0 of the app was not designed for or tested on that platform.

5.2.3 Hosting and Scalability

Developing a scalable architecture for Ready for Kindergarten Online was a critical requirement from the beginning of the process. With nearly 12,000 teachers and 3,000 schools across Maryland and Ohio participating, maintaining system performance under heavy simultaneous usage was a critical requirement. A cloud-based hosting solution was selected for its scalability features and ease of monitoring; its variable cost-structure based on usage and need during high-usage periods, and its built-in security and backup capacities. The utilization of Amazon Web Services (AWS) as the cloud-based hosting environment allowed for rapid modifications to the server configuration in response to changes in network traffic and unexpected spikes in usage.

5.2.4 Server Infrastructure, Security, and Backups

The Ready for Kindergarten Online website and database utilized Amazon's Elastic Compute Cloud (Amazon EC2) servers and followed best industry practices for cloud-configured environments. The servers ran Enterprise Linux and utilized firewall configurations that isolated approved traffic and prevented activity on non-approved ports. Developer access over restricted ports was limited to explicitly approved IP addresses, and access was removed when not required. Databases, system snapshots, and file system backups were carried out at regular intervals and stored in secure locations for disaster recovery purposes and to ensure data integrity. All Internet traffic was secured with SSL, and passwords employed a hashing algorithm. Scripted testing, automated system scanning, and expert consultation were employed to ensure that the Ready for Kindergarten Online website and its accompanying app exchanged data securely, prevented unauthorized access or site usage, and were not vulnerable to intrusion by known methods.

5.3 Data Upload and Management

Prior to the administration window, the system was pre-populated with data identifying all districts and schools with kindergarten programs across Maryland and Ohio. Each state supplied the name and contact email of at least one data manager for each school district. A bulk-loader tool was developed to provide a mechanism for the upload of three types of data (CSV) files: (1) teachers—all teachers who would need access to the system to administer the KRA; (2) students—all kindergarten students in Maryland and Ohio; and (3) enrollment—matching teachers to the students whom they would need to

assess. The bulk-load system was designed to provide immediate, on-screen data validation feedback to data managers to ensure that the data records loaded were unique, formatted properly, and included all required fields. The file specifications were posted on a publicly available project website (dataguidelines.kready.org) along with FAQs and support resources.

On August 18, 2014, invitations were sent via email to all data managers with instructions for creating accounts in the bulk-loader system. Once an account was created, local districts had access to load and manage their own teacher, student, and enrollment data. Data managers were encouraged to refresh their district's data in the system on a regular basis throughout the assessment window to reflect new student enrollment, changes to teacher staffing, and student transfers between schools and districts.

The bulk-load system remained open and active throughout the KRA window. By the end of the assessment period, a total of 204,310 kindergarten student records had been loaded into the system (136,906 in Ohio, and 67,404 in Maryland). The number of teacher records created by data managers was 11,843 (8,067 in Ohio, and 3,776 in Maryland). The teachers and students represented a total of 2,625 school sites (1,724 in Ohio, 901 in Maryland). After the assessment window was closed, the system was taken offline in order to remove the KRA data-entry functionality, and then reopened for data managers to provide an opportunity to update records with data fields that were not available at the beginning of the assessment window (demographics, IEP and ESL information, prior care, etc.). On December 16, 2014, the system was taken offline again so that the data could be analyzed by WestEd.

Challenges related to data management included the following.

- Identifying the correct individuals responsible for KRA data management was more difficult than anticipated. Significant effort was required by support staff during the assessment window to maintain an accurate pool of local data managers. In the future, an easier mechanism will be available for local data managers to create new local accounts as roles and personnel change.
- Data Accuracy was a significant challenge, as uploaded data frequently contained incorrect student or teacher identifications, birth dates, and name misspellings. While the bulk-load system provided feedback about records that required review and correction, further enhancements are needed to provide more detailed error messaging and administrative feedback to local data managers to help them identify and address inaccuracies in their local data.
- As a requirement of the system, the KRA needed to be available for teachers to use beginning on the first day of school. Kindergarten enrollment data, however, is fluid during the first weeks of school, and a state-issued unique student identifier (SSID) could not be guaranteed for all students when the school year began. For this reason, primary matching of student records occurred based on first name, last name, and date of birth. Challenges related to this matching schema were significant enough for Maryland and Ohio to modify this system requirement. For the next KRA assessment window in fall 2015, SSIDs will be required across both states. Teachers will be able to begin administration of the KRA at any time, but data entry can only occur once the SSID is available. [2]

[2] In Ohio, student names are not matched with KRA data at the state level; student names are matched only at the district level. Per state law, student assessment results and identifying information are never linked by state employees or agencies.

- The bulk-load system required local districts to regularly provide the Ready for Kindergarten Online system with data updates to reflect changes in enrollment and teacher information. During the first KRA window, data managers were required to manually upload and review the files. This became a time-consuming process, particularly for large districts. Enhancements are being developed to allow local districts to use a script to automatically drop data files to a location where the Ready for Kindergarten Online system can pick them up. While local review will still be required to ensure accuracy, the process of providing the data will become much less time intensive going forward.

5.4 Help Desk

The purpose of the KRA Help Desk was to provide timely support to teachers administering the KRA and to data managers working with the bulk loader, thus increasing the speed and efficiency of implementation. While Maryland and Ohio implemented different versions of a KRA Help Desk, general support tiers were common across both states. Table 5.4 summarizes the general support tiers.

Table 5.4—Summary of KRA Help Desk General Support Tiers

Tier	Supports
Tier 1—Basic Questions About the System.	▪ Username/password issues, new users to add. ▪ Additions/deletions to student roster. ▪ How to download and install the app.
Tier 2—Questions that Require Some Degree of Troubleshooting.	▪ Minor glitches with the website or app. ▪ Data problems (duplicates, transfers, incorrect IDs, etc.).
Tier 3—Problems that Require Escalation to JHU CTE for Resolution.	▪ Bugs that could be replicated by the KRA Help Desk. ▪ Any problem the KRA Help Desk could not solve after troubleshooting. ▪ System-wide failure, downtime, or performance degradation.

Each call or email to the KRA Help Desk was tagged with a general support category. The most common categories, in order of prevalence, were:

- managing student and teacher data;
- help needed with username or password;
- question about the assessment content or scoring a student;
- reporting a possible software defect or system performance issue;
- question about the online professional development, including the *Simulator* tool;
- requesting contact information; and
- requesting documentation (such as the TAM).

Challenges with the KRA Help Desk included:

- The Ready for Kindergarten online system was completed shortly before statewide launch, limiting the amount of time KRA Help Desk personnel had to become familiar with the system. The extremely tight development timeline influenced the professional development team's ability to provide training on the technology during the spring and early summer prior to launch.
- A key challenge with support in Ohio related to a limitation of the KRA Help Desk in viewing specific student data due to state statute, thus making it difficult for the KRA Help Desk to problem-solve specific issues. This issue is being addressed differently for KRA 1.5 to allow for more direct troubleshooting.
- In Maryland, teachers' first line of support was through their district's Early Learning Supervisor, rather than directly to the KRA Help Desk, causing some miscommunication when solving complex problems. This issue is being addressed in fall 2015 by providing teachers direct access to the KRA Help Desk, in addition to support from their district's data managers and Early Learning Supervisors.

5.5 Lessons Learned Related to Technology

While project staff considered the Ready for Kindergarten Online version 1.0 technology implementation to be an overall success, the challenges that were faced by users will lead directly to a better system in version 1.5 and, therefore, should result in a more efficient and effective implementation. Key challenges that are being addressed in Ready for Kindergarten Online version 1.5 include:

- Timeline for system release: Version 1.0 of the system was completed shortly before the census administration, leading to difficulties in professional development, support, and other rollout issues for teachers, data managers, and support staff. Version 1.5 of the system will be completed in time for more in-depth user acceptance testing, technology-related professional development, training of KRA Help Desk staff, and development of improved troubleshooting and online support materials.
- Requirement of a State-Issued Student Identification Number (SSID): Rather than matching student records on the basis of first name, last name, and date of birth, version 1.5 of the Ready for Kindergarten Online system will require an SSID for each student, eliminating a large category of support issues and increasing efficiency of the bulk-load process.
- Bulk loader: A number of significant enhancements to the bulk loader were informed directly by challenges observed in version 1.0. These enhancements include support for automated file drop-off, to reduce manual data upload; improving the specificity of error messages for data managers; and additional views/reports to assist data managers.
- Expanding the Ready for Kindergarten app: To help increase the efficiency of KRA implementation, additional items are being added to the Ready for Kindergarten app in version 1.5, increasing the percentage of the assessment items that can be delivered directly to students and scored automatically. In addition, version 1.5 of the Ready for Kindergarten app will be supported on Google Android devices.
- Improving the KRA Help Desk: Based on local district feedback and an analysis of the key issues reported to the version 1.0 KRA Help Desk, significant improvements to the quality of end-user technical support are planned for future administrations.

6 Professional Development

6.1 Overview of Professional Development Approach

In the first year of implementation of the KRA, more than 14,000 educators completed the professional development led by JHU CTE. Professional development is one aspect of overall implementation that requires stakeholder buy-in, intentional design, and customized development and delivery of information around the assessment and technology systems. In addition, implementation includes careful attention to individual state needs and support for all stakeholders interacting directly with the KRA.

In order for JHU CTE to effectively implement the professional development, the professional development team employed the following strategies as part of its approach.

- Learn about each state's unique needs, policies, and processes so that the professional development is effectively implemented to scale.
- Offer professional development through a variety of formats to engage relevant audiences.
- Use online communities to support interaction among audience members and to promote resource sharing.
- Select the most appropriate modes of delivery to fit the needs of each state and the stakeholders involved.
- Be flexible for changing professional development requirements while remaining committed to meeting project timelines for design and content development.
- Participate in gathering professional development requirements from stakeholders during all phases of the project, including cognitive interviews, pilots, and field tests.
- Collaborate with the assessment and technology teams to ensure that the professional development effectively supports the system.
- Enhance professional development content after initial trainings to communicate updates to the assessment and policy information.
- Provide ongoing consultation to states, as well as support to local leaders and trainers through online FAQs, communication, and meetings to address ongoing implementation questions and challenges as they arise.
- Implement a multilevel evaluation strategy to promote training and assessment implementation fidelity that includes simulation technology, surveys, and fidelity checklists.

6.1.1 Stakeholder Needs

Implementation efforts first focused on understanding the structure of the early education systems and the needs of stakeholders in Maryland and Ohio through a series of key stakeholder meetings and presentations conducted in 2012 and early 2013. Participants in these meetings and structured discussions included state agency representatives and local agency and district or regional representatives for kindergarten, pre-kindergarten, and child care; kindergarten and pre-kindergarten teachers; and local professional development providers. The following key themes emerged from the feedback received related to the KRA:

- ***The assessment must be connected to daily instruction*.** It is evident that teachers juggle many tasks. Kindergarten teachers are tasked with implementing multiple assessments, including district assessments and individual teacher-developed academic assessments. Additionally, teachers have varying access to instructional resources, including technology, paper, books, and other classroom materials. Teachers agreed that they would value having accurate and easy-to-read data for students across multiple domains (particularly in social emotional development), and these data would be most useful if results can then be easily tied to instructional planning. Further, teachers expressed a need for related instructional resources, including suggested strategies, lesson plans, printable activity sheets, and technology-based activities or games—all aligned to their curricula.
- ***Teachers and providers administering the assessment need ongoing coaching and technical support.*** Participants identified a strong need for ongoing, frequent, and direct support resources beyond the face-to-face professional development training, particularly during test administration windows. Based on further discussion with state agency representatives and local district representatives, suggestions were gathered as to who might serve as technical assistance providers and what professional development supports they would need, such as telephone support, in-person support, etc., in a timely manner.
- ***The assessment must be easy to administer to students in the context of a typical school day.*** Stakeholders have varying levels of education experience, assessment experience, and training. Therefore, participants at all levels expressed a need for the assessment administration to be very clear and relatively easy to administer, thus reducing the number of face-to-face professional development training days and significant ongoing support needs. The assessment must be accompanied by clear directions and rubrics, limiting user error or guessing, and the professional development should allow time for hands-on practice with administering assessment items.
- ***Stakeholders emphasized the importance of clear, consistent messages.*** Stakeholders indicated that it would be helpful to have general talking points for anyone expected to communicate about the KRA and its purpose. Participants requested that messages be delivered early and throughout the project, including addressing, "What's in it for me?"
- ***Understand that the audiences are accustomed to face-to-face trainings.*** Participants requested that JHU CTE consider ways to ease teachers' transition to online trainings and find ways to build capacity for audiences to learn and access materials online, while maintaining a sustainable structure for face-to-face support.
- ***Provide high-quality hands-on training.*** Participants indicated the need for trainers who have kindergarten teaching expertise and who are very comfortable using the technology tools. Additionally, participants expressed that they desire time to learn and process any new information before full implementation of the assessment is expected.
- ***Provide information and resources for families and to support communication with families.*** Participants asked for ways to communicate with families, such as resources for teachers and administrators with talking points about the assessment (e.g., what it is, and how to communicate the results). Participants indicated the need to find ways to support better ongoing communication with families, connect assessment feedback to inform report card comments/progress comments, and identify activities that connect to the curriculum that parents work on with their children.

6.1.2 Requirements Gathering

A detailed plan for the professional development approach was developed after engaging stakeholders in Maryland and Ohio in a requirements-gathering process. This process clarified the structure of the states' educational systems, as well as the states' existing professional development initiatives and supports, and it helped to guide the rollout and full implementation of the professional development in both states for the Field Test and Census Administration.

The key stakeholders who informed the implementation of the KRA professional development include:

- representatives from MSDE and ODE and other state agencies that may be involved in the ongoing communication and planning for the KRA professional development;
- representatives who represent both early childhood general education and early childhood special education at the state level;
- representatives involved in past statewide professional development rollouts at the state level;
- individuals who coordinate or lead professional development initiatives at the local level; and
- teachers who will be administering the assessment.

Table 6.1.2 includes the key first questions as part of the requirements-gathering process.

Table 6.1.2—Initial Requirements Gathered for KRA Professional Development

Overview of State Education System
• What state agencies are involved in the project? • How do the agencies currently communicate? How often? • Has data been shared among them? Can the agencies share data? • What is the organizational structure of early learning programs in the state? • What types of early learning programs are there (half-day versus full-day kindergarten, public pre-K, public preschool, etc.)? • Who oversees the different early learning programs? • How many districts are there? • What is the distribution of districts that are rural, suburban, and urban? • What is the distribution of districts that are small and large? What is considered a small district? What is considered a large district? Examples of small and large districts.
Description of state or regional support or technical assistance providers
• Who, at the local level, is the state's point of contact for early childhood (i.e., kindergarten, pre-K, preschool, child care, special education)? When are these groups brought together (e.g., quarterly briefings)? • Who, at the local and/or regional level, provides support to early childhood teachers (i.e., kindergarten, pre-K, preschool, child care, special education)? Who provides support onsite to teachers?
Professional Development Audiences
• Who will be trained on the kindergarten assessment (e.g., trainers, kindergarten teachers, special educators, administrators, English learner educators, reading specialists, instructional assistants)? • What are the unique needs of these audiences? • What other new initiatives are occurring? • What communication channels are used to provide information to these audiences?

- How are teachers notified of trainings (state-level initiatives and/or local initiatives)?
- What is the estimated number of teachers to be trained?

Professional Development Models and Supports in Place

- How do teachers currently access professional development?
- What are the formats in which professional development is typically offered?
- Do teachers have experience participating in blended or online training?
- Who trains and supports teachers (e.g., local trainers, state-approved trainers, regional support teams, etc.)? Are trainers currently defined by district or region?
- What policies and procedures are in place for tracking and confirming that teachers have completed the appropriate trainings?
- Can you share lessons learned from providing professional development to these audiences, and what has worked?
- Are there any professional development networks/groups? If so, what are their activities?

State Assessments

- What assessments are currently being implemented and when?
- What are the state's test security policies? How are they communicated and enforced?

Technology Considerations

- What state-level technology systems exist specific to professional development?
- Are there any relevant technology initiatives taking place across the state?
- What technologies and digital resources are available to teachers?
- What concerns do you have about teachers using technology?
- What digital resources do trainers currently use during trainings?
- Are teachers currently integrating technology into daily instruction?
- Are teachers and trainers effectively utilizing technology?

As a result of ongoing collaborative efforts between JHU CTE and Maryland and Ohio, a plan for implementation was put in place for the KRA professional development, which includes how teachers will be trained and supported using JHU CTE's professional development model to administer the KRA with fidelity.

6.1.3 Field Testing the Professional Development

As a result of stakeholder input, the next phase of implementation was underway to prepare trainers and teachers to participate in a Field Test in November 2013. In Maryland, JHU CTE collaborated with State-Approved Trainers, the certified professional development consultants for the legacy Maryland Model for School Readiness (MMSR) program. Trainers participated in a two-day, face-to-face training on requirements for the Field Test. These trainers, in partnership with JHU CTE staff, conducted a two-day, face-to-face training for approximately 90 kindergarten teachers and building administrators participating in the Field Test. Early childhood supervisors from Maryland counties also attended the training. In addition, all training materials and additional resources were available in an online format in JHU CTE's Electronic Learning Community (ELC).

In Ohio, State-Approved Trainers consisted of early childhood specialists who were part of the regional State Support Teams (SSTs) and Child Care Resource and Referral Agencies, as well as other contracted trainers and ODE consultants. Approximately 50 trainers received a two-day, face-to-face training in September 2013. These trainers were drawn from a pool of State-Approved Trainers representing SSTs across Ohio and ODE personnel. The approximately 500 Ohio teachers participating in the Field Test received five hours of training, including two hours of synchronous (live) online instruction. All training

materials and resources were available online in the ELC and offered the flexibility for face-to-face, online, or blended delivery of content.

While the focus of implementation was teacher preparation for the Field Test, similar models and formats were planned for delivery of professional development during full Census Administration in 2014. Feedback on the design and delivery of professional development during the Field Test was gathered, analyzed, and used to inform the professional development and implementation efforts that followed.

6.1.4 Ongoing Collaboration and Planning

In preparation for the Census Administration and throughout implementation of the professional development, JHU CTE engaged in ongoing and frequent communication efforts with Maryland and Ohio. Throughout ongoing planning meetings, JHU CTE worked with the two states to plan the rollout of the training model, as well as managing the ongoing support needs during implementation of training and throughout the assessment window.

6.2 Professional Development Model

6.2.1 Trainer-of-Trainer Model

JHU CTE used a Trainer-of-Trainers (ToT) professional development model, delivered statewide in Maryland and regionally in Ohio. The ToT training session involved a blended approach of three face-to-face meeting days with a set of online activities between meetings.

The ToT model was designed to:

- build capacity for trainers to deliver training in online, blended, and face-to-face formats;
- engage trainers in an online community for ongoing support from JHU CTE and fellow trainers;
- model facilitation of online learning experiences;
- model research-based coaching techniques;
- incorporate time for reflection, planning, and practice;
- provide customizable training materials to meet local needs; and
- provide clear expectations and accountability measures.

More than 400 trainers were provided with customizable training materials for online, blended, and face-to-face full-day and half-day teacher trainings. They received training agendas, PowerPoint files with detailed notes, optional scripts, activity handouts, video clips, practice assessment items with scenarios, and additional resources. During the ToT session, trainers became part of an online community where they accessed and shared resources, communicated with other trainers and JHU CTE professional development team members, and received guidance and coaching from JHU CTE as they implemented teacher training and supported teachers through KRA administration.

6.2.2 Technology-Supported Teacher Training

The two-day teacher training was built in face-to-face, fully online, and blended formats. Regardless of the training format used, all teachers were given access to the fully online content to use as a resource throughout the KRA administration window. Each training group had a Community Exchange site designated to be used by the trainer to engage in ongoing dialogue with the group. Additionally, a one-hour technology update training was scheduled in August 2014, at the launch of the Ready for

Kindergarten Online system, in order to prepare and support teachers to navigate the KRA online and use the Ready for Kindergarten app with students.

The teacher training is designed to:

- provide flexible training formats to meet the varied needs of districts, schools, and teachers;
- give teachers access to all of the training content all of the time;
- provide ongoing coaching and support with just-in-time resources;
- fully integrate professional development content and professional communities within the assessment system;
- engage teachers in core training components with some customization by KRA trainers;
- establish online Community Exchange sites for knowledge creation, knowledge sharing, and collaboration among teachers at the local level; and
- provide just-in-time technology training resources to help teachers to use the new Ready for Kindergarten Online system.

6.2.3 Online Learning Communities

As part of the Ready for Kindergarten Online system, Community Exchange sites provide a password-protected, user-friendly online environment that encourages community members' collaboration, enhances content delivery, and allows for file sharing by trainers and teachers through the assessment process.

The trainer community includes a repository of training resources and a forum for sharing knowledge, insights, observations, and questions. JHU CTE staff supported facilitation and dissemination of content, and ongoing coaching for trainers through this site. Likewise, the trainers then trained and supported teachers following the same model in which JHU CTE supported the trainers. The Community Exchange sites in Maryland (98 sites) and Ohio (585 sites) served teachers as they completed their training. Teachers participating in online and blended trainings used the community space to engage in ongoing discussion based on specific prompts presented in the training modules. Trainers used the space to post assessment-related tips and local updates, and to respond to teachers' questions or needs.

6.2.4 Validation by Simulation and Content Assessment

Upon completion of the assessment administration training, all teachers conducting the assessment were required to fulfill reliability qualifications through the successful completion of a simulation and a content assessment. The multimedia-rich simulation, accessed through the Ready for Kindergarten Online website, provided hands-on experience and practice for administering assessment items. Participants navigated through a simulated kindergarten classroom and observed students engaging in classroom and outdoor activities, as well as completing performance tasks. Participants then provided scores for the students on these items. The content assessment contained 20 multiple-choice questions that addressed key concepts from the training.

Total scores were calculated for both the simulation (participant-provided scores based on student performance/behavior within the simulator) and the content assessment. A minimum satisfactory score was required for successful completion. Follow-up coaching and the ability to retake the assessment(s) were provided to teachers as needed. A total of 3,884 educators in Maryland and 10,263 educators in Ohio successfully completed both the simulation and the content assessment.

6.2.5 Evaluation Strategy

JHU CTE periodically reviewed the simulation and content assessment results to determine the distribution of scores across each state. This process allowed the JHU CTE professional development team to provide direct follow-up and coaching to trainers in order to ensure that teachers had the knowledge and skills to administer the KRA. Trainers received coaching tips and resources to coach teachers on the simulation items and the content assessment as needed. Trainers received fidelity checklists that contained the core training components for the various training formats. The checklists assisted trainers in determining where their training could be customized and what essential elements need to be addressed. JHU CTE administered the following surveys to evaluate the training in each state and to ensure training fidelity.

- **ToT Training Survey**—This survey was administered to trainers upon completion of the ToT. The results provided outstanding questions, as well as informed enhancements to the subsequent ToT sessions and development of additional training resources.
- **Teacher Training Survey**—This survey was administered to Maryland and Ohio teachers at the end of their KRA training. The completion rate was 57.74%, with 8,168 respondents. Among other items included in the survey were the core training components from the fidelity checklists. Teachers were asked to indicate that these components were a part of their training and rate their understanding of the components.
- **Trainer Survey**—Trainers were asked to complete this survey after delivering each training. Like the teacher survey, this survey included the core training components from the fidelity checklists. Responses to the teacher and trainer surveys were compared to ensure that the components were indeed present in the training.

6.3 Training Content

Professional development activities were organized around the following three stages of assessment.

- **Pre-administration**—Professional development related to pre-administration focused on ensuring that users understood the purpose of the Ready for Kindergarten initiative, including the KRA, and were thoroughly knowledgeable about issues related to data security and integrity.
- **Administration of assessments**—Professional development related to the administration of the assessment developed understanding of the processes and procedures for KRA selected-response items, performance tasks, and observational items; afforded multiple and varied opportunities for hands-on practice with assessment items, including opportunities to learn about and practice observational items to enhance teachers' observational skills and to ensure inter-rater reliability; promoted understanding of universally designed allowances for all students, as well as allowable supports (Level the Field supports) for high-need populations, including English learners and students with disabilities; developed the skills needed to reliably interpret and score students' responses to multiple item types; introduced participants to the data collection and reporting system; and offered opportunities for hands-on use of the system and online supports.
- **Post-assessment**—A post-assessment component of the professional development focused on the analysis and use of the KRA data and provided in-depth resources and materials to support the KRA domains, as well as each of the essential skills and knowledge included in the Common Language Standards.

The KRA professional development included the following two modules:

- **Module 1**
  - General Overview
  - Session 1: Introducing the KRA
  - Session 2: Preparing for the KRA
  - Session 3: Universally Designed Allowances
  - Session 4: Supporting Individual Children
  - Session 5: Practicing the KRA
- **Module 2**
  - Session 1: Exploring the KRA Domains
  - Session 2: Supporting the KRA Domains in Kindergarten Classrooms

When the technology system became available at the start of the assessment administration window, JHU CTE provided additional training content around assessment update presentations and technology how-to videos. Because some participants were trained as early as spring 2014, this content served as a just-in-time refresher and technology training resource.

Data showed that modules were accessed throughout the training period and assessment window. The modules had more than 88,000 visits in Maryland and Ohio.

In Maryland, JHU CTE created an online site designed for the general public to learn about the comprehensive assessment system, including the KRA. It included information about the Common Language Standards, assessment domains, KRA assessment items, the *Guidelines on Allowable Supports for Administration of the Kindergarten Readiness Assessment*, KRA professional development, and KRA technology. This site also included a list of contacts at MSDE and JHU CTE to receive additional information and to provide feedback. In Ohio, information about the KRA was disseminated to the public by ODE through various channels, including the ODE website.

6.4 Coaching and Technical Support

Key stakeholder focus groups conducted in 2012 and 2013 revealed a significant need for ongoing support beyond formal training experiences. JHU CTE worked within each state structure to identify potential local resources to provide timely, direct, and ongoing coaching and assistance to practitioners. JHU CTE thus served as a point of contact for questions related to assessment implementation, data analysis, and instructional planning.

The JHU CTE professional development team provided technical support to trainers throughout the training period by email and telephone, and through the online trainer communities in both states. In addition, each state identified its help-desk solution, and the JHU CTE professional development team supported training the state technical-support providers, in collaboration with the JHU CTE technology team.

The JHU CTE professional development team created and maintained extensive web-based FAQs for state help-desk staff and teachers, and developed materials to assist those providing support for the technology and professional development tools, including the electronic learning community, Community Exchange sites, the simulation tool, and interactive media pieces.

The trainers and teachers actively engaged with the Ready for Kindergarten Online website resources to support administration and scoring, as evidenced by the number of times the site was accessed. In Maryland, there was a total of 3,884 teachers and trainers, resulting in 30,531 visits and 772 posts. In Ohio, there was a total of 10,263 teachers and trainers, with a total of 78,384 visits and 1,558 posts.

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Appendices

Appendix A: Project Members by Organization

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Appendix B: Common Language Standards

Domain	Strand	Code	**Standard** (yellow) **Essential Skill and Knowledge**	Learning Progression
Social Foundations (SF)	Social Emotional (1)	**SF.1.1**	**Recognize and identify emotions of self and others.**	Awareness and Expression of Emotion
		SF.1.1.A	Recognize and identify own emotions and the emotions of others.	
		SF.1.1.B	Express, understand, and respond to feelings (emotions) of self and others.	
		SF.1.1.C	Express concern for the needs of others and people in distress.	
		SF.1.2	**Look to adults for emotional support and guidance.**	Relationships with Adults
		SF.1.2.A	Separate from familiar adults in a familiar setting with minimal distress.	
		SF.1.2.B	Seek security and support from familiar adults in anticipation of challenging situations.	
		SF.1.2.C	Request and accept guidance from familiar adults.	
		SF.1.3	**Demonstrate ability to resolve conflicts with others.**	Conflict Resolution
		SF.1.3.A	Seek adult help when solving interpersonal conflicts.	
		SF.1.3.B	With modeling and support, negotiate to resolve social conflicts with peers.	
	Approaches to Learning/ Executive Functioning (2)	**SF.2.1**	**Manage the expression of feelings, thoughts, impulses, and behaviors.**	Self Control
		SF.2.1.A	Refrain from demonstrating disruptive or defiant behaviors.	
		SF.2.1.B	Demonstrate appropriate use of own materials or belongings and those of others.	
		SF.2.1.C	Demonstrate the ability to delay gratification for short periods of time.	
		SF.2.2	**Demonstrate the ability to persist with a task.**	Persistence
		SF.2.2.A	Carry out tasks, activities, projects, or transitions, even when frustrated or challenged, with minimal distress.	
		SF.2.2.B	Focus on an activity with deliberate concentration despite distractions and/or temptations.	
		SF.2.3	**Demonstrate the ability to retain and apply information.**	Working Memory
		SF.2.3.A	Follow routines and multi-step directions.	
		SF.2.3.B	Remember and use information for a variety of purposes, with modeling and support.	
		SF.2.3.C	Use prior knowledge and information to assess, inform, and plan for future actions and learning.	
		SF.2.4	**Demonstrate the ability to solve problems.**	Problem Solving
		SF.2.4.A	Solve everyday problems based upon past experience.	
		SF.2.4.B	Solve problems by planning and carrying out a sequence of actions.	
		SF.2.4.C	Seek more than one solution to a question, problem, or task.	
		SF.2.4.D	Explain reasoning for the solution selected.	
		SF.2.5	**Seek and gather new information to plan for projects and activities.**	Initiative
		SF.2.5.A	Express a desire to learn by asking questions and seeking new information.	
		SF.2.5.B	Demonstrate independence in learning by planning and initiating projects.	
		SF.2.5.C	Seek new and varied experiences and challenges (take risks).	
		SF.2.5.D	Demonstrate self-direction while participating in a range of activities and routines.	
		SF.2.6	**Demonstrate cooperative behavior in interactions with others.**	Cooperation with Peers
		SF.2.6.A	Play or work with others cooperatively.	
		SF.2.6.B	Interact with peers in complex pretend play, including planning, coordination of roles, and cooperation.	
		SF.2.6.C	Demonstrate socially competent behavior with peers.	
		SF.2.6.D	Share materials and equipment with other children, with adult modeling and support.	

Domain	Strand	Code	**Standard** (yellow) **Essential Skill and Knowledge**	Learning Progression
Language and Literacy (LL)	Reading (1)	**LL.1.1**	**Comprehend and respond to interactive read-alouds of literary and informational text.**	Story/Text Comprehension
		LL.1.1.A	Before interactive read-alouds, make predictions and/or ask questions about the text by examining the title, cover, illustrations/photographs, graphic aids, and/or text.	
		LL.1.1.B	During interactive read-alouds, listen and ask and answer questions as appropriate.	
		LL.1.1.C	After interactive read-alouds, respond by retelling the text or part of the text in an appropriate sequence, using discussions, re-enactment, drawing, and/or writing as appropriate.	
		LL.1.1.D	Identify the beginning, middle, and end of literary text.	
		LL.1.1.E	Identify the main topic of informational text.	
		LL.1.2	**Demonstrate understanding of spoken words and sounds (phonemes).**	Phonological Awareness
		LL.1.2.A	Identify initial and final sounds in spoken words.	
		LL.1.2.B	Identify, blend, and segment syllables in spoken words.	
		LL.1.2.C	Blend and segment onsets and rimes of single-syllable spoken words.	
		LL.1.2.D	Recognize rhyming words in spoken language.	
		LL.1.3	**Know and apply letter-sound correspondence and letter recognition skills.**	Phonics and Letter Recognition
		LL.1.3.A	Recognize that words are made up of letters and their sounds.	
		LL.1.3.B	Demonstrate basic knowledge of one-to-one letter-sound correspondences by producing the most frequent sound for some consonants.	
		LL.1.3.C	Recognize and name some upper- and lowercase letters.	
	Speaking and Listening (2)	**LL.2.1**	**Communicate effectively in a variety of situations with different audiences, purposes, and formats.**	Communication
		LL.2.1.A	Speak or express thoughts, feelings, and ideas clearly enough to be understood in a variety of settings.	
		LL.2.1.B	Participate in conversations with adults and peers, staying on topic through multiple exchanges and adding appropriate ideas to support or extend the conversation.	
	Writing (3)	**LL.3.1**	**Produce letter-like shapes, symbols, letters, and words to convey meaning.**	Emergent Writing
		LL.3.1.A	With modeling and support, print letters of own name.	
		LL.3.1.B	With modeling and support, print meaningful words with letters and letter approximations.	
		LL.3.1.C	Use a combination of drawing, dictating and developmentally appropriate writing for a variety of purposes (e.g., tell a story, give an opinion, express ideas).	
	Language (4)	**LL.4.1**	**Demonstrate beginning understanding of the conventions of standard English grammar and usage when engaged in literacy activities.**	Grammar
		LL.4.1.A	Use familiar nouns and verbs to describe persons, animals, places, events, actions, etc.	
		LL.4.1.B	Develop understanding of singular and plural nouns (e.g. "dog" means one dog, "dogs" means more than one dog); form regular plural nouns orally by adding /s/ or /es/.	
		LL.4.1.C	Understand and begin to use question words.	
		LL.4.1.D	Use frequently occurring prepositions (e.g., "to," "from," "in," "out," "on," "off," "for," "of," "by," "with").	
		LL.4.1.E	Produce complete sentences in shared language activities.	
		LL.4.2	**Use words acquired through conversations and shared reading experiences.**	Vocabulary
		LL.4.2.A	Identify real-life connections between words and their uses (e.g., relate the word "helpful," used in a story, to own life by telling ways to be helpful).	
		LL.4.2.B	Determine the meanings of unknown words/concepts using the context of conversations, pictures that accompany text, or concrete objects.	

Domain	Strand	Code	**Standard** (yellow) **Essential Skill and Knowledge**	Learning Progression
Mathematics (MA)	Counting and Cardinality (1)	**MA.1.1**	**Know number name, count sequence, and relationships among number, numeral, and quantity.**	Number Sense
		MA.1.1.A	Count the number sequence to 20.	
		MA.1.1.B	Touch each concrete object as it is counted, pairing one number word with each object and saying each number word only once in consistent order.	
		MA.1.1.C	Use number cards arranged in a line to count and then determine what number comes before or after a specific number.	
		MA.1.1.D	Identify, without counting, small quantities of items (1–3) presented in an irregular or unfamiliar pattern (subitize).	
		MA.1.1.E	Recognize that the count remains the same regardless of the order or arrangement of the objects.	
		MA.1.1.F	Demonstrate understanding that the last number spoken tells the number of objects counted; respond correctly when asked “how many” after counting concrete objects.	
		MA.1.1.G	Name written numerals and pair them with concrete objects.	
	Operations and Algebraic Thinking (2)	**MA.2.1**	**Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.**	Number Operations
		MA.2.1.A	Solve simple addition and subtraction problems with totals less than 5, using concrete objects.	
		MA.2.1.B	Use manipulatives to find the amount needed to complete the set.	
		MA.2.1.C	Manipulate sets to decompose numbers (e.g., 1 and 4 objects equal 5 objects; 2 and 3 objects equal 5 objects).	
	Measurement and Data (3)	**MA.3.1**	**Sort, classify, and compare objects.**	Classification
		MA.3.1.A	Using prior knowledge of grouping, sort objects by one attribute (e.g., “red or not red,” “round or not round,” or creating a set of “all red” or “all round” objects).	
		MA.3.1.B	Sort multiple groups by one attribute (e.g., “all blue, all red, all yellow” or “all bears, all cats, all dogs”).	
		MA.3.1.C	Identify the attribute by which objects are sorted.	
		MA.3.1.D	Count to identify the number of objects in each set, and compare categories using comparison vocabulary (e.g., "greater"/"more than," "less than," "same"/"equal to").	
		MA.3.2	**Describe and compare measurable attributes.**	Measurement
		MA.3.2.A	Directly compare and describe two objects with a measurable attribute (e.g., length, size, capacity and weight) in common, using words such as "longer"/"shorter," "heavier"/"lighter," or "taller"/"shorter."	
		MA.3.2.B	Order objects by measurable attribute (e.g., biggest to smallest).	
		MA.3.2.C	Measure length and volume (capacity) using non-standard measurement tools.	
	Geometry (4)	**MA.4.1**	**Describe two- and three-dimensional shapes.**	Shapes
		MA.4.1.A	Match similar shapes when given a variety of two- and three-dimensional shapes.	
		MA.4.1.B	Use names of two-dimensional shapes (e.g., square; triangle; circle) when identifying objects.	
		MA.4.1.C	Distinguish examples and non-examples of various two- and three-dimensional shapes.	
		MA.4.1.D	Use informal language to describe three-dimensional shapes (e.g., "box" for cube; "ball" for sphere; "can" for cylinder).	

Domain	Strand	Code	**Standard** (yellow) **Essential Skill and Knowledge**	Learning Progression
Science (SC)	**Skills and Processes/ Life Science (1)**	**SC.1.1**	**Construct knowledge of life science through questioning and observation.**	**Inquiry and Observation**
		SC.1.1.A	Raise questions about the world around them and be willing to seek answers to some of them by making careful observations and trying things out.	
		SC.1.1.B	Use evidence from investigations to describe observable properties of a variety of objects.	
Social Studies (SS)	**Government (1)**	**SS.1.1**	**Demonstrate understanding of rules and responsible behavior.**	**Responsible Behavior**
		SS.1.1.A	Identify rules used at home and at school.	
		SS.1.1.B	Explain how rules promote order, safety, and fairness.	
	History (2)	**SS.2.1**	**Demonstrate an understanding of past, present, and future in the context of daily experiences.**	**Events in the Context of Time**
		SS.2.1.A	Describe the events of the day (things that have happened in the immediate past, that happen in the present, and that might happen in the future) using terms such as "morning"/"afternoon" and "night"/"day."	
		SS.2.1.B	Communicate about past events and anticipate what comes next during familiar routines and experiences.	
Physical Well-Being and Motor Development (PD)	**Physical Education (1)**	**PD.1.1**	**Demonstrate the ability to use large muscles to perform a variety of physical skills.**	**Coordination–Large Motor**
		PD.1.1.A	Show fundamental movement by demonstrating spatial concepts in movement patterns.	
		PD.1.1.B	Demonstrate locomotor skills with control, coordination, and balance during active play (e.g., running, hopping, jumping).	
		PD.1.1.C	Demonstrate coordination in using objects during active play (e.g., throwing, catching, kicking balls, riding tricycle).	
		PD.1.1.D	Use non-locomotor skills with control, balance, and coordination during active play (e.g., bending, stretching, and twisting).	
		PD.1.2	**Demonstrate the ability to use small muscles to perform fine motor skills in play and learning situations.**	**Coordination–Small Motor**
		PD.1.2.A	Coordinate the use of hands, fingers, and wrists to manipulate objects and perform tasks requiring precise movements.	
		PD.1.2.B	Use classroom and household tools independently with eye-hand coordination to carry out activities.	
		PD.1.2.C	Use a three-finger grasp of dominant hand to hold a writing tool.	
	Health (2)	**PD.2.1**	**Demonstrate the ability to apply prevention and intervention knowledge, skills, and processes to promote safe living, in the home, school, and community.**	**Safety and Injury Prevention**
		PD.2.1.A	With modeling and support, identify and follow basic safety rules.	
		PD.2.1.B	Identify ways adults help to keep us safe.	
		PD.2.1.C	With modeling and support, identify the consequences of unsafe behavior.	
		PD.2.1.D	With modeling and support, demonstrate ability to follow transportation and pedestrian safety rules.	
		PD.2.2	**Demonstrate personal health and hygiene practices.**	**Personal Care Tasks**
		PD.2.2.A	Independently complete personal care tasks (e.g., washing hands before eating and after toileting).	
		PD.2.2.B	Follow basic health practices (e.g., covering mouth/nose when coughing/sneezing).	

Domain	Strand	Code	**Standard** (yellow) **Essential Skill and Knowledge**	Learning Progression
Fine Arts (FA)	Music (1)	**FA.1.1**	**Demonstrate awareness of and respond to the characteristics of musical sounds through voice, body movements, and classroom instruments.**	Music
		FA.1.1.A	Listen and respond to repeated rhythmic patterns.	
		FA.1.1.B	Respond to changes heard in music: fast/slow, loud/soft, long/short, high /low.	
		FA.1.1.C	Sing songs that use the voice in a variety of ways.	
		FA.1.1.D	Demonstrate steady beat through singing, moving the body, or playing classroom instruments.	
		FA.1.1.E	Listen and respond to simple directions or verbal cues in singing games.	
	Visual Arts (2)	**FA.2.1**	**Identify, describe, experiment with, and create images and forms from observation, memory, imagination, and feelings.**	Visual Arts
		FA.2.1.A	Identify colors, lines, and shapes found in the environment and in works of art.	
		FA.2.1.B	Use colors, lines, and shapes to communicate ideas about the observed world.	
		FA.2.1.C	Explore and discuss how colors, lines, and shapes are used in artworks.	
		FA.2.1.D	Use colors, lines, and shapes to make artworks that express ideas and feelings.	
	Theater (3)	**FA.3.1**	**Use a variety of theatrical elements and conventions to demonstrate themes about life experiences, ideas, and feelings.**	Theater
		FA.3.1.A	Listen to and retell or perform nursery rhymes, finger plays, popular children's books/stories, and other media.	
		FA.3.1.B	Demonstrate themes and ideas about people and events through play.	
		FA.3.1.C	Create accompaniment to stories using natural and human-made sounds.	
	Dance (4)	**FA.4.1**	**Demonstrate knowledge of how elements of dance are used to communicate meaning.**	Dance
		FA.4.1.A	Demonstrate selected locomotor and non-locomotor movements that communicate ideas, thoughts, and feelings.	
		FA.4.1.B	Combine selected characteristics of the elements of dance, such as body parts and positions, shapes, levels, energy, fast and slow, and use of sensory stimuli to create movement.	
		FA.4.1.C	Reproduce movement demonstrated by the teacher.	

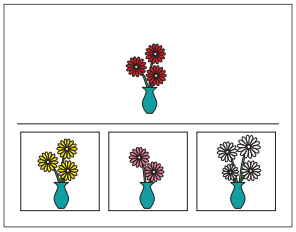
Appendix C: Examples of KRA Item Types

ITEM: 1

Identify set that is "less than"

MA.3.1.D_A122

[Sample Item Images Page 1. Point to the group of flowers above the line.]



SAY **Look at this group of flowers.**

Manipulatives:

None needed for this item

[Point to three groups of flowers below the line.]

SAY **Now look at these groups of flowers.**

SAY **Touch the group of flowers that is MORE THAN the group of flowers at the top.**

[Allow sufficient time for the student to indicate a group of flowers. Do not provide any cues or other interactions while the student is completing the task.]

SCORING INFORMATION:

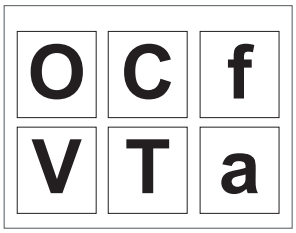
Score	Description
1	The student correctly touches the group of four white flowers (MORE THAN three).
0	The student does not touch the correct picture, or responds incorrectly in some other way.

ITEM: 2

Name letters

LL.1.3.C_A197

[Sample Item Images Page 2.]



SAY **Now let's do an activity with letters. I will point to a letter, and you will tell me what the letter is. Let's do one together.**

Manipulatives:

None needed for this item

[Point to the letter O.]

SAY **What letter is this?**

[Allow sufficient time for the student to respond.]

[Point to the letter O again.]

SAY **This is the letter O.**

[Check to be sure the student was able to follow along. If not, remind the student to say what the letter is and do the practice activity again.]

SAY **You will do the rest by yourself.**

[Point to the letter C.]

SAY **What letter is this?**

[Allow sufficient time for the student to respond.]

[Point to the letter f.]

SAY **What letter is this?**

[Allow sufficient time for the student to respond.]

Item continues on the next page ⇨

ITEM: 2 (continued)
Name letters LL.1.3.C_A197

[Point to the letter V.]

SAY What letter is this?

[Allow sufficient time for the student to respond.]

[Point to the letter T.]

SAY What letter is this?

[Allow sufficient time for the student to respond.]

[Point to the letter a.]

SAY What letter is this?

[Allow sufficient time for the student to respond. Do not provide any cues or other interactions while the student is completing the task.]

SCORING INFORMATION:

Score	Description
3	The student correctly names all five letters (C, f, V, T, a).
2	The student correctly names at least three letters.
1	The student correctly names at least one letter.
0	The student does not name any letter correctly.

ITEM: 3

Solve problems SF.2.4.B_OR_99

Score	Description
P	Solves problems by identifying the problem, discussing ideas for resolution, selecting the best idea, and putting it into action
I	Attempts to solve problems by identifying the problem and discussing ideas for resolution, but requires adult guidance to select the best idea and then put it into action
N	May identify the problem but is unwilling to discuss ideas for resolution, even with adult support and guidance

Appendix D: Cognitive Interviews—Student and Teacher Responses

Table D.1 – Frequency of Student Responses to KRA Prototype Items (Set 1)

Prototype	Task	Responses	Correct	Error
1N	touch car	16	16	0
1N	touch flower	16	16	0
1N	touch chair	16	16	0
1N	find rabbits	16	16	0
4N	touch house	16	16	0
4N	touch moon	16	16	0
4N	touch mouse	16	16	0
4N	touch frog	16	16	0
4N	rhyme	16	15	1
7N	move forward	16	13	3
7N	move backward	16	15	1
7N	move sideways	16	14	2
8N	sequence: human	16	5	11
8N	sequence: bird	16	4	12
10N	slow 1	16	13	3
10N	fast 1	16	14	2
10N	slow 2	16	10	6
10N	fast 2	16	10	6
10N	loud 1	16	16	0
10N	soft 1	16	16	0
10N	loud 2	16	9	7
10N	soft 2	16	9	7
12N	rule: line up	16	14	2
12N	rule: walk inside	16	15	1
14N	quantity = numeral	16	14	2
14N	numeral = quantity	16	15	1

Table D.2 – Frequency of Student Responses to KRA Prototype Items (Set 2)

Prototype	Task	Responses	Correct	Error
2N	touch circle	14	13	1
2N	touch triangle	14	12	2
2N	touch square	14	13	1
2N	sort circles	14	12	2
2N	sort triangle	14	8	6
2N	sort square	14	10	4
3N	who put books away	14	10	4
3N	place chair	14	6	8
3N	sort 1	14	12	2
3N	sort 2	14	9	5
3N	sort 3	14	9	5
3N	same groups 1	14	11	3
5N	touch American flag	14	12	2
6N	emotion 1 sad	14	13	1
6N	emotion 2 happy	14	8	6
9N	who to tell	14	13	1
9N	dial 911	14	3	11
11N	touch triangle	14	12	2
11N	touch wavy	14	11	3
11N	touch orange	14	11	3
13N	movement: horse	14	7	7
13N	movement: bird	14	9	5
13N	movement: fish	14	9	5

Table D.3 – Summary of Teacher Responses to KRA Prototype Items

Question	Responses
Do you think that an entering kindergartner should be able to answer this question?	
1N	6 Yes; 1 No
2N	5 Yes
3N	1 Yes; 2 No; 1 Maybe
4N	3 Yes; 1 No; 3 Maybe
5N	2 Yes; 1 No
6N	4 Yes
7N	5 Yes; 2 Maybe
8N	3 Yes; 1 No; 1 Maybe
9N	3 Yes; 1 No
10N	6 Yes
11N	3 Yes; 1 No; 1 Maybe
12N	6 Yes
13N	3 Yes; 1 Maybe
14N	5 Yes
Do you think the average kindergartener would be able to respond to these questions?	23 Yes; 1 No
Do you think a kindergartner who is an English language learner would be able to respond to these questions?	5 Yes; 8 It depends on language level; 8 No; 3 No experience
Do you think a kindergartner with a disability would be able to respond to these questions?	2 Yes; 20 It depends on the disability; 1 No
Do you think the scripts that go along with these questions are appropriate for the average kindergartener?	25 Yes
How about for an English language learner?	17 Yes; 3 It depends on language level; 3 No
How about for a student with a disability?	14 Yes; 7 It depends on disability; 2 No
Do you think the pictures that go along with these questions are appropriate for the average kindergartener?	24 Yes
How about for an English language learner?	19 Yes; 5 No
How about for a student with a disability?	21 Yes; 3 No

Appendix E: Pilot Test—Item Frequency Distributions

Item ID	Item Type	Domain	Cluster	Form	Max. Points	N	Percentage of Students at Score Point			
							0	1	2	3
K105	PT	MA	No	A	3	54	5.6	1.9	1.9	90.7
K121	SR	LL	Yes	A&D	1	105	9.5	90.5		
K122	SR	LL	Yes	A&D	1	105	7.6	92.4		
K123	SR	LL	Yes	A&D	1	105	19.0	81.0		
K124	SR	SF	Yes	A&D	1	105	5.7	94.3		
K125	SR	MA	Yes	A	1	54	7.4	92.6		
K141	SR	LL	Yes	B	1	54	0.0	100.0		
K142	SR	LL	Yes	B	1	54	7.4	92.6		
K143	SR	LL	Yes	B	1	54	22.2	77.8		
K144	PT	LL	Yes	B	2	54	14.8	48.1	37.0	
K151	SR	LL	Yes	B&D	1	105	1.9	98.1		
K152	SR	LL	Yes	B&D	1	105	1.9	98.1		
K153	SR	LL	Yes	B&D	1	105	3.8	96.2		
K154	PT	LL	Yes	B&D	2	105	20.0	26.7	53.3	
K171	PT	MA	No	B	2	54	9.3	7.4	83.3	
K182	PT	MA	No	B	2	54	0.0	1.9	98.1	
K183	PT	MA	No	D	2	51	0.0	3.9	96.1	
K191	PT	MA	No	D	1	50	6.0	94.0		
K201	PT	MA	No	C	3	53	1.9	0.0	24.5	73.6
K211	PT	MA	No	D	3	51	0.0	2.0	2.0	96.1
K221	SR	MA	No	C	1	53	43.4	56.6		
K231	SR	MA	No	B	1	54	57.4	42.6		
K241	SR	MA	No	D	1	51	41.2	58.8		
K251	SR	MA	No	A	1	54	1.9	98.1		
K261	SR	MA	No	C	1	53	18.9	81.1		
K271	SR	MA	No	D	1	51	17.6	82.4		
K281	PT	MA	No	C	3	53	0.0	1.9	13.2	84.9
K291	PT	LL	Yes	A&C	1	107	35.5	64.5		
K292	SR	LL	Yes	A&C	1	107	0.9	99.1		
K293	SR	LL	Yes	A&C	1	107	12.1	87.9		
K294	SR	MA	Yes	A	1	53	15.1	84.9		
K301	PT	PD	No	B	3	54	0.0	1.9	40.7	57.4
K311	PT	SF	No	A	2	54	0.0	1.9	98.1	
K321	PT	MA	No	D	2	51	0.0	0.0	100.0	
K331	SR	LL	Yes	C	1	53	34.0	66.0		
K332	PT	LL	Yes	C	1	53	41.5	58.5		
K333	PT	MA	Yes	C	2	53	18.9	7.5	73.6	
K334	PT	MA	Yes	C	1	53	17.0	83.0		
K341	SR	SF	No	C	1	53	3.8	96.2		
K351	PT	PD	No	A	2	53	15.1	5.7	79.2	
K361	SR	MA	No	A	2	54	1.9	1.9	96.3	
K362	PT	MA	No	C	2	53	1.9	7.5	90.6	
K371	SR	MA	No	B	1	54	13.0	87.0		
CL 1A	CL	PD	No	A&B	2	107	11.2	9.3	79.4	
CL 1B	CL	PD	No	C&D	2	103	1.0	13.6	85.4	
CL 2A	CL	PD	No	A&B	2	107	1.9	10.3	87.9	
CL 2B	CL	PD	No	C&D	2	103	1.0	6.8	92.2	
CL 3A	CL	PD	No	A&B	2	107	1.9	9.3	88.8	

Item ID	Item Type	Domain	Cluster	Form	Max. Points	N	Percentage of Students at Score Point			
							0	1	2	3
CL 3B	CL	PD	No	C&D	2	103	1.9	6.8	91.3	
CL 4A	CL	PD	No	A&B	2	107	0.0	19.6	80.4	
CL 4B	CL	PD	No	C&D	2	103	1.0	13.6	85.4	
CL 5A	CL	LL	No	A&B	2	107	2.8	35.5	61.7	
CL 5B	CL	LL	No	C&D	2	103	1.9	27.2	70.9	
CL 6A	CL	LL	No	A&B	2	106	4.7	23.6	71.7	
CL 6B	CL	LL	No	C&D	2	103	1.9	27.2	70.9	
CL 7A	CL	SF	No	A&B	2	107	3.7	22.4	73.8	
CL 7B	CL	SF	No	C&D	2	103	4.9	22.3	72.8	
CL 8A	CL	SF	No	A&B	2	107	0.0	19.6	80.4	
CL 8B	CL	SF	No	C&D	2	103	3.9	19.4	76.7	
CL 9A	CL	SF	No	A&B	2	107	2.8	20.6	76.6	
CL 9B	CL	SF	No	C&D	2	103	3.9	18.4	77.7	
CL 10A	CL	SF	No	A&B	2	107	5.6	16.8	77.6	
CL 10B	CL	SF	No	C&D	2	103	3.9	14.6	81.6	
CL 11A	CL	SF	No	A&B	2	107	1.9	16.8	81.3	
CL 11B	CL	SF	No	C&D	2	103	5.8	28.2	66.0	
CL 12A	CL	SF	No	A&B	2	107	7.5	31.8	60.7	
CL 12B	CL	SF	No	C&D	2	103	8.7	29.1	62.1	
OR 1A	OR	PD	No	A&B	3	107	11.2	0.9	8.4	79.4
OR 1B	OR	PD	No	C&D	3	98	1.0	5.1	13.3	80.6
OR 2A	OR	PD	No	A&B	3	107	1.9	0.9	16.8	80.4
OR 2B	OR	PD	No	C&D	3	98	1.0	0.0	15.3	83.7
OR 3A	OR	PD	No	A&B	3	107	1.9	1.9	7.5	88.8
OR 3B	OR	PD	No	C&D	3	98	0.0	3.1	11.2	85.7
OR 4A	OR	PD	No	A&B	3	107	0.0	0.9	19.6	79.4
OR 4B	OR	PD	No	C&D	3	98	0.0	3.1	14.3	82.7
OR 5A	OR	LL	No	A&B	3	107	2.8	10.3	27.1	59.8
OR 5B	OR	LL	No	C&D	3	98	1.0	10.2	32.7	56.1
OR 6A	OR	LL	No	A&B	3	106	2.8	11.3	23.6	62.3
OR 6B	OR	LL	No	C&D	3	98	2.0	17.3	24.5	56.1
OR 7A	OR	SF	No	A&B	3	107	3.7	9.3	17.8	69.2
OR 7B	OR	SF	No	C&D	3	98	5.1	9.2	25.5	60.2
OR 8A	OR	SF	No	A&B	3	107	0.0	2.8	24.3	72.9
OR 8B	OR	SF	No	C&D	3	98	5.1	8.2	27.6	59.2
OR 9A	OR	SF	No	A&B	3	107	1.9	3.7	22.4	72.0
OR 9B	OR	SF	No	C&D	3	98	3.1	4.1	29.6	63.3
OR 10A	OR	SF	No	A&B	3	107	4.7	4.7	14.0	76.6
OR 10B	OR	SF	No	C&D	3	98	4.1	7.1	20.4	68.4
OR 11A	OR	SF	No	A&B	3	107	0.0	10.3	14.0	75.7
OR 11B	OR	SF	No	C&D	3	95	5.3	9.5	33.7	51.6
OR 12A	OR	SF	No	A&B	3	107	4.7	10.3	31.8	53.3
OR 12B	OR	SF	No	C&D	3	95	8.4	18.9	33.7	38.9

Appendix F: Pilot Test—
Observational Item Contingency Tables

Forms A & B

Observational Rubric

Checklist	#1	3	2	1	0	Total
	2	78.5%	0.9%	0.0%	0.0%	79.4%
	1	0.9%	7.5%	0.9%	0.0%	9.3%
	0	0.0%	0.0%	0.0%	11.2%	11.2%
	Total	79.4%	8.4%	0.9%	11.2%	100.0%

Observational Rubric

Checklist	#2	3	2	1	0	Total
	2	80.4%	7.5%	0.0%	0.0%	87.9%
	1	0.0%	9.3%	0.9%	0.0%	10.3%
	0	0.0%	0.0%	0.0%	1.9%	1.9%
	Total	80.4%	16.8%	0.9%	1.9%	100.0%

Observational Rubric

Checklist	#3	3	2	1	0	Total
	2	88.8%	0.0%	0.0%	0.0%	88.8%
	1	0.0%	7.5%	0.9%	0.9%	9.3%
	0	0.0%	0.0%	0.9%	0.9%	1.9%
	Total	88.8%	7.5%	1.9%	1.9%	100.0%

Observational Rubric

Checklist	#4	3	2	1	0	Total
	2	79.4%	0.9%	0.0%	0.0%	80.4%
	1	0.0%	18.7%	0.9%	0.0%	19.6%
	0	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	79.4%	19.6%	0.9%	0.0%	100.0%

Observational Rubric

Checklist	#5	3	2	1	0	Total
	2	59.8%	1.9%	0.0%	0.0%	61.7%
	1	0.0%	25.2%	10.3%	0.0%	35.5%
	0	0.0%	0.0%	0.0%	2.8%	2.8%
	Total	59.8%	27.1%	10.3%	2.8%	100.0%

Observational Rubric

Checklist	#6	3	2	1	0	Total
	2	61.3%	10.4%	0.0%	0.0%	71.7%
	1	0.9%	13.2%	9.4%	0.0%	23.6%
	0	0.0%	0.0%	1.9%	2.8%	4.7%
	Total	62.3%	23.6%	11.3%	2.8%	100.0%

Observational Rubric

Checklist	#7	3	2	1	0	Total
	2	69.2%	4.7%	0.0%	0.0%	73.8%
	1	0.0%	13.1%	9.3%	0.0%	22.4%
	0	0.0%	0.0%	0.0%	3.7%	3.7%
	Total	69.2%	17.8%	9.3%	3.7%	100.0%

Observational Rubric

Checklist	#8	3	2	1	0	Total
	2	72.9%	7.5%	0.0%	0.0%	80.4%
	1	0.0%	16.8%	2.8%	0.0%	19.6%
	0	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	72.9%	24.3%	2.8%	0.0%	100.0%

Observational Rubric

Checklist	#9	3	2	1	0	Total
	2	71.0%	5.6%	0.0%	0.0%	76.6%
	1	0.9%	16.8%	2.8%	0.0%	20.6%
	0	0.0%	0.0%	0.9%	1.9%	2.8%
	Total	72.0%	22.4%	3.7%	1.9%	100.0%

Observational Rubric

Checklist	#10	3	2	1	0	Total
	2	76.6%	0.9%	0.0%	0.0%	77.6%
	1	0.0%	12.1%	4.7%	0.0%	16.8%
	0	0.0%	0.9%	0.0%	4.7%	5.6%
	Total	76.6%	14.0%	4.7%	4.7%	100.0%

Observational Rubric

Checklist	#11	3	2	1	0	Total
	2	73.8%	5.6%	1.9%	0.0%	81.3%
	1	1.9%	8.4%	6.5%	0.0%	16.8%
	0	0.0%	0.0%	1.9%	0.0%	1.9%
	Total	75.7%	14.0%	10.3%	0.0%	100.0%

Observational Rubric

Checklist	#12	3	2	1	0	Total
	2	51.4%	9.3%	0.0%	0.0%	60.7%
	1	1.9%	22.4%	7.5%	0.0%	31.8%
	0	0.0%	0.0%	2.8%	4.7%	7.5%
	Total	53.3%	31.8%	10.3%	4.7%	100.0%

Forms C & D

Observational Rubric

Checklist #1	3	2	1	0	Total
2	79.6%	5.1%	0.0%	0.0%	84.7%
1	1.0%	8.2%	5.1%	0.0%	14.3%
0	0.0%	0.0%	0.0%	1.0%	1.0%
Total	80.6%	13.3%	5.1%	1.0%	100.0%

Observational Rubric

Checklist #2	3	2	1	0	Total
2	83.7%	8.2%	0.0%	0.0%	91.8%
1	0.0%	7.1%	0.0%	0.0%	7.1%
0	0.0%	0.0%	0.0%	1.0%	1.0%
Total	83.7%	15.3%	0.0%	1.0%	100.0%

Observational Rubric

Checklist #3	3	2	1	0	Total
2	84.7%	6.1%	0.0%	0.0%	90.8%
1	1.0%	5.1%	1.0%	0.0%	7.1%
0	0.0%	0.0%	2.0%	0.0%	2.0%
Total	85.7%	11.2%	3.1%	0.0%	100.0%

Observational Rubric

Checklist #4	3	2	1	0	Total
2	81.6%	3.1%	0.0%	0.0%	84.7%
1	1.0%	11.2%	2.0%	0.0%	14.3%
0	0.0%	0.0%	1.0%	0.0%	1.0%
Total	82.7%	14.3%	3.1%	0.0%	100.0%

Observational Rubric

Checklist #5	3	2	1	0	Total
2	54.1%	15.3%	0.0%	0.0%	69.4%
1	2.0%	17.3%	9.2%	0.0%	28.6%
0	0.0%	0.0%	1.0%	1.0%	2.0%
Total	56.1%	32.7%	10.2%	1.0%	100.0%

Observational Rubric

Checklist #6	3	2	1	0	Total
2	56.1%	12.2%	1.0%	0.0%	69.4%
1	0.0%	12.2%	16.3%	0.0%	28.6%
0	0.0%	0.0%	0.0%	2.0%	2.0%
Total	56.1%	24.5%	17.3%	2.0%	100.0%

Observational Rubric

Checklist #7	3	2	1	0	Total
2	58.2%	13.3%	0.0%	0.0%	71.4%
1	2.0%	12.2%	8.2%	1.0%	23.5%
0	0.0%	0.0%	1.0%	4.1%	5.1%
Total	60.2%	25.5%	9.2%	5.1%	100.0%

Observational Rubric

Checklist #8	3	2	1	0	Total
2	58.2%	17.3%	0.0%	0.0%	75.5%
1	1.0%	10.2%	8.2%	1.0%	20.4%
0	0.0%	0.0%	0.0%	4.1%	4.1%
Total	59.2%	27.6%	8.2%	5.1%	100.0%

Observational Rubric

Checklist #9	3	2	1	0	Total
2	61.2%	15.3%	0.0%	0.0%	76.5%
1	2.0%	14.3%	3.1%	0.0%	19.4%
0	0.0%	0.0%	1.0%	3.1%	4.1%
Total	63.3%	29.6%	4.1%	3.1%	100.0%

Observational Rubric

Checklist #10	3	2	1	0	Total
2	68.4%	12.2%	0.0%	0.0%	80.6%
1	0.0%	8.2%	6.1%	1.0%	15.3%
0	0.0%	0.0%	1.0%	3.1%	4.1%
Total	68.4%	20.4%	7.1%	4.1%	100.0%

Observational Rubric

Checklist #11	3	2	1	0	Total
2	50.0%	13.8%	0.0%	0.0%	63.8%
1	1.1%	20.2%	8.5%	1.1%	30.9%
0	0.0%	0.0%	1.1%	4.3%	5.3%
Total	51.1%	34.0%	9.6%	5.3%	100.0%

Observational Rubric

Checklist #12	3	2	1	0	Total
2	38.3%	18.1%	3.2%	0.0%	59.6%
1	0.0%	16.0%	13.8%	2.1%	31.9%
0	0.0%	0.0%	2.1%	6.4%	8.5%
Total	38.3%	34.0%	19.1%	8.5%	100.0%

Appendix G: Field Test—Item-Level Statistics

Item ID	Item Type	Form	Max	M	SD	Difficulty (*p*-value)	Students at Score Point (%)					Not Scorable	Missing
							N	0	1	2	3		
LL.1.1.A_B101	SR	B	1	0.87	0.34	0.87	620	12.90	87.10			1.60	8.15
LL.1.1.A_D101	SR	C	1	0.77	0.42	0.77	658	23.40	76.60			0.30	1.05
LL.1.1.A_E101	SR	A	1	0.96	0.20	0.96	741	4.32	95.68			1.05	12.49
LL.1.1.A_F101	SR	B	1	0.95	0.22	0.95	665	5.11	94.89			1.46	1.75
LL.1.1.A_G101	SR	C	1	0.76	0.43	0.76	659	24.43	75.57			0.15	1.05
LL.1.1.A_H101	SR	A	1	0.97	0.16	0.97	760	2.63	97.37			0.93	10.39
LL.1.1.B_B103	SR	B	1	0.88	0.32	0.88	622	11.90	88.10			1.46	8.01
LL.1.1.B_B104	SR	B	1	0.86	0.35	0.86	620	14.03	85.97			1.46	8.30
LL.1.1.B_B105	SR	B	1	0.81	0.40	0.81	619	19.39	80.61			1.60	8.30
LL.1.1.B_D102	SR	C	1	0.85	0.36	0.85	656	14.94	85.06			0.75	0.90
LL.1.1.B_D103	SR	C	1	0.80	0.40	0.80	646	20.12	79.88			2.10	1.05
LL.1.1.B_D104	SR	C	1	0.77	0.42	0.77	652	23.16	76.84			1.05	1.20
LL.1.1.B_E102	SR	A	1	0.74	0.44	0.74	742	25.74	74.26			1.17	12.25
LL.1.1.B_E103	SR	A	1	0.82	0.39	0.82	742	18.46	81.54			0.93	12.49
LL.1.1.B_E104	SR	A	1	0.89	0.31	0.89	740	11.08	88.92			0.93	12.72
LL.1.1.B_F102	SR	B	1	0.97	0.18	0.97	667	3.45	96.55			1.75	1.16
LL.1.1.B_F104	SR	B	1	0.84	0.37	0.84	662	16.16	83.84			1.89	1.75
LL.1.1.B_F105	SR	B	1	0.66	0.47	0.66	661	33.74	66.26			2.62	1.16
LL.1.1.B_G102	SR	C	1	0.61	0.49	0.61	660	38.79	61.21			0.30	0.75
LL.1.1.B_G103	SR	C	1	0.78	0.42	0.78	653	22.36	77.64			0.60	1.50
LL.1.1.B_G104	SR	C	1	0.95	0.22	0.95	658	5.17	94.83			0.45	0.90
LL.1.1.B_H102	SR	A	1	0.96	0.19	0.96	761	3.68	96.32			0.82	10.39
LL.1.1.B_H104	SR	A	1	0.98	0.15	0.98	759	2.24	97.76			0.93	10.50
LL.1.1.B_H105	SR	A	1	0.92	0.27	0.92	760	8.03	91.97			0.93	10.39
LL.1.1.C_B106	PT	B	3	2.44	0.87	0.81	614	5.37	9.12	21.66	63.84	1.89	8.73
LL.1.1.C_D106	PT	C	3	2.47	0.80	0.82	648	2.93	10.65	23.30	63.12	1.50	1.35
LL.1.1.C_E106	PT	A	3	1.46	1.09	0.49	691	25.33	25.04	27.93	21.71	7.47	11.90
LL.1.1.C_F106	PT	B	3	1.76	1.13	0.59	599	19.53	19.37	26.21	34.89	2.33	10.48
LL.1.1.C_G106	PT	C	3	2.40	0.73	0.80	658	1.82	8.81	36.63	52.74	0.90	0.45
LL.1.1.C_H106	PT	A	3	2.14	0.91	0.71	754	7.16	14.46	36.07	42.31	1.87	10.15
LL.1.2.A_A128	SR	C	1	0.50	0.50	0.50	655	50.23	49.77			1.05	0.75
LL.1.2.A_A129	SR	A	1	0.81	0.39	0.81	765	18.56	81.44			1.63	9.10
		C	1	0.77	0.42	0.77	656	23.17	76.83			1.05	0.60
LL.1.2.A_A162	SR	A	1	0.56	0.50	0.56	758	44.33	55.67			2.10	9.45
		B	1	0.61	0.49	0.61	623	39.49	60.51			1.75	7.57
LL.1.2.A_A163	SR	B	1	0.84	0.36	0.84	623	15.57	84.43			1.75	7.57
LL.1.2.B_A126	PT	A	3	2.51	0.83	0.84	771	4.41	8.43	18.55	68.61	0.82	9.22
		C	3	2.31	0.98	0.77	659	8.65	10.77	21.24	59.33	0.60	0.60
LL.1.2.B_A164	PT	B	3	1.56	1.18	0.52	620	29.19	14.03	28.71	28.06	2.18	7.57

Note: Percentage of Students at Score Point is based on the sample size with valid scores (N). Percentage of Not Scorable and Missing are based on the entire sample size of the form.

Item ID	Item Type	Form	Max	M	SD	Difficulty (*p*-value)	Students at Score Point (%) N	0	1	2	3	Not Scorable	Missing
LL.1.2.D_A127	SR	C	1	0.75	0.43	0.75	661	24.81	75.19			0.45	0.45
LL.1.2.D_A167	SR	A	1	0.84	0.37	0.84	761	16.16	83.84			1.87	9.33
LL.1.2.D_A180	SR	B	1	0.79	0.41	0.79	623	21.03	78.97			1.75	7.57
LL.1.3.B_A130	PT	A	2	1.83	0.41	0.91	771	1.30	14.66	84.05		0.82	9.22
		B	2	1.79	0.47	0.90	627	2.87	15.15	81.98		1.16	7.57
LL.1.3.B_A170	PT	C	2	1.77	0.50	0.89	660	3.48	15.91	80.61		0.45	0.60
LL.1.3.C_A132	PT	C	3	2.77	0.53	0.92	662	0.76	3.02	14.20	82.02	0.30	0.45
LL.1.3.C_A133	PT	A	3	2.75	0.59	0.92	791	1.26	4.17	12.64	81.92	0.82	6.88
		B	3	2.72	0.66	0.91	628	2.23	5.10	11.15	81.53	1.02	7.57
LL.2.1.A_OR_18	OR	F	2	1.62	0.55	0.81	865	3.47	30.64	65.90		0.40	41.86
LL.2.1.A_OR_19	OR	F	2	1.61	0.56	0.81	866	3.81	30.95	65.24		0.40	41.79
LL.2.1.B_OR_20	OR	F	2	1.65	0.56	0.83	868	4.15	26.27	69.59		0.40	41.66
LL.2.1.B_OR_21	OR	F	2	1.57	0.62	0.78	867	6.69	30.10	63.21		0.40	41.72
LL.3.1.A_A134	PT	A	2	1.96	0.23	0.98	781	0.64	2.82	96.54		1.28	7.58
		B	2	1.94	0.27	0.97	678	0.74	4.72	94.54		0.73	0.58
		C	2	1.95	0.24	0.97	660	0.30	4.70	95.00		0.75	0.30
LL.3.1.B_A136	PT	C	2	1.94	0.27	0.97	661	1.06	3.48	95.46		0.45	0.45
LL.3.1.B_A153	PT	A	2	1.94	0.25	0.97	784	0.26	5.87	93.88		0.82	7.70
LL.3.1.B_A179	PT	B	2	1.93	0.29	0.97	677	1.03	4.73	94.24		0.87	0.58
LL.4.1.A_A155	PT	B	3	2.78	0.53	0.93	667	1.05	2.25	14.84	81.86	1.02	1.89
LL.4.1.A_A156	PT	A	3	2.67	0.53	0.89	767	0.26	2.22	27.51	70.01	0.93	9.57
		C	3	2.63	0.53	0.88	662	0.15	1.96	32.63	65.26	0.15	0.60
LL.4.1.A_A194	PT	A	3	2.30	0.70	0.77	766	1.04	10.97	45.04	42.95	1.05	9.57
		C	3	2.40	0.71	0.80	662	1.06	10.27	35.95	52.72	0.15	0.60
LL.4.1.A_A195	PT	B	3	2.34	0.72	0.78	659	1.82	8.80	42.49	46.89	1.31	2.77
LL.4.1.B_A157	PT	B	2	1.57	0.57	0.79	626	3.83	35.14	61.02		1.46	7.42
LL.4.1.B_A158	PT	C	2	1.41	0.62	0.70	661	7.11	45.08	47.81		0.30	0.60
LL.4.1.B_A168	PT	A	2	1.47	0.59	0.73	766	4.96	43.08	51.96		0.93	9.68
LL.4.1.D_A160	PT	B	3	2.78	0.58	0.93	660	1.36	3.94	10.45	84.24	1.31	2.62
LL.4.1.D_A161	PT	C	3	2.60	0.65	0.87	661	0.76	6.51	24.81	67.93	0.30	0.60
LL.4.1.D_A169	PT	A	3	2.31	0.82	0.77	766	2.22	15.93	30.42	51.44	1.05	9.57
LL.4.2.A_OR_22	OR	F	2	1.49	0.66	0.75	869	9.44	31.88	58.69		0.40	41.59
LL.4.2.A_OR_23	OR	F	2	1.46	0.64	0.73	868	8.29	36.98	54.72		0.40	41.66
LL.4.2.A_OR_24	OR	F	2	1.37	0.68	0.69	867	11.19	40.60	48.21		0.40	41.72
LL.4.2.B_B102	SR	B	1	0.96	0.20	0.96	624	4.01	95.99			1.46	7.71
LL.4.2.B_D105	SR	C	1	0.88	0.33	0.88	656	12.35	87.65			1.05	0.60
LL.4.2.B_E105	SR	A	1	0.86	0.34	0.86	746	13.67	86.33			0.93	12.02
LL.4.2.B_F103	SR	B	1	0.60	0.49	0.60	662	40.33	59.67			2.04	1.60
LL.4.2.B_G105	SR	C	1	0.93	0.25	0.93	656	6.71	93.29			0.60	1.05
LL.4.2.B_H103	SR	A	1	0.75	0.43	0.75	759	24.51	75.49			0.93	10.50

Note: Percentage of Students at Score Point is based on the sample size with valid scores (N). Percentage of Not Scorable and Missing are based on the entire sample size of the form.

Item ID	Item Type	Form	Max	M	SD	Difficulty (*p*-value)	Students at Score Point (%)					Not Scorable	Missing
							N	0	1	2	3		
MA.1.1.A_A101	PT	E	3	2.68	0.66	0.89	665	0.00	10.83	9.92	79.25	1.62	0.29
MA.1.1.A_A102	PT	D	3	2.60	0.81	0.87	624	3.69	9.46	9.94	76.92	2.65	0.00
MA.1.1.B_A106	PT	E	3	2.53	0.83	0.84	672	4.02	10.27	14.58	71.13	0.59	0.29
MA.1.1.C_A103	PT	D	3	2.26	0.89	0.75	634	5.36	14.04	29.34	51.26	0.47	0.62
MA.1.1.C_A104	PT	E	3	2.19	0.79	0.73	669	2.99	14.80	42.45	39.76	0.88	0.44
MA.1.1.C_A120	PT	D	3	2.10	0.99	0.70	636	5.03	29.25	16.35	49.37	0.31	0.47
MA.1.1.D_A112	PT	D	2	1.88	0.38	0.94	634	1.89	7.89	90.22		0.62	0.47
MA.1.1.D_A121	PT	E	2	1.86	0.42	0.93	650	3.08	7.54	89.38		0.88	3.24
MA.1.1.F_A114	PT	E	1	0.97	0.17	0.97	669	2.84	97.16			1.03	0.29
MA.1.1.F_A115	PT	D	1	0.92	0.27	0.92	636	7.70	92.30			0.31	0.47
MA.1.1.F_A116	PT	D	1	0.99	0.12	0.99	636	1.42	98.58			0.31	0.47
MA.1.1.G_A117	PT	E	3	2.30	1.04	0.77	663	11.01	10.11	16.89	61.99	2.21	0.00
MA.1.1.G_A119	PT	D	3	2.91	0.42	0.97	635	0.94	1.89	2.83	94.33	0.31	0.62
MA.2.1.B_A137	PT	E	1	0.76	0.43	0.76	670	24.03	75.97			0.88	0.29
MA.2.1.B_A138	PT	D	1	0.66	0.47	0.66	633	33.97	66.03			0.62	0.62
MA.2.1.C_A140	PT	D	1	0.68	0.47	0.68	606	32.34	67.66			4.99	0.47
MA.2.1.C_A141	PT	E	1	0.61	0.49	0.61	652	38.80	61.20			2.80	1.03
MA.3.1.B_A123	PT	E	2	1.77	0.60	0.89	665	9.47	3.76	86.77		1.62	0.29
MA.3.1.B_A142	PT	D	2	1.71	0.68	0.85	630	12.86	3.33	83.81		1.09	0.62
MA.3.1.B_C102	PT	D	2	1.92	0.34	0.96	633	2.05	3.63	94.31		0.62	0.62
MA.3.1.D_A125	SR	E	1	0.89	0.32	0.89	667	11.39	88.61			1.33	0.29
MA.3.1.D_A143	SR	D	1	0.92	0.27	0.92	622	8.20	91.80			2.50	0.47
MA.3.1.D_A144	SR	D	1	0.83	0.37	0.83	624	16.83	83.17			2.03	0.62
MA.3.1.D_A145	SR	E	1	0.71	0.46	0.71	668	29.49	70.51			1.18	0.29
MA.3.1.D_A147	SR	D	1	0.74	0.44	0.74	624	25.64	74.36			2.18	0.47
MA.3.1.D_A148	SR	E	1	0.92	0.27	0.92	665	8.12	91.88			1.77	0.15
MA.3.1.D_A149	SR	E	1	0.63	0.48	0.63	663	36.50	63.50			1.33	0.88
MA.3.2.A_A150	PT	E	2	1.80	0.44	0.90	669	1.79	16.29	81.91		1.03	0.29
MA.3.2.A_A151	PT	E	2	1.76	0.50	0.88	667	3.45	17.39	79.16		1.33	0.29
MA.3.2.A_A152	PT	D	2	1.73	0.52	0.87	634	3.63	19.56	76.81		0.47	0.62
MA.3.2.B_A174	PT	D	1	0.52	0.50	0.52	623	47.67	52.33			2.18	0.62
MA.3.2.B_A175	PT	E	1	0.45	0.50	0.45	664	54.52	45.48			1.77	0.29
MA.4.1.A_A176	PT	D	2	1.97	0.19	0.98	635	0.31	2.52	97.17		0.31	0.62
MA.4.1.A_A177	PT	D	2	1.74	0.45	0.87	634	0.32	25.39	74.29		0.47	0.62
MA.4.1.A_A178	PT	E	2	1.90	0.38	0.95	670	2.39	5.67	91.94		0.88	0.29
MA.4.1.B_A191	PT	E	2	1.58	0.60	0.79	668	5.84	30.09	64.07		1.18	0.29
MA.4.1.B_A192	PT	E	2	1.54	0.60	0.77	667	5.85	34.18	59.97		1.18	0.44
MA.4.1.B_A193	PT	D	2	1.61	0.57	0.80	630	4.44	30.16	65.40		1.09	0.62
MA.4.1.B_C101	PT	D	2	1.86	0.37	0.93	634	0.79	11.99	87.22		0.47	0.62

Note: Percentage of Students at Score Point is based on the sample size with valid scores (N). Percentage of Not Scorable and Missing are based on the entire sample size of the form.

Item ID	Item Type	Form	Max	M	SD	Difficulty (*p*-value)	Students at Score Point (%) N	0	1	2	3	Not Scorable	Missing
PD.1.1.A_OR_01	OR	F	2	1.78	0.47	0.89	907	2.54	17.09	80.37		0.40	39.05
PD.1.1.B_OR_02	OR	F	2	1.82	0.41	0.91	819	1.22	15.51	83.27		1.74	43.59
PD.1.1.B_OR_04	OR	F	2	1.85	0.38	0.93	863	1.04	12.86	86.10		0.47	41.92
PD.1.1.B_OR_05	OR	F	2	1.70	0.55	0.85	845	4.38	21.18	74.44		1.74	41.86
PD.1.2.B_OR_06	OR	F	2	1.72	0.51	0.86	864	2.89	22.22	74.88		0.33	41.99
PD.1.2.B_OR_07	OR	F	2	1.86	0.37	0.93	867	0.58	13.26	86.16		0.27	41.86
PD.1.2.C_OR_08	OR	F	2	1.74	0.48	0.87	871	1.95	22.04	76.00		0.27	41.59
PD.2.1.A_OR_10	OR	F	2	1.77	0.47	0.88	863	2.32	18.66	79.03		0.60	41.79
PD.2.1.B_OR_09	OR	F	2	1.73	0.51	0.87	844	3.44	19.91	76.66		2.00	41.66
PD.2.2.A_OR_15	OR	F	2	1.68	0.51	0.84	843	2.25	27.52	70.23		1.80	41.92
PD.2.2.B_OR_17	OR	F	2	1.75	0.49	0.88	829	2.53	19.90	77.56		1.74	42.92
SC.1.1.A_OR_25	OR	F	2	1.74	0.52	0.87	828	3.74	18.24	78.02		1.60	43.12
SC.1.1.B_A107	SR	D	1	0.69	0.46	0.69	607	31.47	68.53			4.68	0.62
SC.1.1.B_A108	SR	D	1	0.70	0.46	0.70	610	29.51	70.49			4.21	0.62
SC.1.1.B_A109	SR	E	1	0.74	0.44	0.74	666	26.28	73.72			1.33	0.44
SC.1.1.B_A110	SR	E	1	0.57	0.50	0.57	663	43.44	56.56			1.77	0.44
SC.1.1.B_A111	SR	E	1	0.25	0.43	0.25	666	74.77	25.23			1.33	0.44
SC.1.1.B_OR_27	OR	F	2	1.62	0.59	0.81	841	5.35	26.99	67.66		0.40	43.46
SC.1.1.B_OR_28	OR	F	2	1.66	0.54	0.83	842	3.56	27.08	69.36		0.40	43.39
SF.1.1.B_OR_35	OR	F	2	1.69	0.55	0.84	1105	4.52	22.35	73.12		0.67	25.57
SF.1.1.B_OR_36	OR	F	2	1.70	0.54	0.85	1132	4.24	21.47	74.29		0.40	24.03
SF.1.1.B_OR_37	OR	F	2	1.72	0.53	0.86	1109	3.70	21.01	75.29		0.40	25.57
SF.1.1.C_OR_38	OR	F	2	1.72	0.56	0.86	1108	5.51	17.24	77.26		0.27	25.77
SF.1.1.C_OR_39	OR	F	2	1.66	0.59	0.83	1084	6.37	21.59	72.05		0.47	27.17
SF.1.2.B_OR_41	OR	F	2	1.70	0.53	0.85	1067	3.66	22.31	74.04		1.80	26.97
SF.1.2.B_OR_42	OR	F	2	1.59	0.61	0.80	1109	6.67	27.59	65.73		0.53	25.43
SF.1.2.C_OR_43	OR	F	2	1.71	0.53	0.86	1040	3.94	20.87	75.19		0.33	30.24
SF.1.2.C_OR_44	OR	F	2	1.88	0.36	0.94	1044	1.05	9.87	89.08		0.13	30.17
SF.1.3.A_OR_45	OR	F	2	1.51	0.70	0.75	1107	11.65	25.93	62.42		0.47	25.63
SF.1.3.B_OR_46	OR	F	2	1.30	0.73	0.65	1086	16.30	37.38	46.32		0.33	27.17
SF.2.1.A_OR_11	OR	F	2	1.67	0.56	0.84	1084	4.70	23.43	71.86		0.33	27.30
SF.2.1.A_OR_47	OR	F	2	1.53	0.62	0.76	1083	7.02	33.24	59.74		0.53	27.17
SF.2.1.A_OR_48	OR	F	2	1.64	0.61	0.82	1124	6.85	22.15	71.00		0.27	24.70
SF.2.1.C_OR_49	OR	F	2	1.73	0.53	0.86	1065	3.94	19.25	76.81		0.20	28.70
SF.2.1.C_OR_50	OR	F	2	1.75	0.52	0.88	1087	3.96	16.84	79.21		0.20	27.24
SF.2.2.A_OR_51	OR	F	2	1.51	0.64	0.76	1085	8.20	32.26	59.54		0.20	27.37
SF.2.2.A_OR_52	OR	F	2	1.73	0.51	0.86	1085	3.13	21.20	75.67		0.20	27.37
SF.2.2.A_OR_53	OR	F	2	1.51	0.61	0.76	1087	6.26	36.34	57.41		0.20	27.24
SF.2.2.B_OR_55	OR	F	2	1.41	0.68	0.70	1082	11.18	36.78	52.03		0.33	27.44
SF.2.2.B_OR_56	OR	F	2	1.54	0.61	0.77	1104	5.89	34.06	60.05		0.20	26.10

Note: Percentage of Students at Score Point is based on the sample size with valid scores (N). Percentage of Not Scorable and Missing are based on the entire sample size of the form.

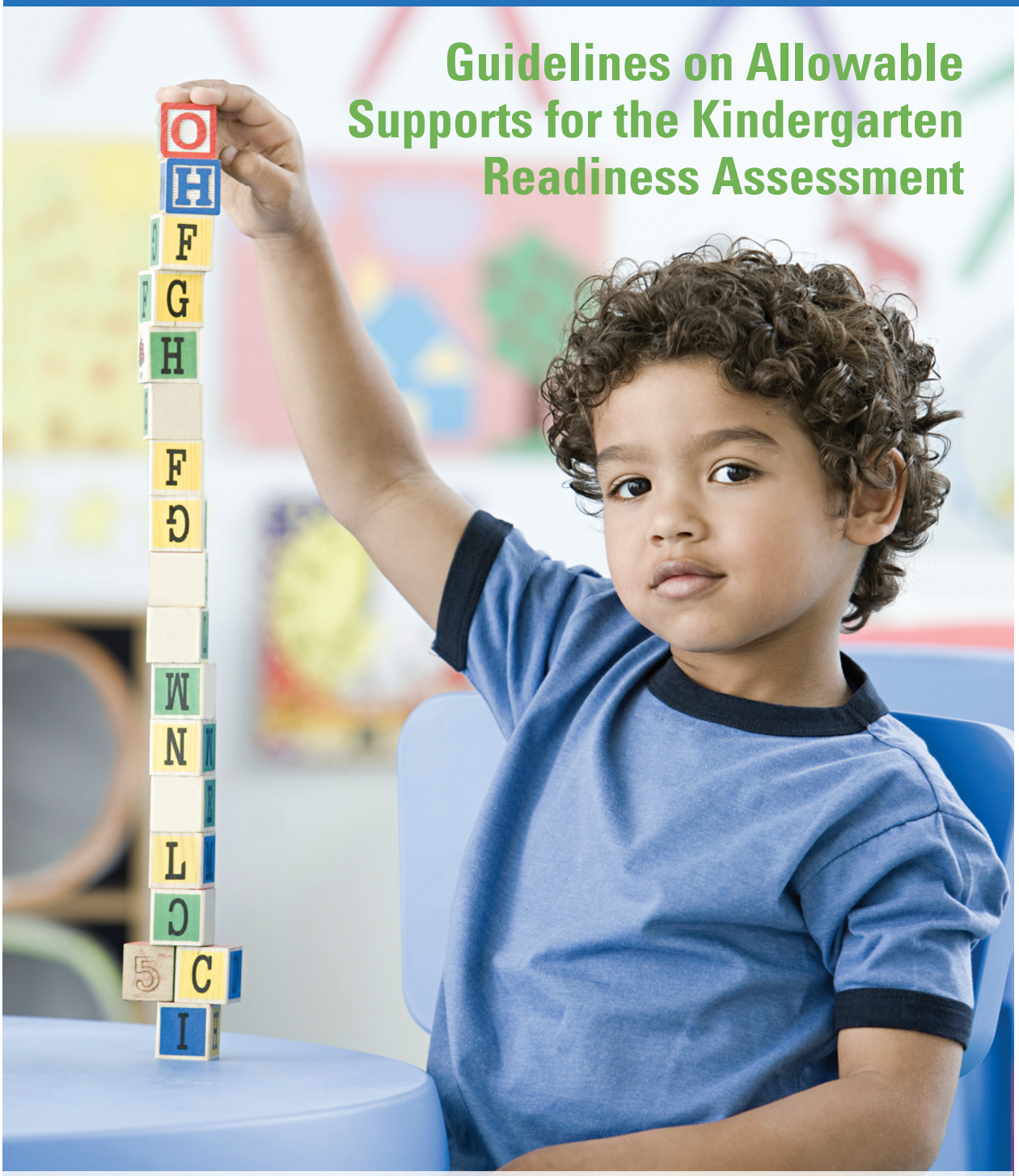
Item ID	Item Type	Form	Max	M	SD	Difficulty (*p*-value)	Students at Score Point (%) N	0	1	2	3	Not Scorable	Missing
SF.2.3.A_OR_57	OR	F	2	1.57	0.61	0.79	1062	6.40	30.13	63.47		0.33	28.77
SF.2.3.A_OR_58	OR	F	2	1.51	0.64	0.75	1089	8.08	33.06	58.86		0.20	27.10
SF.2.3.C_OR_12	OR	F	2	1.43	0.70	0.71	1106	12.30	32.46	55.24		0.20	25.97
SF.2.3.C_OR_60	OR	F	2	1.60	0.60	0.80	1097	5.74	28.26	66.00		0.13	26.64
SF.2.4.B_OR_62	OR	F	2	1.32	0.67	0.66	1088	11.67	44.85	43.47		0.13	27.24
SF.2.5.A_OR_64	OR	F	2	1.45	0.60	0.72	1069	5.80	43.78	50.42		0.20	28.44
SF.2.5.D_OR_65	OR	F	2	1.57	0.61	0.78	1003	6.48	30.11	63.41		0.33	32.71
SF.2.6.B_OR_67	OR	F	2	1.62	0.58	0.81	929	5.17	27.23	67.60		2.47	35.51
SF.2.6.B_OR_68	OR	F	2	1.53	0.61	0.76	921	5.86	35.29	58.85		3.00	35.51
SF.2.6.D_OR_69	OR	F	2	1.79	0.45	0.89	978	1.84	17.38	80.78		0.27	34.45
SF.2.6.D_OR_70	OR	F	2	1.78	0.48	0.89	992	2.72	16.53	80.75		0.27	33.51
SS.1.1.A_OR_29	OR	F	2	1.79	0.46	0.90	825	2.18	16.61	81.21		1.80	43.12
SS.1.1.B_OR_32	OR	F	2	1.73	0.52	0.86	845	3.79	19.64	76.57		0.27	43.32
SS.2.1.A_OR_33	OR	F	2	1.59	0.55	0.80	846	2.96	34.99	62.06		0.27	43.26
SS.2.1.A_OR_34	OR	F	2	1.57	0.58	0.78	848	4.60	33.84	61.56		0.27	43.12

Note: Percentage of Students at Score Point is based on the sample size with valid scores (N). Percentage of Not Scorable and Missing are based on the entire sample size of the form.

Appendix H: Guidelines on Allowable Supports for the Kindergarten Readiness Assessment

MARYLAND, Ready for Kindergarten Assessments:

Guidelines on Allowable Supports for the Kindergarten Readiness Assessment



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Section I: Overview

Ready for Kindergarten: Maryland's Early Childhood Comprehensive Assessment System was created with Race to the Top Early Learning Challenge Grant funding awarded in December 2011. The assessment system is aligned to the state's guidelines and standards for young children, birth through age 6, including the Maryland College and Career-Ready Standards. In addition to the conducting routine developmental screening using state-recommended instruments, the Ready for Kindergarten (R4K) system involves the administration of two types of classroom-based assessments: (1) Early Learning Assessment (ELA) for use throughout the school year for children ages three through kindergarten; and (2) Kindergarten Readiness Assessment (KRA) for use during the first several weeks of a student's kindergarten school year. **This document addresses the scope of the administration of the KRA**. The guidelines were developed using feedback from teachers, as well as input from state and national experts. The supports and strategies outlined in this document are intended to maximize the participation of all students in the KRA.

Participation Requirements

All students, including students with disabilities and students who are English learners, are required to participate in the KRA and have their results be part of the state's summary reports. A fully accessible approach to assessment design and implementation is necessary for students with diverse learning characteristics to ensure that they have the opportunity to demonstrate their knowledge and skills. At the same time, states need to be confident in the results obtained from the assessments when conducting analyses and making policy decisions. In addition, school administrators, teachers, and parents need to have a true sense of where they students are developmentally, and subsequently identify focus areas in which they can plan instruction that promotes growth in individual students. To meet all of these needs, a structured decision-making process has been developed for identifying and implementing individualized student supports when administering the KRA.

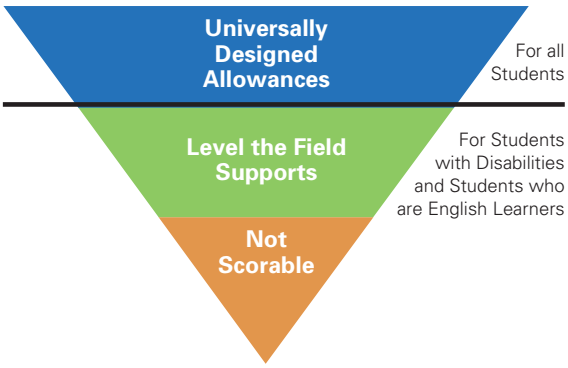
For the Kindergarten Readiness Assessment:

- A **student with a disability** is defined as a student with an Individualized Education Program (IEP) or a Section 504 plan.
- A **student who is an English learner** is defined as a student whose primary or home language is one other than English and who cannot perform some or all classroom activities in English because he or she may have limited or no age appropriate ability to understand or speak in English.

Differentiating Assessment Administration

Expectations have been established for students participating in the KRA with consideration for their unique developmental needs and levels of school readiness. A tiered decision-making process has been developed for differentiating administration of the assessment (see Figure 1). This process begins with utilizing universally designed allowances (UDAs), which are supports that are appropriate to provide to all students. When further individualization is needed for students with disabilities and students who are English learners, the process outlines additional allowable supports and administration procedures.

Figure 1: *Differentiating Administration of the Ready for Kindergarten Assessments*



This decision-making process for differentiating administration of the KRA uses the following options:

- **General Administration** – This is the administration of the KRA following General Administration procedures (applicable to the particular assessment) and applying universally designed allowances.
- **Level the Field supports (for students with disabilities and students who are English learners only)** – This involves administering the

KRA following general administration procedures, but providing additional allowable individualized supports above and beyond universally designed allowances.

- **Not Scorable (for students with disabilities and students who are English learners only)** – Some assessment activities may not be within a student's abilities given any allowable support. In other words, the skill being assessed may not be appropriate given the student's disability or level of English language proficiency. Therefore, the skill is considered "Not Scorable."

When administering the KRA, teachers do not need to move sequentially through these three options for students with disabilities and English learners. For example, they can start administration with using the Level the Field option. Teams should, however, avoid assuming that a student with a disability or a student who is an English learner needs to automatically move beyond General Administration.

General Administration with Universally Designed Allowances

Universal design describes a framework for curriculum design, instructional processes, and assessments that provides all students with equal opportunities to learn and to demonstrate what they have learned (CAST, 2013; PARCC, 2014; Ray, Aguinaga, & Bigler, 2010). In general, the impetus behind universal design is to provide access to the greatest number of students during instruction and assessment. This, in turn, minimizes the need for accommodations or changes. Universal design benefits all learners, as it incorporates flexibility to meet the diverse needs of a wide range of students. It is particularly advantageous when variability—both within a student's developmental profile and in comparison to others—is common.

Applied to the Ready for Kindergarten assessments, universally designed allowances encompass the range of actions, material presentations, procedures, and settings that are acceptable for use with *all* students.

Level the Field Supports

Level the Field supports are individualized supports **only for students with disabilities and students who are English learners**. They are provided in addition to universally designed allowances, when needed. Level the Field supports are designed to provide equal access and opportunity for participation in the KRA without substantially altering what a student is expected to do. These supports are intended to reduce or even eliminate the effects of a student's disability or limited English proficiency (Bagnato, Neisworth, & Pretti-Frontczak, 2010). To be effective, these supports must address the unique needs of the student for whom they are provided and should assist the student in overcoming the educational barriers that prevent him or her from demonstrating his or her true knowledge and skills. Providing a student with Level the Field supports yields scores on the KRA that are as valid and reliable as they would be if General Administration (with universally designed allowances) procedures were used.

Using the "Not Scorable" Option

For students with disabilities and students who are English learners only, an item or skill on the KRA may be marked as "Not Scorable" when the assessment activity it is not accessible to the student even with universal designed allowances (UDAs) and Level the Fields supports. In other words, the skill being assessed is not appropriate given the characteristics of the student's disability or level of English proficiency. Students that receive "Not Scorable" will not receive an overall performance profile on the KRA assessment, but will receive a score for each domain that did not have any items marked "Not Scorable." In addition, the student's results related to the skill are not included in the school, district, or state aggregate data. If a student receives "Not Scorable" for three items *(not necessarily three consecutive items)*, the administration of that domain is paused. In such cases, the test administrator should review the decision-making process. Please refer to the appropriate chart (Figures 2 or 3) in this document or the *Quick Guides*.

Team-Based Decision-Making

Teachers administering the KRA to students with disabilities and students who are English learners should collaborate with the student's instructional team (e.g., special educator, English for speakers of other languages [ESOL] staff, parents) to identify needed supports. School/program staff members on the instructional team should familiarize themselves with assessment materials ahead of time so they are able to discuss the allowable supports that should be used during administration. Below is a question team

members may want to consider when reviewing the assessment:

- Is the assessment task similar to other classroom tasks and activities in which the student has experience participating, or will the student have the opportunity to practice similar tasks prior to administering the item?
- Do we provide individualized supports, such as those indicated in the student's IEP or Section 504 plan, for a classroom task that is similar to the item?
- Are there barriers to participation in the assessment activities that could be removed by implementing a support that is not already in place for the student in the classroom?

The supplementary aids, services, and other supports provided for students with disabilities and students who are English learners in the classroom and other education-related settings on a regular basis should be used, as appropriate, when administering the KRA. When determining which supports to implement with students with disabilities and students who are English learners during assessment administration, the student's instructional team members should thoroughly familiarize themselves with the student's individual learning characteristics. In selecting appropriate individualized supports to provide, it is important that the instructional team, including parents, be aware of the following considerations:

- Supports should not be assigned broadly across a particular disability category or level of English proficiency.
- Supports should be used to provide access, but not an advantage.
- Teachers and other service providers need opportunities to learn which supports are helpful during day-to-day classroom activities, including other assessment activities, prior to administering the KRA.

Section II: Differentiating Administration of the Kindergarten Readiness Assessment

This section provides information for teachers about the allowable ways to differentiate administration of the Kindergarten Readiness Assessment. First, it describes the universally designed allowances (UDAs) that are to be used, when needed, with all students. Then, it describes the decision-making processes to follow when the UDAs are not sufficient to enable students with disabilities and students who are English learners to participate in the assessment.

Universally Designed Allowances

Table 1 indicates the universally designed allowances to be used, when needed, with all students participating in the KRA. These allowances are aligned to best practices for access to instruction and assessment. They are distinguished by the following categories: Directions, Item Presentation, Student Response, Setting, and Scheduling.

***Table 1**: Kindergarten Readiness Assessment—Universally Designed Allowances for All Students*

DIRECTIONS	• Read directions aloud and repeat as many times as needed, either by request of the student or as determined by the teacher. **Important: When repeating directions, teachers should not deviate from the item's script.** • Pause while reading directions to ensure the student is attending. • Redirect the student's attention to an item or a direction.
ITEM PRESENTATION	• Provide magnification or enlargement of the test items (as many as needed). • Change the position or orientation of materials to maximize the student's visual engagement (e.g., hold the stimulus booklet at a vertical angle instead of placing it flat on a table). • Provide audio amplification for verbal directions. • Provide physical support that maintains all possible answer choices for a given item to improve visual acuity. For example, use color contrast overlay. • Allow the student to retake an item, as determined by the teacher, at any point within the test window if the teacher determines that the student's performance was not indicative of his or her typical level of functioning (e.g., due to illness).
STUDENT RESPONSE	• Allow the student to point to or verbally indicate a response for an item that asks the student to touch the correct response. • Allow the student to indicate a corrected or changed response. • Encourage a response from the student as long as the encouragement is not used as a cue.
SETTING	• Assess the student in a familiar, comfortable location in the classroom or school. • Allow the student to move and change locations during a test session. • Change the lighting. • Change the arrangement of the furniture, including allowing the student to stand during a direct assessment activity. • Provide noise buffers. • Assess in a setting with minimal visual distractions.
SCHEDULING	• Use teacher discretion for starting and stopping item and/or section administration. • Allow the student to initiate starting and stopping item and/or section administration. • Give as much time as needed to complete an item, unless otherwise indicated in the item directions. • Provide breaks as needed.

The following supports are *not* considered universally designed allowances and **should not be used** when administering the KRA:

- Simplifying language/words of the script
- Rephrasing, paraphrasing, or changing the semantics of the script
- Using more familiar terms or words than those provided in the script
- Providing visual or auditory cues not indicated in the script (e.g., claps, holding up fingers)
- Substituting or omitting words from the script (e.g., skipping over words or phrases);
- Providing clues and cues
- Asking guiding questions not contained in the script
- Covering or hiding some of the item images to eliminate answer choices
- Changing test materials in any way
- Providing information or prompts about an item beyond what is provided in the item's script

Additional Supports for Students with Disabilities

Even with the use of universally designed allowances, teachers may find it necessary to provide additional individualized supports to students with disabilities when administering the kindergarten readiness assessment. Teachers should use the decision-making process presented in Figure 2 to identify the allowable supports that may be used for a student with a disability to promote access to and participation in the assessment. The supports differ depending on whether an item is a selected response/performance task or observational rubric item.

Figure 2: *Decision-Making Process for Administering the Kindergarten Readiness Assessment to Students with Disabilities*

OPTION 1: GENERAL ADMINISTRATION		
INSTRUCTIONS FOR ASSESSMENT ADMINISTRATION	**WAS THE STUDENT ABLE TO PARTICIPATE USING THE OPTION?**	**RECORDING PERFORMANCE DATA**
Administer the item following general administration procedures and utilizing KRA universally designed allowances (see Table 1).	YES See "Recording Performance Data" NO Go to Option 2: Level the Field Supports	1. Record the student's score in Ready for Kindergarten Online. 2. Continue to the next item. *Note:* Repeated use of a particular universally designed allowance across multiple items could indicate an instructionally-relevant pattern of support needs. Record this information on the Student Details page in Ready for Kindergarten Online by clicking the Comment button within the Individualized Supports box to note any allowances that were repeatedly used.

OPTION 2: LEVEL THE FIELD SUPPORTS		
INSTRUCTIONS FOR ASSESSMENT ADMINISTRATION	**WAS THE STUDENT ABLE TO PARTICIPATE USING THE OPTION?**	**RECORDING PERFORMANCE DATA**
Administer the item following general administration procedures, but also provide one or more of the allowable Level the Field Supports listed below (beyond universally designed allowances). **SELECTED RESPONSE/ PERFORMANCE TASK ITEM** • Use braille to present item content, when appropriate. • Use sign language to administer the item to a student who is deaf or hard of hearing and uses sign language as his or her mode of communication. • Allow the student to gesture toward, touch, use eye gaze, or otherwise indicate a response through whatever dominant communication mode/language he or she utilizes, including sign language, sign language approximations, and digital language (e.g., use of augmentative communication device, allowing the student to "show" versus "tell"). **OBSERVATIONAL RUBRIC ITEM** • Do not penalize the student for the use of varied materials that allow the student to demonstrate the skill independently as stated in the item (e.g., adapted writing utensils). • The student can use any of the following modes of communication to demonstrate skills and behaviors that imply verbal or spoken language, such as items that use the words express, suggest, communicate, ask, or tell: – Sign language (including approximations). – Digital language (e.g., use of an augmentative communication device). – Gestural language (e.g., head nod, eye gaze).	YES See "Recording Performance Data" NO Go to Option 3: Not Scorable	1. On the Individual Student Details page in Ready for Kindergarten Online, click the View Supports button within the Level the Field Supports box and select the support(s) used under Student with a Disability. *Note:* The same Level the Field support may be used for multiple items, but it only needs to be recorded once within the Level the Field Supports box. 2. Record the student's score for the item. 3. Continue to the next item.

OPTION 3: NOT SCORABLE
RECORDING PERFORMANCE DATA
1. Record "Not Scorable" for the item in Ready for Kindergarten Online. 2. Use the item's comment box to explain why the item was "Not Scorable." Also, look for the skill in naturally-occurring routines and activities and record information/observations useful for instructional decision-making. 3. Continue to the next item.

DETERMINING WHEN TO PAUSE ADMINISTRATION OF A DOMAIN

When three items (not necessarily consecutive) are marked as "Not Scorable," the teacher is advised to pause administration pending a review of the remaining items in the domain by the student's instructional team. Note the difference between "Not Scorable" and a score of "0" on an item. "Not Scorable" means the teacher was not able to score the item because the child could not access it given allowable supports. A score of "0" means the child was able to access the item but did not demonstrate the skill according to the scoring criteria.

If it is determined that the student should not continue to be assessed in that domain, the remaining unanswered items should be marked as "Not Scorable" (DO NOT leave as "Needs to be Administered") in that domain.

Additional Supports for Students who are English Learners

As students who are English learners become more proficient in English, their need for supports beyond universally designed allowances will decrease. Maryland has established policies and procedures to determine the English language proficiency level of children enrolled in public schools. In collaboration with their Site Assessment Coordinator and English for speakers of other languages (ESOL) staff, teachers should use the state determinations and the information provided below to identify which students who are English learners are considered eligible to receive additional supports beyond universally designed allowances for the kindergarten readiness assessment.

- **Students with Beginning English Language Proficiency (Eligible for Additional Supports Beyond Universally Designed Allowances)** – Students at the beginning level of English language proficiency tend to have the greatest need for supports. These students may be able to respond with gestures, words, or phrases to songs, chants, or stories modeled by teachers but are able, at most, to answer questions in their native language or with only one or two words or short phrases in English.
- **Students with Intermediate English Language Proficiency (Eligible for Additional Supports Beyond Universally Designed Allowances)** – Students at the intermediate level typically have developed some proficiency in English (e.g., they are able to act out songs and stories using gestures and possibly retell short narrative stories through pictures, and they can repeat sentences from rhymes and patterned stories). If they have learned the activity in English, they may be able to access the assessment item if it is delivered in English.
- **Students with Advanced English Language Proficiency (Not Eligible for Additional Supports Beyond Universally Designed Allowances)** – Students at the advanced English language proficiency level are expected to have a decreased need for support. For example, these students are able to order pictures of events according to sequential language, arrange objects or pictures according to descriptive oral discourse, and tell original stories with emerging detail.

Please note that the results of the KRA do not identify the English learner's level of development. In order to do so, an assessment would need to be made using the student's home language. The KWAPT® created by the WIDA© Consortium is often used by ESOL teachers to assess a student's English proficiency.

Teachers should use the process presented in Figure 3 to identify the allowable supports that may be used for an eligible student who is an English learner to promote access to and participation in the assessment.

Figure 3: *Decision-Making Process for Administering the Kindergarten Readiness Assessment to Students who are English Learners*

OPTION 1: GENERAL ADMINISTRATION		
INSTRUCTIONS FOR ASSESSMENT ADMINISTRATION	**WAS THE STUDENT ABLE TO PARTICIPATE USING THE OPTION?**	**RECORDING PERFORMANCE DATA**
Administer the item following general administration procedures and utilizing KRA universally designed allowances (see Table 1).	YES See "Recording Performance Data" NO Go to Option 2: Level the Field Supports	1. Record the student's score in Ready for Kindergarten Online. 2. Continue to the next item. *Note:* Repeated use of a particular universally designed allowance across multiple items could indicate an instructionally-relevant pattern of support needs. Record this information on the Individual Student Details page in Ready for Kindergarten Online by clicking the Comment button within the Level the Field Supports box to note any allowances that were repeatedly used.
OPTION 2: LEVEL THE FIELD SUPPORTS		
INSTRUCTIONS FOR ASSESSMENT ADMINISTRATION	**WAS THE STUDENT ABLE TO PARTICIPATE USING THE OPTION?**	**RECORDING PERFORMANCE DATA**
Administer the item following general administration procedures, but also provide one or more of the allowable Level the Field Supports listed below (beyond universally designed allowances). • Consider multiple modes for demonstrating skills and behaviors if the item implies verbal or spoken language, such as observational rubric items that use the words express, suggest, communicate, ask, or tell. • Accept multiple means of expression by allowing the student to point to, gesture toward, or touch a response instead of or in addition to providing a verbalized response.	YES See "Recording Performance Data" NO Go to Option 3: Not Scorable	1. On the Individual Student Details page in Ready for Kindergarten Online, click the View Supports button within the Level the Field Supports box and select the support(s) used under English Learner. *Note:* The same Level the Field support may be used for multiple items, but it only needs to be recorded once within the Level the Field Supports box. 2. Record the student's score for the item. 3. Continue to the next item.

OPTION 3: LEVEL THE FIELD
RECORDING PERFORMANCE DATA
1. Record "Not Scorable" for the item in Ready for Kindergarten Online. 2. Use the item's comment box to explain why the item was "Not Scorable." Also, look for the skill in naturally-occurring routines and activities and record information/observations useful for instructional decision-making. 3. Continue to the next item.

DETERMINING WHEN TO PAUSE ADMINISTRATION OF A DOMAIN

When three items (not necessarily consecutive) are marked as "Not Scorable," the teacher is advised to pause administration pending a review of the remaining items in the domain by the student's instructional team. Note the difference between "No Score" and a score of "0" on an item. "Not Scorable" means the teacher was not able to score the item because the child could not access it given allowable supports. A score of "0" means the child was able to access the item but did not demonstrate the skill according to the scoring criteria.

If it is determined that the student should not continue to be assessed in that domain, the remaining unanswered items should be marked as "Not Scorable" (DO NOT leave as "Needs to be Administered") in that domain.

Kindergarten Readiness Assessment Administration Protocol

Kindergarten Readiness Assessment has features in printed English and in cases where young deaf/hard of hearing children are not yet reading, American Sign Language (ASL) accommodation by a human signer for KRA is provided. Human signers who provide ASL accommodation must follow these procedures during KRA testing to ensure the standardization of the ASL presentation of the assessments.

Procedures for ASL Human Signers Providing the Human Signer Accommodation for Kindergarten Readiness Assessment:

1. Human ASL signers must be trained in the KRA administration, pass the content assessment, simulator, and then sign the Test Security Agreement provided by the LEA.
2. Human ASL signers should use conceptually accurate signs, with or without simultaneous voicing, signing only what is printed in the test book or on the computer screen without changing, emphasizing, or adding words.
3. Human ASL signers may not clarify (except for test directions), provide additional information, assist, or influence the student's selection of a response in any way.
4. Human ASL signers must use the same signs if the student requests a portion repeated.
5. Human ASL signers should be provided a copy of the test, DVD of conceptually accurate sign language vocabulary of all items in KRA, and the examiner's directions two schools days prior to the start of testing, in order to become familiar with the words, terms, symbols, signs, and/or graphics that will be read aloud to the student.
6. Human ASL signers may repeat passages, test items, and response options, as requested, according to the needs of the student. Signers should not rush through the test and should ask the student if they are ready to move to the next item.
7. Human ASL signers may not attempt to solve or answer any of the KRA problems, or determine the correct answer to a test item while signing.
8. Human ASL signers must use facial expressions consistent with sign language delivery and must not use expressions which may be interpreted by the student as approval or disapproval of the student's answers.
9. Human ASL signers must pause for few seconds before signing the answer options.

10. If a human ASL signer is unsure how to sign and/or pronounce an unfamiliar word, advise the student of the uncertainty and spell the word.
11. When using a sign that can represent more than one word, the human ASL signer may spell the word after signing it, if there is any doubt about which word is intended.
12. Human ASL signers must spell any words requested by the student.
14. When test items refer to a particular iPad or technology related movement, or directions of a passage, human ASL signers must note the lines or directions before signing the question and answer choices.
15. When signing selected response items, human ASL signers must be careful to give equal stress to each response option and to sign all of them before waiting for a response.
19. Human ASL signers should refer to the KRA/ELA ASL Glossary for KRA words and technical vocabulary for consistency in providing the accommodation.
20. Human ASL signer must be familiar with the student's IEP or 504 plan, and should know in advance which accommodations are required by the student.

GLOSSARY

Assessment: A systematic procedure/process for obtaining information from observation, interviews, portfolios, projects, tests, and other sources that can be used to make judgments about children's characteristics.

English learners: These are children whose primary or home language is one other than English and who cannot perform ordinary classroom activities in English, because they may have limited or no age-appropriate ability to understand or speak in English. Children who are English learners have traditionally been called limited English proficient (LEP) children. In the Early Childhood/ Early Learner field, the term dual language learner (DLL) is also used.

Guidelines: A description of suggested elements intended to accomplish a defined activity.

Performance: Describes behaviors exhibited while putting specific skills into action.

Reliability: The consistency of the results obtained from using an assessment tool (being free of error) is important for generalizing about children's learning and development. Reliability is represented by a figure between 0 and 1, such that values closer to 1.0 indicate better reliability.

Skill: This describes the ability of a child to use knowledge effectively and readily in performance (i.e., the ability to transform knowledge into action).

Student with a disability: This is a student with an Individualized Education Program (IEP) or a Section 504 plan.

Validity: This describes the extent to which a measure or assessment tool evaluates what it was designed to evaluate. This is represented by a figure between .00 and 1.0, such that values closer to 1.0 indicate better validity.

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Ohio Ready for Kindergarten Assessments:

Guidelines on Allowable Supports for the Kindergarten Readiness Assessment

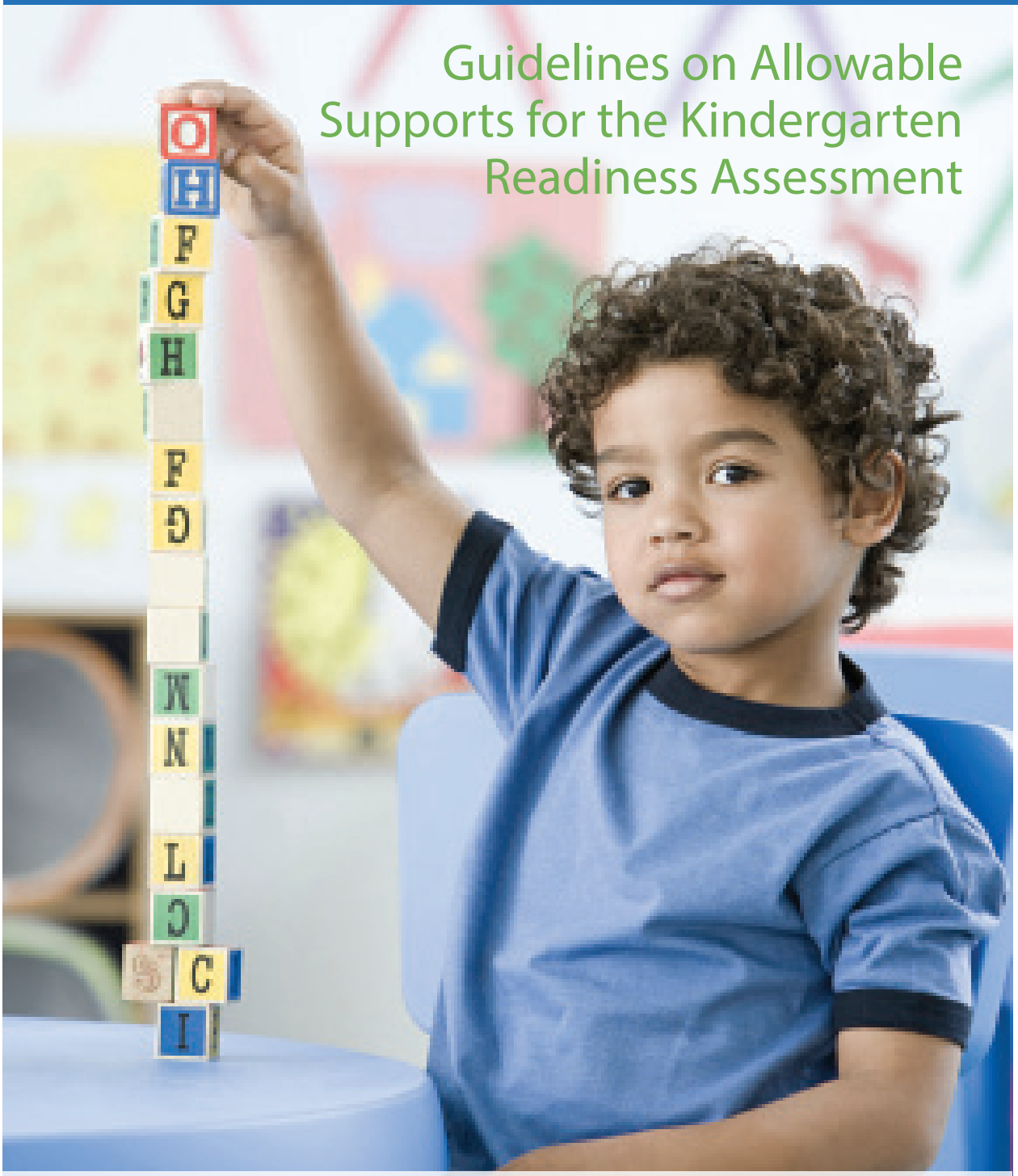

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Table of Contents

Section I: Overview

Ready for Kindergarten: Ohio's Early Childhood Comprehensive Assessment System was created with Race to the Top Early Learning Challenge Grant funding awarded in December 2011. The assessment system is aligned to the state's guidelines and standards for young children, birth through age 6, including the Ohio Learning Standards. In addition to the conducting routine developmental screening using state-recommended instruments, the Ready for Kindergarten system involves the administration of two types of classroom-based assessments: (1) Early Learning Assessment (ELA) for use throughout the school year for children ages three through kindergarten; and (2) Kindergarten Readiness Assessment (KRA) for use during the first several weeks of a student's kindergarten school year. This document addresses the scope of the administration of the KRA. The guidelines were developed using feedback from teachers, as well as input from state and national experts. The supports and strategies outlined in this document are intended to maximize the participation of all students in the KRA.

Participation Requirements

All students, including students with disabilities and students who are English learners, are required to participate in the KRA and have their results be part of the state's summary reports. A fully accessible approach to assessment design and implementation is necessary for students with diverse learning characteristics to ensure that they have the opportunity to demonstrate their knowledge and skills. At the same time, states need to be confident in the results obtained from the assessments when conducting analyses and making policy decisions. In addition, school administrators, teachers, and parents need to have a true sense of where their students are developmentally, and subsequently identify focus areas in which they can plan instruction that promotes growth in individual students. To meet all of these needs, a structured decision-making process has been developed for identifying and implementing individualized student supports when administering the KRA.

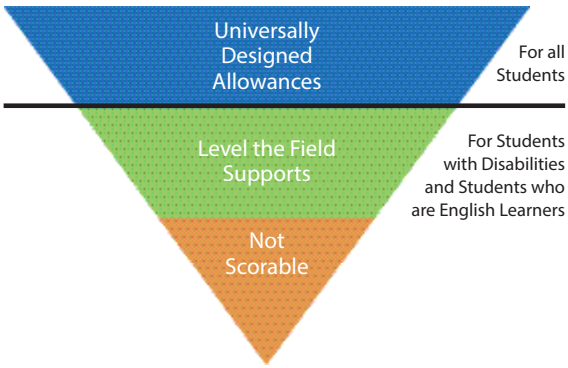
For the Kindergarten Readiness Assessment:

- A student with a disability is defined as a student with an Individualized Education Program (IEP) or a Section 504 plan.
- A student who is an English learner is defined as a student whose primary or home language is one other than English and who cannot perform some or all classroom activities in English because he or she may have limited or no age appropriate ability to understand or speak in English.

Differentiating Assessment Administration

Expectations have been established for students participating in the KRA with consideration for their unique developmental needs and levels of school readiness. A tiered decision-making process has been developed for differentiating administration of the assessment (see Figure 1). This process begins with utilizing universally designed allowances (UDAs), which are supports that are appropriate to provide to all students. When further individualization is needed for students with disabilities and students who are English learners, the process outlines additional allowable supports and administration procedures.

Figure 1: Differentiating Administration of the Ready for Kindergarten Assessments



This decision-making process for differentiating administration of the KRA uses the following options:

- General Administration – This is the administration of the KRA following General Administration procedures (applicable to the particular assessment) and applying universally designed allowances.
- Level the Field supports (for students with disabilities and students who are English learners only) – This involves administering the KRA following general administration procedures, but providing additional

allowable individualized supports above and beyond universally designed allowances.

- Not Scorable (for students with disabilities and students who are English learners only) – Some assessment activities may not be within a student's abilities given any allowable support. In other words, the skill being assessed may not be appropriate given the student's disability or level of English language proficiency. Therefore, the skill is considered "Not Scorable."

When administering the KRA, teachers do not need to move sequentially through these three options for students with disabilities and English learners. For example, they can start administration using the Level the Field option. Teams should, however, avoid assuming that a student with a disability or a student who is an English learner needs to automatically move beyond General Administration.

General Administration with Universally Designed Allowances

Universal design describes a framework for curriculum design, instructional processes, and assessments that provides all students with equal opportunities to learn and to demonstrate what they have learned (CAST, 2013; PARCC, 2014; Ray, Aguinaga, & Bigler, 2010). In general, the impetus behind universal design is to provide access to the greatest number of students during instruction and assessment. This, in turn, minimizes the need for accommodations or changes. Universal design benefits all learners, as it incorporates flexibility to meet the diverse needs of a wide range of students. It is particularly advantageous when variability—both within a student's developmental profile and in comparison to others—is common.

Level the Field Supports

> Applied to the Ready for Kindergarten assessments, universally designed allowances encompass the range of actions, material presentations, procedures, and settings that are acceptable for use with all students.

Level the Field supports are individualized supports only for students with disabilities and students who are English learners. They are provided in addition to universally designed allowances, when needed. Level the Field supports are designed to provide equal access and opportunity for participation in the KRA without substantially altering what a student is expected to do. These supports are intended to reduce or even eliminate the effects of a student's disability or limited English proficiency (Bagnato, Neisworth, & Pretti-Frontczak, 2010). To be effective, these supports must address the unique needs of the student for whom they are provided and should assist the student in overcoming the educational barriers that prevent him or her from demonstrating his or her true knowledge and skills. Providing a student with Level the Field supports yields scores on the KRA that are as valid and reliable as they would be if General Administration (with universally designed allowances) procedures were used.

Using the "Not Scorable" Option

For students with disabilities and students who are English learners only, an item or skill on the KRA may be marked as "Not Scorable" when the assessment activity it is not accessible to the student even with universal designed allowances (UDAs) and Level the Fields supports. In other words, the skill being assessed is not appropriate given the characteristics of the student's disability or level of English proficiency. Students that receive "Not Scorable" may not receive an overall performance profile on the KRA assessment, but will receive a score for each domain that did not have more than a designated number of items marked "Not Scorable." In addition, the student's results related to the skill are not included in the school, district, or state aggregate data. If a student receives "Not Scorable" for three items (not necessarily three consecutive items), the administration of that domain is paused. In such cases, the test administrator should review the decision-making process. Please refer to the appropriate chart (Figures 2 or 3) in this document or the Quick Guides.

Team-Based Decision-Making

Teachers administering the KRA to students with disabilities and students who are English learners should collaborate with the student's instructional team (e.g., special educator, English for speakers of other languages [ESOL] staff, parents) to identify needed supports. School/program staff members on the instructional team should familiarize themselves with assessment materials ahead of time so they are able to discuss the allowable supports that should be used during administration. Below are some questions team members may want to consider when reviewing the

assessment:

- Is the assessment task similar to other classroom tasks and activities in which the student has experience participating, or will the student have the opportunity to practice similar tasks prior to administering the item?
- Do we provide individualized supports, such as those indicated in the student's IEP or Section 504 plan, for a classroom task that is similar to the item?
- Are there barriers to participation in the assessment activities that could be removed by implementing a support that is not already in place for the student in the classroom?

The supplementary aids, services, and other supports provided for students with disabilities and students who are English learners in the classroom and other education-related settings on a regular basis should be used, as appropriate, when administering the KRA. When determining which supports to implement with students with disabilities and students who are English learners during assessment administration, the student's instructional team members should thoroughly familiarize themselves with the student's individual learning characteristics. In selecting appropriate individualized supports to provide, it is important that the instructional team, including parents, be aware of the following considerations:

- Supports should not be assigned broadly across a particular disability category or level of English proficiency.
- Supports should be used to provide access, but not an advantage.
- Teachers and other service providers need opportunities to learn which supports are helpful during day-to-day classroom activities, including other assessment activities, prior to administering the KRA.

Section II: Differentiating Administration of the Kindergarten Readiness Assessment

This section provides information for teachers about the allowable ways to differentiate administration of the Kindergarten Readiness Assessment. First, it describes the universally designed allowances (UDAs) that are to be used, when needed, with all students. Then, it describes the decision-making processes to follow when the UDAs are not sufficient to enable students with disabilities and students who are English learners to participate in the assessment.

Universally Designed Allowances

Table 1 indicates the universally designed allowances to be used, when needed, with all students participating in the KRA. These allowances are aligned to best practices for access to instruction and assessment. They are distinguished by the following categories: Directions, Item Presentation, Student Response, Setting, and Scheduling.

Table 1: Kindergarten Readiness Assessment—Universally Designed Allowances for All Students

DIRECTIONS	• Read directions aloud and repeat as many times as needed, either by request of the student or as determined by the teacher. Important: When repeating directions, teachers should not deviate from the item's script. • Pause while reading directions to ensure the student is attending. • Redirect the student's attention to an item or a direction.
ITEM PRESENTATION	• Provide magnification or enlargement of the test items (as many as needed). • Change the position or orientation of materials to maximize the student's visual engagement (e.g., hold the stimulus booklet at a vertical angle instead of placing it flat on a table). • Provide audio amplification for verbal directions. • Provide physical support that maintains all possible answer choices for a given item to improve visual acuity. For example, use color contrast overlay. • Allow the student to retake an item, as determined by the teacher, at any point within the test window if the teacher determines that the student's performance was not indicative of his or her typical level of functioning (e.g., due to illness).
STUDENT RESPONSE	• Allow the student to point to or verbally indicate a response for an item that asks the student to touch the correct response. • Allow the student to indicate a corrected or changed response. • Encourage a response from the student as long as the encouragement is not used as a cue.
SETTING	• Assess the student in a familiar, comfortable location in the classroom or school. • Allow the student to move and change locations during a test session. • Change the lighting. • Change the arrangement of the furniture, including allowing the student to stand during a direct assessment activity. • Provide noise buffers. • Assess in a setting with minimal visual distractions.
SCHEDULING	• Use teacher discretion for starting and stopping item and/or section administration. • Allow the student to initiate starting and stopping item and/or section administration. • Give as much time as needed to complete an item, unless otherwise indicated in the item directions. • Provide breaks as needed.

The following supports are not considered universally designed allowances and should not be used when administering the KRA:

- Simplifying language/words of the script
- Rephrasing, paraphrasing, or changing the semantics of the script
- Using more familiar terms or words than those provided in the script
- Providing visual or auditory cues not indicated in the script (e.g., claps, holding up fingers)
- Substituting or omitting words from the script (e.g., skipping over words or phrases);
- Providing clues and cues
- Asking guiding questions not contained in the script
- Covering or hiding some of the item images to eliminate answer choices
- Changing test materials in any way
- Providing information or prompts about an item beyond what is provided in the item's script

Additional Supports for Students with Disabilities

Even with the use of universally designed allowances, teachers may find it necessary to provide additional individualized supports to students with disabilities when administering the kindergarten readiness assessment. Teachers should use the decision-making process presented in Figure 2 to identify the allowable supports that may be used for a student with a disability to promote access to and participation in the assessment. The supports differ depending on whether an item is a selected response/performance task or observational rubric item.

Figure 2: Decision-Making Process for Administering the Kindergarten Readiness Assessment to Students with Disabilities

OPTION 1: GENERAL ADMINISTRATION		
INSTRUCTIONS FOR ASSESSMENT ADMINISTRATION	WAS THE STUDENT ABLE TO PARTICIPATE USING THE OPTION?	RECORDING PERFORMANCE DATA
Administer the item following general administration procedures and utilizing KRA universally designed allowances (see Table 1).	YES See "Recording Performance Data" NO Go to Option 2: Level the Field Supports	1. Record the student's score in Ready for Kindergarten Online. 2. Continue to the next item. Note: Repeated use of a particular universally designed allowance across multiple items could indicate an instructionally-relevant pattern of support needs. Record this information on the Student Details page in Ready for Kindergarten Online by clicking the Comment button within the Individualized Supports box to note any allowances that were repeatedly used.

OPTION 2: LEVEL THE FIELD SUPPORTS		
INSTRUCTIONS FOR ASSESSMENT ADMINISTRATION	WAS THE STUDENT ABLE TO PARTICIPATE USING THE OPTION?	RECORDING PERFORMANCE DATA
Administer the item following general administration procedures, but also provide one or more of the allowable Level the Field Supports listed below (beyond universally designed allowances). SELECTED RESPONSE/ PERFORMANCE TASK ITEM • Use braille to present item content, when appropriate. • Use sign language to administer the item to a student who is deaf or hard of hearing and uses sign language as his or her mode of communication. • Allow the student to gesture toward, touch, use eye gaze, or otherwise indicate a response through whatever dominant communication mode/language he or she utilizes, including sign language, sign language approximations, and digital language (e.g., use of augmentative communication device, allowing the student to "show" versus "tell"). OBSERVATIONAL RUBRIC ITEM • Do not penalize the student for the use of varied materials that allow the student to demonstrate the skill independently as stated in the item (e.g., adapted writing utensils). • The student can use any of the following modes of communication to demonstrate skills and behaviors that imply verbal or spoken language, such as items that use the words express, suggest, communicate, ask, or tell: – Sign language (including approximations). – Digital language (e.g., use of an augmentative communication device). – Gestural language (e.g., head nod, eye gaze).	 See "Recording Performance Data"  Go to Option 3: Not Scorable	1. On the Individual Student Details page in Ready for Kindergarten Online, click the View Supports button within the Level the Field Supports box and select the support(s) used under Student with a Disability. Note: The same Level the Field support may be used for multiple items, but it only needs to be recorded once within the Level the Field Supports box. 2. Record the student's score for the item. 3. Continue to the next item.

OPTION 3: NOT SCORABLE
RECORDING PERFORMANCE DATA
1. Record "Not Scorable" for the item in Ready for Kindergarten Online. 2. Use the item's comment box to explain why the item was "Not Scorable." Also, look for the skill in naturally-occurring routines and activities and record information/observations useful for instructional decision-making. 3. Continue to the next item.

DETERMINING WHEN TO PAUSE ADMINISTRATION OF A DOMAIN

When three items (not necessarily consecutive) are marked as "Not Scorable," the teacher is advised to pause administration pending a review of the remaining items in the domain by the student's instructional team. Note the difference between "Not Scorable" and a score of "0" on an item. "Not Scorable" means the teacher was not able to score the item because the child could not access it given allowable supports. A score of "0" means the child was able to access the item but did not demonstrate the skill according to the scoring criteria.

If it is determined that the student should not continue to be assessed in that domain, the remaining unanswered items should be marked as "Not Scorable" (DO NOT leave as "Needs to be Administered") in that domain.

Additional Supports for Students who are English Learners

As students who are English learners become more proficient in English, their need for supports beyond universally designed allowances will decrease. Ohio has established policies and procedures to determine the English language proficiency level of children enrolled in public schools. In collaboration with their District Testing Coordinator and English for speakers of other languages (ESOL) staff, teachers should use the state determinations and the information provided below to identify which students who are English learners are considered eligible to receive additional supports beyond universally designed allowances for the kindergarten readiness assessment.

- Students with Beginning English Language Proficiency (Eligible for Additional Supports Beyond Universally Designed Allowances) – Students at the beginning level of English language proficiency tend to have the greatest need for supports. These students may be able to respond with gestures, words, or phrases to songs, chants, or stories modeled by teachers but are able, at most, to answer questions in their native language or with only one or two words or short phrases in English.
- Students with Intermediate English Language Proficiency (Eligible for Additional Supports Beyond Universally Designed Allowances) – Students at the intermediate level typically have developed some proficiency in English (e.g., they are able to act out songs and stories using gestures and possibly retell short narrative stories through pictures, and they can repeat sentences from rhymes and patterned stories). If they have learned the activity in English, they may be able to access the assessment item if it is delivered in English.
- Students with Advanced English Language Proficiency (Not Eligible for Additional Supports Beyond Universally Designed Allowances) – Students at the advanced English language proficiency level are expected to have a decreased need for support. For example, these students are able to order pictures of events according to sequential language, arrange objects or pictures according to descriptive oral discourse, and tell original stories with emerging detail.

Please note that the results of the KRA do not identify the English learner's level of language development. However, Ohio's English Lanuage Proficiency Assessments (ELPA) are used to determine the English learner's level of language development and progress toward English proficiency.

Teachers should use the process presented in Figure 3 to identify the allowable supports that may be used for an eligible student who is an English learner to promote access to and participation in the assessment.

Figure 3: Decision-Making Process for Administering the Kindergarten Readiness Assessment to Students who are English Learners

OPTION 1: GENERAL ADMINISTRATION		
INSTRUCTIONS FOR ASSESSMENT ADMINISTRATION	**WAS THE STUDENT ABLE TO PARTICIPATE USING THE OPTION?**	**RECORDING PERFORMANCE DATA**
Administer the item following general administration procedures and utilizing KRA universally designed allowances (see Table 1).	YES See "Recording Performance Data" NO Go to Option 2: Level the Field Supports	1. Record the student's score in Ready for Kindergarten Online. 2. Continue to the next item. Note: Repeated use of a particular universally designed allowance across multiple items could indicate an instructionally-relevant pattern of support needs. Record this information on the Individual Student Details page in Ready for Kindergarten Online by clicking the Comment button within the Level the Field Supports box to note any allowances that were repeatedly used.
OPTION 2: LEVEL THE FIELD SUPPORTS		
INSTRUCTIONS FOR ASSESSMENT ADMINISTRATION	**WAS THE STUDENT ABLE TO PARTICIPATE USING THE OPTION?**	**RECORDING PERFORMANCE DATA**
Administer the item following general administration procedures, but also provide one or more of the allowable Level the Field Supports listed below (beyond universally designed allowances). • Consider multiple modes for demonstrating skills and behaviors if the item implies verbal or spoken language, such as observational rubric items that use the words express, suggest, communicate, ask, or tell. • Accept multiple means of expression by allowing the student to point to, gesture toward, or touch a response instead of or in addition to providing a verbalized response.	YES See "Recording Performance Data" NO Go to Option 3: Not Scorable	1. On the Individual Student Details page in Ready for Kindergarten Online, click the View Supports button within the Level the Field Supports box and select the support(s) used under English Learner. Note: The same Level the Field support may be used for multiple items, but it only needs to be recorded once within the Level the Field Supports box. 2. Record the student's score for the item. 3. Continue to the next item.

OPTION 3: LEVEL THE FIELD
RECORDING PERFORMANCE DATA
1. Record "Not Scorable" for the item in Ready for Kindergarten Online. 2. Use the item's comment box to explain why the item was "Not Scorable." Also, look for the skill in naturally-occurring routines and activities and record information/observations useful for instructional decision-making. 3. Continue to the next item.

DETERMINING WHEN TO PAUSE ADMINISTRATION OF A DOMAIN

When three items (not necessarily consecutive) are marked as "Not Scorable," the teacher is advised to pause administration pending a review of the remaining items in the domain by the student's instructional team. Note the difference between "No Score" and a score of "0" on an item. "Not Scorable" means the teacher was not able to score the item because the child could not access it given allowable supports. A score of "0" means the child was able to access the item but did not demonstrate the skill according to the scoring criteria.

If it is determined that the student should not continue to be assessed in that domain, the remaining unanswered items should be marked as "Not Scorable" (DO NOT leave as "Needs to be Administered") in that domain.

Kindergarten Readiness Assessment Administration Protocol

Kindergarten Readiness Assessment has features in printed English and in cases where young deaf/hard of hearing children are not yet reading, American Sign Language (ASL) accommodation by a human signer for KRA is provided. Human signers who provide ASL accommodation must follow these procedures during KRA testing to ensure the standardization of the ASL presentation of the assessments.

Procedures for ASL Human Signers Providing the Human Signer Accommodation for Kindergarten Readiness Assessment:

1. Human ASL signers must be trained in the KRA administration, pass the content assessment, simulator, and then sign the Test Security Agreement provided by the LEA.
2. Human ASL signers should use conceptually accurate signs, with or without simultaneous voicing, signing only what is printed in the test book or on the computer screen without changing, emphasizing, or adding words.
3. Human ASL signers may not clarify (except for test directions), provide additional information, assist, or influence the student's selection of a response in any way.
4. Human ASL signers must use the same signs if the student requests a portion repeated.
5. Human ASL signers should be provided a copy of the test, DVD of conceptually accurate sign language vocabulary of all items in KRA, and the examiner's directions two schools days prior to the start of testing, in order to become familiar with the words, terms, symbols, signs, and/or graphics that will be read aloud to the student.
6. Human ASL signers may repeat passages, test items, and response options, as requested, according to the needs of the student. Signers should not rush through the test and should ask the student if they are ready to move to the next item.
7. Human ASL signers may not attempt to solve or answer any of the KRA problems, or determine the correct answer to a test item while signing.
8. Human ASL signers must use facial expressions consistent with sign language delivery and must not use expressions which may be interpreted by the student as approval or disapproval of the student's answers.
9. Human ASL signers must pause for few seconds before signing the answer options.

10. If a human ASL signer is unsure how to sign and/or pronounce an unfamiliar word, advise the student of the uncertainty and spell the word.
11. When using a sign that can represent more than one word, the human ASL signer may spell the word after signing it, if there is any doubt about which word is intended.
12. Human ASL signers must spell any words requested by the student.
14. When test items refer to a particular iPad or technology related movement, or directions of a passage, human ASL signers must note the lines or directions before signing the question and answer choices.
15. When signing selected response items, human ASL signers must be careful to give equal stress to each response option and to sign all of them before waiting for a response.
19. Human ASL signers should refer to the KRA/ELA ASL Glossary for KRA words and technical vocabulary for consistency in providing the accommodation.
20. Human ASL signer must be familiar with the student's IEP or 504 plan, and should know in advance which accommodations are required by the student.

GLOSSARY

Assessment: A systematic procedure/process for obtaining information from observation, interviews, portfolios, projects, tests, and other sources that can be used to make judgments about children's characteristics.

English learners: These are children whose primary or home language is one other than English and who cannot perform ordinary classroom activities in English, because they may have limited or no age-appropriate ability to understand or speak in English. Children who are English learners have traditionally been called limited English proficient (LEP) children. In the Early Childhood/ Early Learner field, the term dual language learner (DLL) is also used.

Guidelines: A description of suggested elements intended to accomplish a defined activity.

Performance: Describes behaviors exhibited while putting specific skills into action.

Reliability: The consistency of the results obtained from using an assessment tool (being free of error) is important for generalizing about children's learning and development. Reliability is represented by a figure between 0 and 1, such that values closer to 1.0 indicate better reliability.

Skill: This describes the ability of a child to use knowledge effectively and readily in performance (i.e., the ability to transform knowledge into action).

Student with a disability: This is a student with an Individualized Education Program (IEP) or a Section 504 plan.

Validity: This describes the extent to which a measure or assessment tool evaluates what it was designed to evaluate. This is represented by a figure between .00 and 1.0, such that values closer to 1.0 indicate better validity.

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Appendix I: Census—Item-Level Classical Statistics

Item Code	Type	Max	M	SD	Difficulty (*p*-value)	Disc. (Item-Rest) KRA 1.0	Disc. (Item-Rest) KRA 1.5	Students at Score Point (%)					N = 199,964	
								Number of Scored Responses	0	1	2	3	Not Scorable (%)	Missing (%)
LL.1.1.A_H101	SR	1	0.93	0.25	0.93	0.27	0.27	189995	6.86	93.14			0.58	4.41
LL.1.1.B_H104	SR	1	0.95	0.22	0.95	0.29	0.30	189937	5.27	94.72			0.57	4.45
LL.1.1.C_H106-R	PT	3	1.79	1.05	0.60	0.45	0.45	189650	15.71	21.04	31.64	31.62	0.69	4.47
LL.1.2.A_A163	SR	1	0.62	0.49	0.62	0.31	0.32	189846	37.93	62.07			0.59	4.47
LL.1.2.B_A164	PT	3	1.70	1.05	0.57	0.27	0.28	189740	18.97	18.22	36.66	26.16	0.63	4.49
LL.1.2.D_A127	SR	1	0.69	0.46	0.69	0.42	0.43	189874	31.44	68.56			0.58	4.46
LL.1.2.D_A180	SR	1	0.69	0.46	0.69	0.29	0.30	189847	30.54	69.46			0.59	4.47
LL.1.3.B_A130	PT	2	1.20	0.80	0.60	0.50	0.52	189755	23.96	32.54	43.49		0.60	4.50
LL.1.3.C_A132	PT	3	2.07	1.07	0.69	0.53	0.55	189909	12.53	15.82	23.64	48.01	0.55	4.48
LL.2.1.A_OR_19	OR	2	1.50	0.65	0.75	0.62	0.61	189307	8.50	32.52	58.98		0.47	4.86
LL.2.1.B_OR_20	OR	2	1.49	0.67	0.75	0.66	0.64	189282	9.68	31.87	58.45		0.49	4.85
LL.3.1.A_A134	PT	2	1.73	0.55	0.87	0.53	0.55	189903	5.34	15.92	78.74		0.50	4.53
LL.3.1.B_A136	PT	2	1.82	0.47	0.91	0.47	0.48	189940	3.68	11.06	85.26		0.50	4.51
LL.4.1.A_A155	PT	3	2.71	0.57	0.90	0.46	0.47	190012	1.07	2.85	20.48	75.60	0.66	4.32
LL.4.1.A_A195	PT	3	2.54	0.67	0.85	0.44	0.45	189913	1.75	4.53	31.91	61.81	0.65	4.37
LL.4.1.D_A160	PT	3	2.66	0.70	0.89	0.50	0.51	190008	2.05	7.26	13.70	77.00	0.59	4.39
LL.4.2.B_H103-R	SR	1	0.69	0.46	0.69	0.30	0.30	189950	31.34	68.66			0.59	4.42
MA.1.1.A_A101	PT	3	2.33	0.97	0.78	0.55	0.57	189496	5.64	19.18	12.02	63.16	0.54	4.69
MA.1.1.C_A104	PT	3	2.11	0.87	0.70	0.51	0.52	189435	5.56	16.26	40.22	37.97	0.50	4.77
MA.1.1.D_A121	PT	2	1.85	0.44	0.93	0.36	0.38	189412	3.21	8.98	87.80		0.53	4.75
MA.1.1.F_A115	PT	1	0.84	0.36	0.84	0.36	0.37	189448	15.60	84.40			0.53	4.73
MA.1.1.G_A117	PT	3	2.11	1.10	0.70	0.48	0.50	189484	13.83	13.78	19.77	52.62	0.49	4.75
MA.2.1.B_A138	PT	1	0.49	0.50	0.49	0.33	0.34	189543	51.23	48.77			0.48	4.73
MA.3.1.B_A123	PT	2	1.53	0.82	0.77	0.29	0.30	189567	21.10	4.74	74.15		0.48	4.71
MA.3.1.D_A143	SR	1	0.86	0.35	0.86	0.32	0.33	189550	14.43	85.57			0.47	4.73
MA.3.1.D_A147	SR	1	0.58	0.49	0.58	0.45	0.46	189423	41.66	58.34			0.48	4.79
MA.3.1.D_A149	SR	1	0.56	0.50	0.56	0.28	0.29	189502	43.67	56.33			0.49	4.74

Note: Percentages for Students at Score Point are based on the number of scored responses. Percentages for Not Scorable and Missing are based on the total population (N = 199,964).

Item Code	Type	Max	M	SD	Difficulty (*p*-value)	Disc. (Item-Rest) KRA 1.0	Disc. (Item-Rest) KRA 1.5	Students at Score Point (%)					N = 199,964	
								Number of Scored Responses	0	1	2	3	Not Scorable (%)	Missing (%)
MA.3.2.A_A152	PT	2	1.64	0.60	0.82	0.43	0.44	189606	6.82	22.02	71.16		0.49	4.69
MA.3.2.B_A174	PT	1	0.46	0.50	0.46	0.37	0.38	189480	54.26	45.74			0.50	4.74
MA.4.1.A_A177	PT	2	1.49	0.62	0.75	0.22	0.23	189701	6.47	38.56	54.97		0.45	4.68
MA.4.1.B_A191	PT	2	1.53	0.64	0.77	0.47	0.49	189296	8.01	31.07	60.92		0.56	4.77
PD.1.1.A_OR_01	OR	2	1.73	0.53	0.87	0.48	0.46	189257	4.27	17.98	77.76		0.39	4.96
PD.1.1.B_OR_05	OR	2	1.71	0.55	0.86	0.45	0.44	188830	4.99	19.43	75.58		0.42	5.14
PD.1.2.B_OR_06	OR	2	1.59	0.62	0.80	0.55	0.55	189181	7.01	26.91	66.08		0.40	4.99
PD.1.2.C_OR_08	OR	2	1.66	0.57	0.83	0.51	0.50	189171	5.18	24.01	70.82		0.37	5.03
PD.2.1.A_OR_10	OR	2	1.65	0.57	0.83	0.51	0.48	189170	4.93	25.54	69.53		0.37	5.03
PD.2.1.B_OR_09	OR	2	1.52	0.64	0.76	0.64	0.62	188892	8.00	32.02	59.97		0.48	5.06
PD.2.2.A_OR_15	OR	2	1.72	0.51	0.86	0.51	0.50	189232	2.73	22.31	74.96		0.38	4.99
SC.1.1.A_OR_25	OR	2	1.49	0.63	0.75	0.61	0.58	188995	7.38	36.42	56.20		0.42	5.06
SF.1.1.B_OR_35	OR	2	1.54	0.63	0.77	0.61	0.58	189651	7.37	30.77	61.86		0.45	4.70
SF.1.2.B_OR_42	OR	2	1.43	0.66	0.72	0.63	0.60	189572	9.35	38.61	52.04		0.44	4.76
SF.1.2.C_OR_43	OR	2	1.62	0.59	0.81	0.62	0.59	189527	5.92	26.38	67.70		0.43	4.79
SF.2.1.C_OR_49	OR	2	1.61	0.60	0.81	0.48	0.45	189466	6.14	26.86	67.00		0.38	4.87
SF.2.2.B_OR_55	OR	2	1.25	0.69	0.63	0.60	0.57	189397	14.60	45.32	40.08		0.38	4.90
SF.2.3.A_OR_58	OR	2	1.34	0.70	0.67	0.70	0.67	189214	13.04	39.94	47.02		0.39	4.98
SF.2.3.C_OR_12	OR	2	1.19	0.72	0.60	0.68	0.65	189124	17.99	45.26	36.75		0.39	5.03
SF.2.5.A_OR_64	OR	2	1.37	0.66	0.69	0.65	0.62	189123	10.07	43.28	46.65		0.41	5.01
SF.2.6.B_OR_68	OR	2	1.56	0.60	0.78	0.58	0.56	189223	5.59	33.26	61.15		0.39	4.98
SF.2.6.D_OR_69	OR	2	1.69	0.55	0.85	0.51	0.48	189224	4.23	22.72	73.05		0.37	5.00
SS.1.1.B_OR_32	OR	2	1.58	0.62	0.79	0.65	0.64	188833	7.20	27.97	64.83		0.50	5.07

Note: Percentages for Students at Score Point are based on the number of scored responses. Percentages for Not Scorable and Missing are based on the total population (N = 199,964).

Item Code	Type	Max	M	SD	Difficulty (*p*-value)	Disc. (Item-Rest) KRA 1.0	Disc. (Item-Rest) KRA 1.5	Students at Score Point (%)					N = 199,964	
								Number of Scored Responses	0	1	2	3	Not Scorable (%)	Missing (%)
Items Removed (Not Included on KRA 1.5)														
LL.1.2.A_A128	SR	1	0.35	0.48	0.35	0.20	---	189822	65.46	34.54			0.58	4.49
LL.4.1.B_A157	PT	2	1.53	0.62	0.77	0.32	---	189767	6.85	33.71	59.43		0.63	4.47
LL.4.2.A_OR_22	OR	2	1.28	0.73	0.64	0.66	---	189171	16.64	38.97	44.39		0.53	4.87
MA.2.1.C_A200	PT	1	0.15	0.35	0.15	0.16	---	189375	85.48	14.52			0.51	4.79
SC.1.1.B_A109	SR	1	0.71	0.45	0.71	0.19	---	189417	28.78	71.22			0.49	4.79
SC.1.1.B_A110	SR	1	0.61	0.49	0.61	0.15	---	189405	38.92	61.08			0.47	4.81
SF.1.1.C_OR_39	OR	2	1.53	0.65	0.77	0.63	---	189579	8.77	29.73	61.50		0.43	4.76
SF.1.3.A_OR_45	OR	2	1.40	0.66	0.70	0.58	---	189432	9.68	40.62	49.70		0.45	4.81
SF.2.1.A_OR_48	OR	2	1.52	0.65	0.76	0.58	---	189422	8.56	31.06	60.38		0.44	4.83
SF.2.2.A_OR_51	OR	2	1.39	0.64	0.70	0.64	---	189421	8.76	43.68	47.57		0.39	4.88
SF.2.4.B_OR_62	OR	2	1.23	0.63	0.62	0.66	---	189138	11.23	54.33	34.44		0.40	5.02
SF.2.5.D_OR_65	OR	2	1.45	0.66	0.73	0.66	---	189320	9.36	36.64	54.00		0.38	4.94
SS.2.1.A_OR_34	OR	2	1.34	0.71	0.67	0.65	---	188659	13.97	37.81	48.22		0.52	5.13

Note: Percentages for Students at Score Point are based on the number of scored responses. Percentages for Not Scorable and Missing are based on the total population (N = 199,964).

Appendix J: Factor Analysis—Item Loadings

Item ID	Factor Loadings			
	Factor 1	Factor 2	Factor 3	Factor 4
LL.2.1.A_OR_19	0.90			
SC.1.1.A_OR_25	0.88			
LL.2.1.B_OR_20	0.81			
SF.2.5.A_OR_64	0.70			
SF.2.6.B_OR_68	0.69			
SF.1.1.B_OR_35	0.68			
SF.1.2.C_OR_43	0.67			
PD.2.1.B_OR_09	0.64			
SF.1.2.B_OR_42	0.63			
SS.1.1.B_OR_32	0.60			
SF.2.3.C_OR_12	0.59			
SF.2.1.C_OR_49		0.96		
PD.2.1.A_OR_10		0.85		
SF.2.6.D_OR_69		0.79		
PD.1.1.A_OR_01		0.75		
SF.2.2.B_OR_55		0.74		
PD.2.2.A_OR_15		0.54		
SF.2.3.A_OR_58	0.36	0.48		
PD.1.2.C_OR_08		0.45		
PD.1.2.B_OR_06		0.45		
PD.1.1.B_OR_05		0.41		
LL.1.3.C_A132			0.93	
LL.1.3.B_A130			0.87	
MA.1.1.G_A117			0.80	
MA.1.1.A_A101			0.75	
LL.3.1.A_A134			0.70	
MA.4.1.B_A191			0.56	
MA.1.1.F_A115			0.55	
LL.3.1.B_A136			0.52	
MA.2.1.B_A138			0.51	
MA.3.1.D_A149			0.38	
LL.1.2.A_A163			0.36	
MA.3.2.B_A174			0.34	0.33

Item ID	Factor Loadings			
	Factor 1	Factor 2	Factor 3	Factor 4
LL.1.1.B_H104				0.79
LL.4.1.D_A160				0.73
LL.4.1.A_A195				0.73
LL.1.1.A_H101				0.67
MA.3.1.D_A143				0.62
LL.1.1.C_H106-R				0.60
LL.4.1.A_A155				0.58
LL.4.2.B_H103-R				0.58
MA.3.2.A_A152				0.57
MA.3.1.B_A123				0.48
MA.1.1.D_A121				0.43
MA.3.1.D_A147			0.36	0.40
LL.1.2.D_A127				0.37
MA.1.1.C_A104				0.35
MA.4.1.A_A177				0.35
LL.1.2.D_A180				0.31
LL.1.2.B_A164				
Items Removed (Not Included on KRA 1.5)				
LL.4.2.A_OR_22	0.77			
SS.2.1.A_OR_34	0.71			
SF.1.1.C_OR_39	0.67			
SF.2.4.B_OR_62	0.56			
SF.1.3.A_OR_45	0.47	0.46		
SF.2.1.A_OR_48		0.71		
SF.2.5.D_OR_65		0.59		
SF.2.2.A_OR_51		0.56		
LL.4.1.B_A157				0.71
MA.2.1.C_A200				
LL.1.2.A_A128				
SC.1.1.B_A109				
SC.1.1.B_A110				

Appendix K: Item Response Theory (IRT) Parameters

Table K.1 – IRT Parameters and Mean-Square Fit Statistics

Item ID	Count	Score	b	SE	Infit	Infit zstd	Outfit	Outfit zstd
LL.1.1.A_H101	189995	176961	-1.66	0.0096	0.99	-1.31	1.01	1.07
LL.1.1.B_H104	189932	179915	-1.97	0.0108	0.95	-5.65	0.89	-7.19
LL.1.1.C_H106-R	189650	339791	1.00	0.0029	1.31	9.90	1.38	9.90
LL.1.2.A_A163	189845	117841	0.81	0.0052	1.07	9.90	1.10	9.90
LL.1.2.B_A164	189740	322563	1.18	0.0029	1.70	9.90	1.94	9.90
LL.1.2.D_A127	189874	130170	0.46	0.0054	0.96	-9.90	0.91	-9.90
LL.1.2.D_A180	189847	131877	0.41	0.0055	1.08	9.90	1.10	9.90
LL.1.3.B_A130	189748	226798	0.97	0.0035	1.00	-1.02	0.99	-1.54
LL.1.3.C_A132	189909	393359	0.61	0.0029	1.12	9.90	1.15	9.90
LL.2.1.A_OR_19	189307	284884	0.03	0.0042	0.84	-9.90	0.78	-9.90
LL.2.1.B_OR_20	189282	281593	0.12	0.0041	0.79	-9.90	0.73	-9.90
LL.3.1.A_A134	189903	329297	-0.56	0.0048	0.88	-9.90	0.77	-9.90
LL.3.1.B_A136	189940	344903	-0.90	0.0056	0.92	-9.90	0.88	-9.90
LL.4.1.A_A155	190012	514193	-1.05	0.0048	0.99	-1.27	1.02	3.45
LL.4.1.A_A195	189913	481980	-0.62	0.0041	1.08	9.90	1.10	9.90
LL.4.1.D_A160	190008	504747	-0.69	0.0040	1.02	4.66	1.06	6.43
LL.4.2.B_H103-R	189950	130411	0.46	0.0054	1.08	9.90	1.12	9.90
MA.1.1.A_A101	189496	440946	0.06	0.0031	1.06	9.90	1.08	9.90
MA.1.1.C_A104	189435	398931	0.34	0.0033	1.07	9.90	1.12	9.90
MA.1.1.D_A121	189412	349633	-1.02	0.0060	1.01	1.75	1.36	9.90
MA.1.1.F_A115	189448	159885	-0.61	0.0068	0.97	-8.18	1.00	0.32
MA.1.1.G_A117	189484	400155	0.59	0.0028	1.27	9.90	1.48	9.90
MA.2.1.B_A138	189543	92442	1.48	0.0051	1.05	9.90	1.07	9.90
MA.3.1.B_A123	189567	290129	0.40	0.0035	1.48	9.90	2.44	9.90
MA.3.1.D_A143	189550	162201	-0.72	0.0070	1.00	0.39	1.05	5.45
MA.3.1.D_A147	189423	110504	1.00	0.0052	0.92	-9.90	0.88	-9.90
MA.3.1.D_A149	189502	106744	1.10	0.0051	1.10	9.90	1.13	9.90
MA.3.2.A_A152	189606	311597	-0.29	0.0044	1.04	9.90	1.10	9.90
MA.3.2.B_A174	189480	86668	1.63	0.0051	0.99	-5.48	1.00	-1.30
MA.4.1.A_A177	189701	281707	-0.07	0.0043	1.31	9.90	1.42	9.90
MA.4.1.B_A191	189295	289449	-0.03	0.0042	0.99	-2.85	0.98	-3.46

Item ID	Count	Score	b	SE	Infit	Infit zstd	Outfit	Outfit zstd
PD.1.1.A_OR_01	189257	328351	-0.69	0.0050	1.01	1.44	0.91	-9.90
PD.1.1.B_OR_05	188830	322139	-0.56	0.0048	1.02	5.23	1.05	6.51
PD.1.2.B_OR_06	189181	300925	-0.20	0.0043	0.92	-9.90	0.88	-9.90
PD.1.2.C_OR_08	189171	313345	-0.47	0.0046	0.95	-9.90	0.94	-9.90
PD.2.1.A_OR_10	189170	311361	-0.47	0.0046	0.98	-4.88	0.93	-9.90
PD.2.1.B_OR_09	188892	287056	-0.02	0.0042	0.82	-9.90	0.78	-9.90
PD.2.2.A_OR_15	189232	325914	-0.92	0.0052	0.92	-9.90	0.84	-9.90
SF.1.1.B_OR_35	189651	292980	-0.10	0.0043	0.87	-9.90	0.81	-9.90
SF.1.2.B_OR_42	189572	270494	0.20	0.0041	0.85	-9.90	0.81	-9.90
SF.1.2.C_OR_43	189527	306609	-0.33	0.0045	0.85	-9.90	0.75	-9.90
SF.2.1.C_OR_49	189466	304785	-0.30	0.0044	1.03	9.45	1.01	1.38
SF.2.2.B_OR_55	189397	237651	0.70	0.0039	0.89	-9.90	0.88	-9.90
SF.2.3.A_OR_58	189214	253509	0.50	0.0039	0.75	-9.90	0.71	-9.90
SF.2.3.C_OR_12	189124	224600	0.91	0.0038	0.78	-9.90	0.76	-9.90
SF.2.5.A_OR_25	188995	281275	-0.01	0.0042	0.86	-9.90	0.81	-9.90
SF.2.5.A_OR_64	189123	258314	0.35	0.0041	0.81	-9.90	0.78	-9.90
SF.2.6.B_OR_68	189223	294357	-0.26	0.0044	0.88	-9.90	0.85	-9.90
SF.2.6.D_OR_69	189224	319443	-0.62	0.0048	0.97	-8.49	0.89	-9.90
SF.3.1.B_OR_32	188833	297650	-0.16	0.0043	0.79	-9.90	0.71	-9.90
Mean	**189498**	**278061**	**0.00**	**0.0047**	**1.00**	**-1.31**	**1.02**	**-1.16**
SD	**323**	**103611**	**0.77**	**0.0015**	**0.17**	**8.72**	**0.31**	**8.98**

Table K.2 – IRT Step Parameters and Standard Errors

Item ID	Step Parameter for Score 1	SE (Score 1)	Step Parameter for Score 2	SE (Score 2)	Step Parameter for Score 3	SE (Score 3)
LL.1.1.A_H101	-1.66	0.01				
LL.1.1.B_H104	-1.97	0.01				
LL.1.1.C_H106-R	0.33	0.01	0.81	0.01	1.86	0.01
LL.1.2.A_A163	0.81	0.01				
LL.1.2.B_A164	0.71	0.01	0.57	0.01	2.26	0.01
LL.1.2.D_A127	0.46	0.01				
LL.1.2.D_A180	0.41	0.01				
LL.1.3.B_A130	0.60	0.01	1.34	0.01		
LL.1.3.C_A132	0.23	0.01	0.64	0.01	0.95	0.01
LL.2.1.A_OR_19	-0.75	0.01	0.81	0.01		
LL.2.1.B_OR_20	-0.57	0.01	0.81	0.01		
LL.3.1.A_A134	-0.73	0.01	-0.39	0.01		
LL.3.1.B_A136	-0.88	0.01	-0.91	0.01		
LL.4.1.A_A155	-1.53	0.03	-1.55	0.01	-0.08	0.01
LL.4.1.A_A195	-1.22	0.02	-1.35	0.01	0.71	0.01
LL.4.1.D_A160	-1.51	0.02	-0.09	0.01	-0.46	0.01
LL.4.2.B_H103-R	0.46	0.01				
MA.1.1.A_A101	-0.98	0.01	1.34	0.01	-0.16	0.01
MA.1.1.C_A104	-0.79	0.01	0.08	0.01	1.74	0.01
MA.1.1.D_A121	-0.86	0.01	-1.18	0.01		
MA.1.1.F_A115	-0.61	0.01				
MA.1.1.G_A117	0.47	0.01	0.66	0.01	0.64	0.01
MA.2.1.B_A138	1.48	0.01				
MA.3.1.B_A123	2.18	0.01	-1.38	0.01		
MA.3.1.D_A143	-0.72	0.01				
MA.3.1.D_A147	1.00	0.01				
MA.3.1.D_A149	1.10	0.01				
MA.3.2.A_A152	-0.70	0.01	0.12	0.01		
MA.3.2.B_A174	1.63	0.01				
MA.4.1.A_A177	-1.20	0.01	1.07	0.01		
MA.4.1.B_A191	-0.78	0.01	0.71	0.01		

Item ID	Step Parameter for Score 1	SE (Score 1)	Step Parameter for Score 2	SE (Score 2)	Step Parameter for Score 3	SE (Score 3)
PD.1.1.A_OR_01	-1.12	0.01	-0.26	0.01		
PD.1.1.B_OR_05	-0.99	0.01	-0.13	0.01		
PD.1.2.B_OR_06	-0.84	0.01	0.43	0.01		
PD.1.2.C_OR_08	-1.12	0.01	0.19	0.01		
PD.2.1.A_OR_10	-1.23	0.01	0.28	0.01		
PD.2.1.B_OR_09	-0.81	0.01	0.77	0.01		
PD.2.2.A_OR_15	-1.83	0.02	0.00	0.01		
SF.1.1.B_OR_35	-0.88	0.01	0.67	0.01		
SF.1.2.B_OR_42	-0.76	0.01	1.17	0.01		
SF.1.2.C_OR_43	-1.03	0.01	0.37	0.01		
SF.2.1.C_OR_49	-1.00	0.01	0.40	0.01		
SF.2.2.B_OR_55	-0.32	0.01	1.73	0.01		
SF.2.3.A_OR_58	-0.37	0.01	1.37	0.01		
SF.2.3.C_OR_12	-0.05	0.01	1.87	0.01		
SF.2.5.A_OR_25	-1.01	0.01	0.99	0.01		
SF.2.5.A_OR_64	-0.75	0.01	1.45	0.01		
SF.2.6.B_OR_68	-1.28	0.01	0.75	0.01		
SF.2.6.D_OR_69	-1.32	0.01	0.08	0.01		
SF.3.1.B_OR_32	-0.83	0.01	0.51	0.01		

Appendix L: Conversion Tables

Table L.1 – Conversion Table for Overall Score

Raw Score	Theta	S.E.	Scaled Score	S.E.	Performance Level
0	-3.98	0.72	202	9	Emerging Readiness
1	-3.98	0.72	202	9	Emerging Readiness
2	-3.98	0.72	202	9	Emerging Readiness
3	-3.57	0.59	207	7	Emerging Readiness
4	-3.27	0.51	211	6	Emerging Readiness
5	-3.03	0.46	214	6	Emerging Readiness
6	-2.84	0.42	216	5	Emerging Readiness
7	-2.67	0.39	218	5	Emerging Readiness
8	-2.53	0.37	220	4	Emerging Readiness
9	-2.40	0.35	221	4	Emerging Readiness
10	-2.28	0.34	223	4	Emerging Readiness
11	-2.17	0.32	224	4	Emerging Readiness
12	-2.07	0.31	225	4	Emerging Readiness
13	-1.98	0.30	226	4	Emerging Readiness
14	-1.89	0.29	227	3	Emerging Readiness
15	-1.81	0.28	228	3	Emerging Readiness
16	-1.73	0.28	229	3	Emerging Readiness
17	-1.65	0.27	230	3	Emerging Readiness
18	-1.58	0.27	231	3	Emerging Readiness
19	-1.51	0.26	232	3	Emerging Readiness
20	-1.44	0.26	233	3	Emerging Readiness
21	-1.38	0.25	233	3	Emerging Readiness
22	-1.32	0.25	234	3	Emerging Readiness
23	-1.26	0.24	235	3	Emerging Readiness
24	-1.20	0.24	236	3	Emerging Readiness
25	-1.14	0.24	236	3	Emerging Readiness
26	-1.09	0.24	237	3	Emerging Readiness
27	-1.03	0.23	238	3	Emerging Readiness
28	-0.98	0.23	238	3	Emerging Readiness
29	-0.92	0.23	239	3	Emerging Readiness
30	-0.87	0.23	240	3	Emerging Readiness
31	-0.82	0.23	240	3	Emerging Readiness
32	-0.77	0.22	241	3	Emerging Readiness
33	-0.72	0.22	241	3	Emerging Readiness
34	-0.67	0.22	242	3	Emerging Readiness
35	-0.62	0.22	243	3	Emerging Readiness
36	-0.58	0.22	243	3	Emerging Readiness
37	-0.53	0.22	244	3	Emerging Readiness

Raw Score	Theta	S.E.	Scaled Score	S.E.	Performance Level
38	-0.48	0.22	244	3	Emerging Readiness
39	-0.43	0.22	245	3	Emerging Readiness
40	-0.39	0.21	245	3	Emerging Readiness
41	-0.34	0.21	246	3	Emerging Readiness
42	-0.30	0.21	246	3	Emerging Readiness
43	-0.25	0.21	247	3	Emerging Readiness
44	-0.21	0.21	247	3	Emerging Readiness
45	-0.16	0.21	248	3	Emerging Readiness
46	-0.12	0.21	249	3	Emerging Readiness
47	-0.07	0.21	249	3	Emerging Readiness
48	-0.03	0.21	250	3	Emerging Readiness
49	0.02	0.21	250	3	Emerging Readiness
50	0.06	0.21	251	3	Emerging Readiness
51	0.10	0.21	251	3	Emerging Readiness
52	0.15	0.21	252	3	Emerging Readiness
53	0.19	0.21	252	3	Emerging Readiness
54	0.24	0.21	253	3	Emerging Readiness
55	0.28	0.21	253	3	Emerging Readiness
56	0.33	0.21	254	3	Emerging Readiness
57	0.37	0.21	254	3	Emerging Readiness
58	0.42	0.21	255	3	Emerging Readiness
59	0.46	0.21	256	3	Emerging Readiness
60	0.51	0.21	256	3	Emerging Readiness
61	0.55	0.21	257	3	Emerging Readiness
62	0.60	0.22	257	3	Emerging Readiness
63	0.65	0.22	258	3	Approaching Readiness
64	0.69	0.22	258	3	Approaching Readiness
65	0.74	0.22	259	3	Approaching Readiness
66	0.79	0.22	259	3	Approaching Readiness
67	0.84	0.22	260	3	Approaching Readiness
68	0.89	0.23	261	3	Approaching Readiness
69	0.94	0.23	261	3	Approaching Readiness
70	0.99	0.23	262	3	Approaching Readiness
71	1.05	0.23	263	3	Approaching Readiness
72	1.10	0.24	263	3	Approaching Readiness
73	1.16	0.24	264	3	Approaching Readiness
74	1.22	0.24	265	3	Approaching Readiness
75	1.28	0.25	265	3	Approaching Readiness
76	1.34	0.25	266	3	Approaching Readiness
77	1.40	0.26	267	3	Approaching Readiness

Raw Score	Theta	S.E.	Scaled Score	S.E.	Performance Level
78	1.47	0.26	268	3	Approaching Readiness
79	1.54	0.27	268	3	Approaching Readiness
80	1.61	0.27	269	3	Approaching Readiness
81	1.69	0.28	270	3	Demonstrating Readiness
82	1.77	0.29	271	3	Demonstrating Readiness
83	1.85	0.30	272	4	Demonstrating Readiness
84	1.95	0.31	273	4	Demonstrating Readiness
85	2.04	0.32	274	4	Demonstrating Readiness
86	2.14	0.33	276	4	Demonstrating Readiness
87	2.26	0.34	277	4	Demonstrating Readiness
88	2.38	0.36	279	4	Demonstrating Readiness
89	2.51	0.38	280	5	Demonstrating Readiness
90	2.66	0.40	282	5	Demonstrating Readiness
91	2.84	0.43	284	5	Demonstrating Readiness
92	3.04	0.47	286	6	Demonstrating Readiness
93	3.28	0.52	289	6	Demonstrating Readiness
94	3.59	0.59	293	7	Demonstrating Readiness
95	4.00	0.72	298	9	Demonstrating Readiness
96	4.00	0.72	298	9	Demonstrating Readiness
97	4.00	0.72	298	9	Demonstrating Readiness

Note: The scale was truncated at theta values of -4 and 4 (scaled scores of 202 and 298).

Table L.2 – Conversion Table for Language and Literacy Domain

Raw Score	Theta	S.E.	Scaled Score	S.E.
0	-4.00	1.01	202	12
1	-3.61	1.01	207	12
2	-2.89	0.73	215	9
3	-2.46	0.60	220	7
4	-2.14	0.53	224	6
5	-1.89	0.48	227	6
6	-1.67	0.45	230	5
7	-1.47	0.43	232	5
8	-1.30	0.41	234	5
9	-1.13	0.40	236	5
10	-0.98	0.39	238	5
11	-0.83	0.38	240	5
12	-0.69	0.37	242	4
13	-0.55	0.37	243	4
14	-0.42	0.37	245	4
15	-0.28	0.36	247	4
16	-0.15	0.36	248	4
17	-0.02	0.36	250	4
18	0.11	0.36	251	4
19	0.24	0.36	253	4
20	0.37	0.36	254	4
21	0.50	0.36	256	4
22	0.63	0.37	258	4
23	0.77	0.38	259	5
24	0.92	0.38	261	5
25	1.07	0.39	263	5
26	1.23	0.41	265	5
27	1.40	0.43	267	5
28	1.60	0.45	269	5
29	1.82	0.49	272	6
30	2.08	0.54	275	6
31	2.41	0.61	279	7
32	2.86	0.74	284	9
33	3.60	1.03	293	12
34	4.00	1.03	298	12

Note: In Ohio, a Language and Literacy domain scaled score of 263 and higher is considered "on track" for the Third Grade Reading Guarantee.

Table L.3 – Conversion Table for Mathematics Domain

Raw Score	Theta	S.E.	Scaled Score	S.E.
0	-4.00	1.02	202	12
1	-2.98	1.02	214	12
2	-2.25	0.74	223	9
3	-1.80	0.62	228	7
4	-1.46	0.55	232	7
5	-1.18	0.51	236	6
6	-0.94	0.48	239	6
7	-0.73	0.45	241	5
8	-0.53	0.44	244	5
9	-0.35	0.42	246	5
10	-0.17	0.41	248	5
11	-0.01	0.40	250	5
12	0.15	0.39	252	5
13	0.30	0.39	254	5
14	0.45	0.39	255	5
15	0.60	0.39	257	5
16	0.76	0.40	259	5
17	0.92	0.41	261	5
18	1.10	0.43	263	5
19	1.30	0.46	266	6
20	1.53	0.50	268	6
21	1.80	0.55	272	7
22	2.14	0.62	276	7
23	2.61	0.75	281	9
24	3.37	1.04	290	12
25	4.00	1.04	298	12

Table L.4 – Conversion Table for Physical Well-Being and Motor Development Domain

Raw Score	Theta	S.E.	Scaled Score	S.E.
0	-4.00	1.04	202	12
1	-3.05	1.04	213	12
2	-2.27	0.77	223	9
3	-1.78	0.65	229	8
4	-1.39	0.59	233	7
5	-1.06	0.56	237	7
6	-0.76	0.54	241	6
7	-0.48	0.53	244	6
8	-0.19	0.54	248	6
9	0.11	0.56	251	7
10	0.44	0.59	255	7
11	0.83	0.65	260	8
12	1.32	0.77	266	9
13	2.10	1.04	275	12
14	3.22	1.73	289	21

Note: The Physical Well-Being and Motor Development domain has a lower maximum score due to the limited number of items and score points within the domain.

Table L.5 – Conversion Table for Social Foundations Domain

Raw Score	Theta	S.E.	Scaled Score	S.E.
0	-4.00	1.03	202	12
1	-3.29	1.03	211	12
2	-2.54	0.75	220	9
3	-2.07	0.63	225	8
4	-1.72	0.56	229	7
5	-1.42	0.52	233	6
6	-1.17	0.49	236	6
7	-0.94	0.47	239	6
8	-0.73	0.45	241	5
9	-0.53	0.44	244	5
10	-0.33	0.44	246	5
11	-0.14	0.44	248	5
12	0.05	0.44	251	5
13	0.24	0.44	253	5
14	0.43	0.44	255	5
15	0.63	0.45	258	5
16	0.84	0.46	260	6
17	1.06	0.48	263	6
18	1.31	0.50	266	6
19	1.57	0.53	269	6
20	1.88	0.58	273	7
21	2.25	0.64	277	8
22	2.73	0.76	283	9
23	3.50	1.04	292	12
24	4.00	1.04	298	12

Appendix M: Distributions of Scaled Scores

Table M.1—Distribution of KRA Overall Scaled Scores

Scaled Score Range	Percent	Cumulative Percent
202–210	0.22	0.22
211–220	0.10	0.33
221–230	0.32	0.64
231–240	1.41	2.05
241–250	6.73	8.78
251–260	20.77	29.55
261–270	33.02	62.56
271–280	24.34	86.90
281–290	9.47	96.37
291–298	3.63	100.00
Mean	266.9	
SD	13.0	

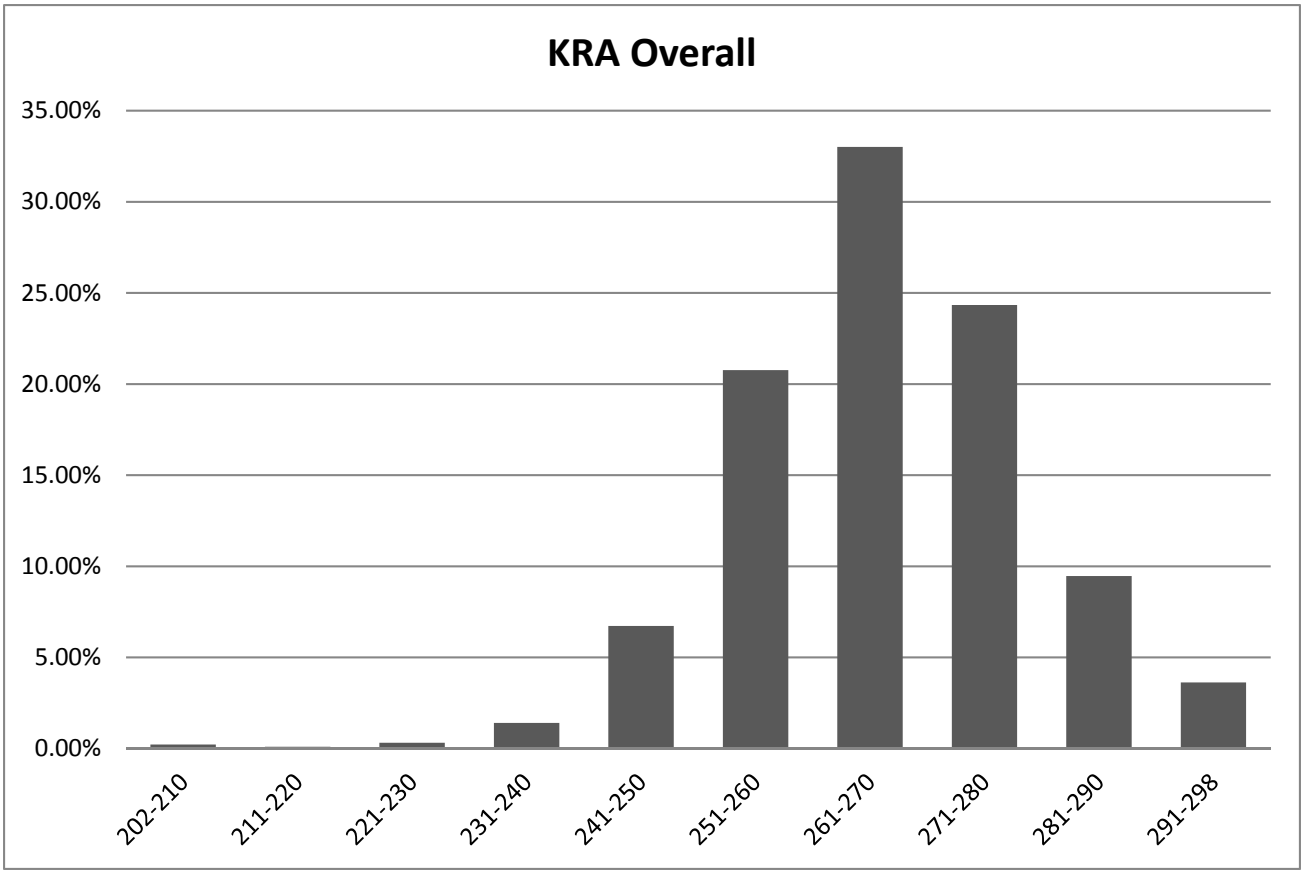


Table M.2—Distribution of Language and Literacy Domain Scaled Scores

Scaled Score Range	Percent	Cumulative Percent
202–210	0.48	0.48
211–220	0.16	0.64
221–230	0.42	1.05
231–240	1.72	2.78
241–250	6.67	9.45
251–260	18.94	28.39
261–270	33.44	61.82
271–280	25.00	86.83
281–290	6.40	93.23
291–298	6.77	100.00
Mean	267.0	
SD	13.8	

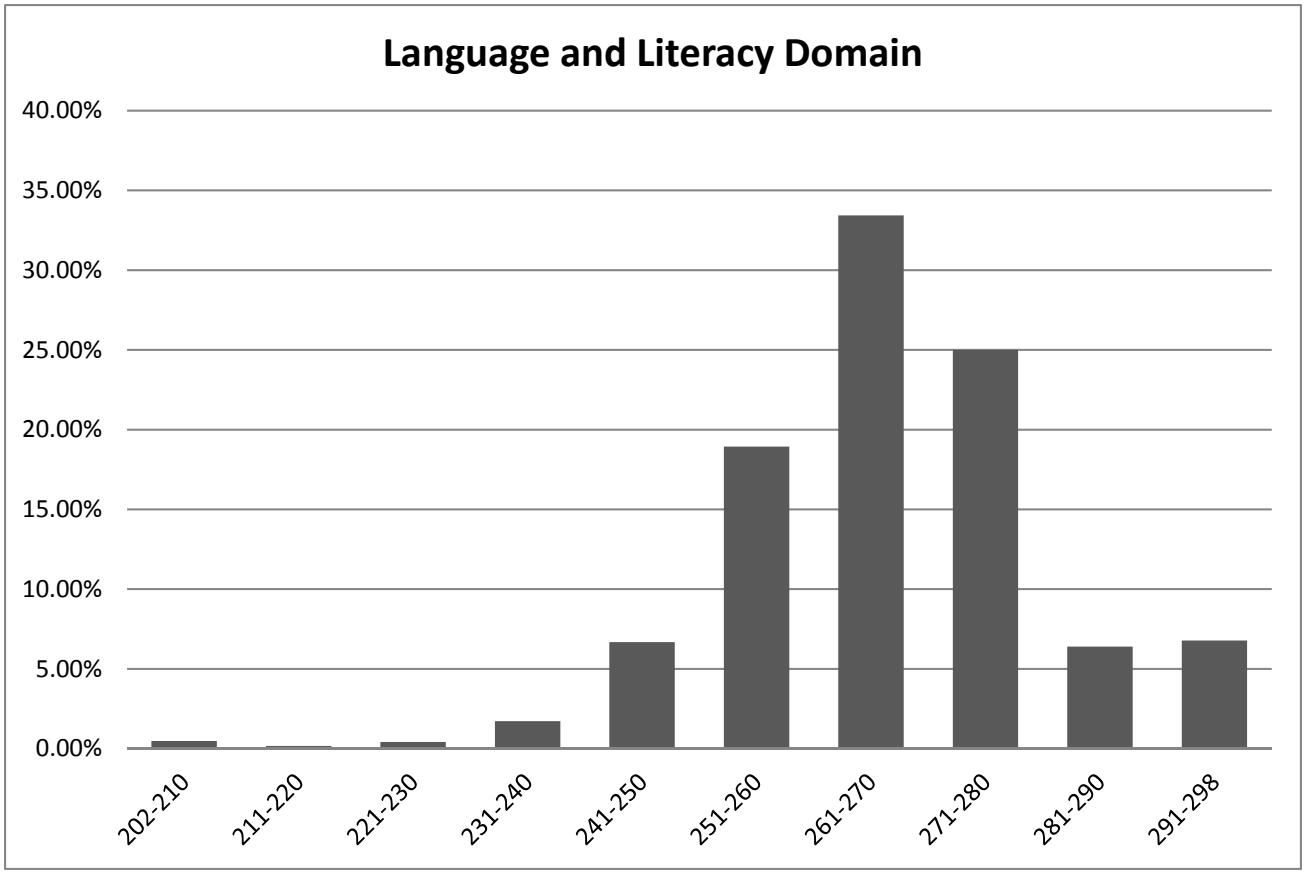


Table M.3—Distribution of Mathematics Domain Scaled Scores

Scaled Score Range	Percent	Cumulative Percent
202–210	0.43	0.43
211–220	0.11	0.54
221–230	0.40	0.94
231–240	1.38	2.31
241–250	7.14	9.46
251–260	20.63	30.09
261–270	30.94	61.03
271–280	18.25	79.29
281–290	15.78	95.07
291–298	4.93	100.00
Mean	267.5	
SD	14.6	

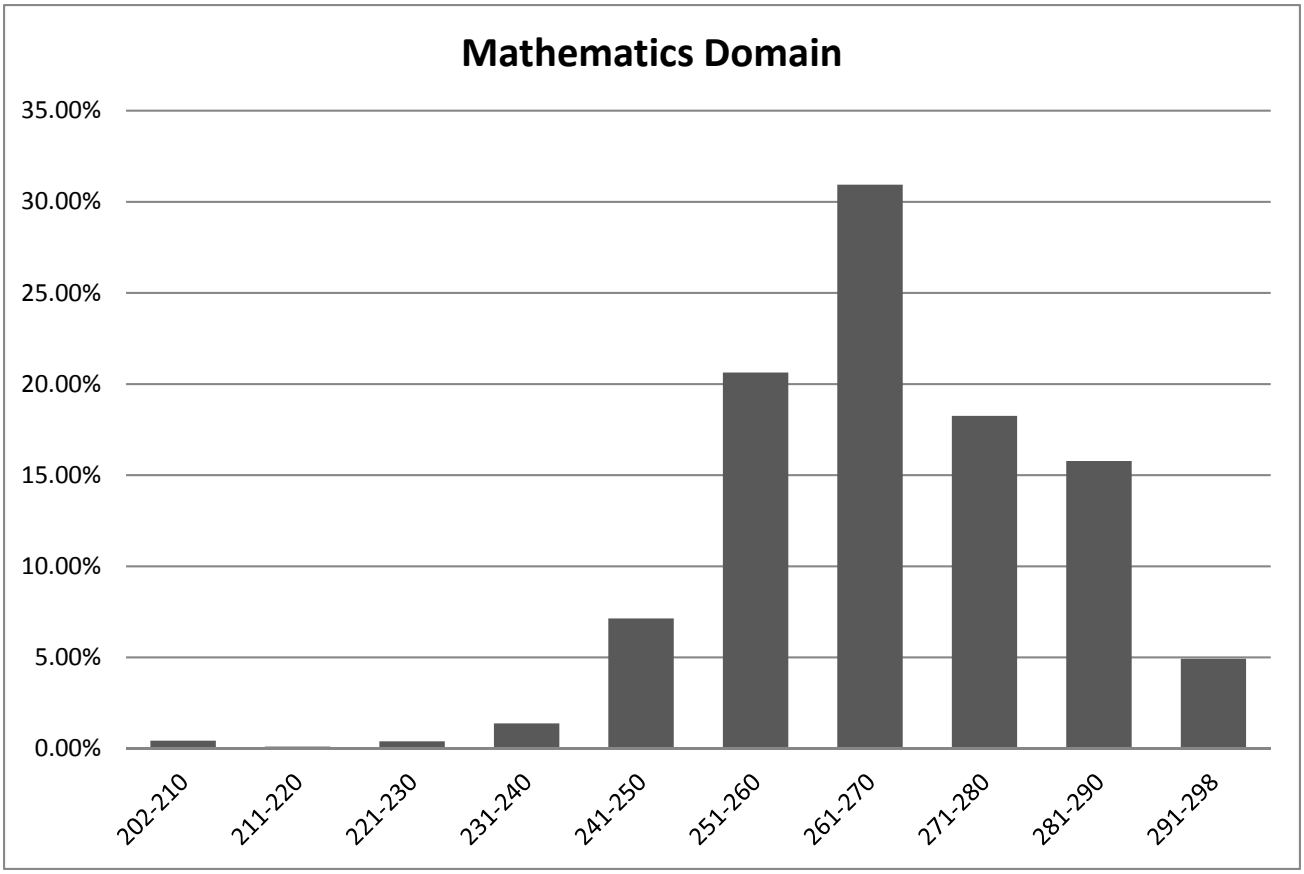
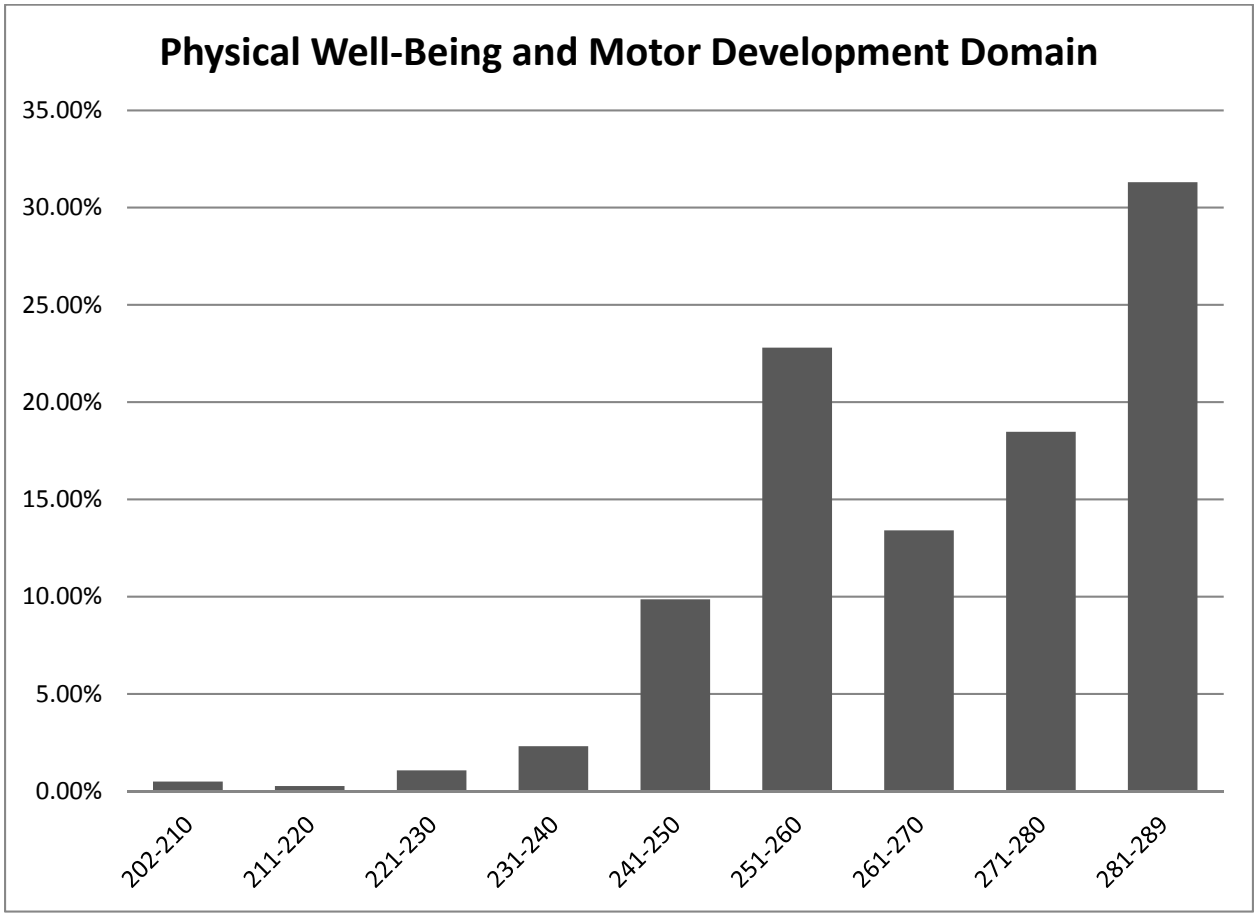


Table M.4—Distribution of Physical Well-Being and Motor Development Domain Scaled Scores

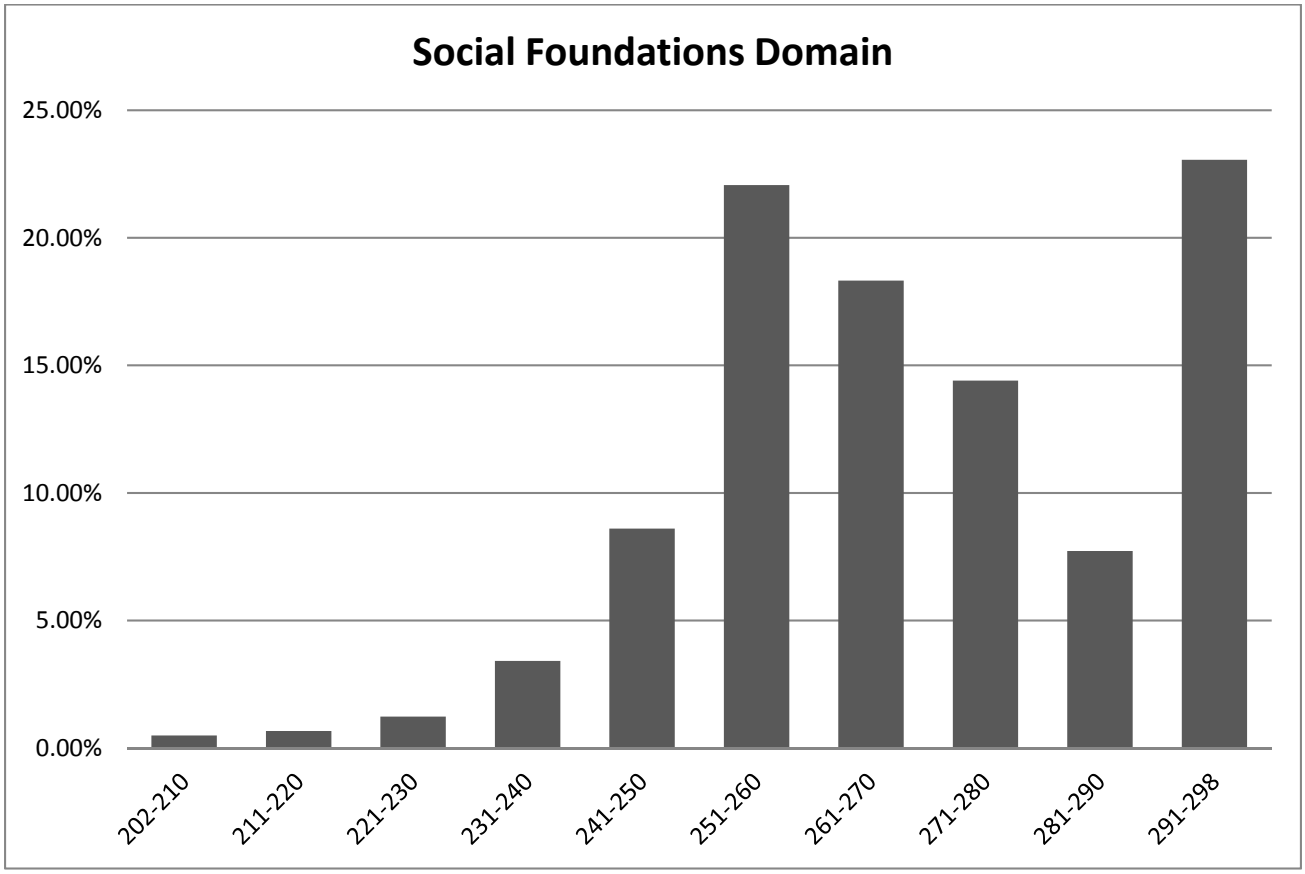
Scaled Score Range	Percent	Cumulative Percent
202–210	0.49	0.49
211–220	0.26	0.76
221–230	1.07	1.83
231–240	2.32	4.15
241–250	9.86	14.01
251–260	22.80	36.81
261–270	13.41	50.22
271–280	18.47	68.69
281–289	31.31	100.00
Mean	269.0	
SD	17.5	



Note: The large percentage of students in the top score range is likely due to the limitation of the scale, which is a result of a limited number of items and score points within this domain.

Table M.5—Distribution of Social Foundations Domain Scaled Scores

Scaled Score Range	Percent	Cumulative Percent
202–210	0.50	0.50
211–220	0.67	1.17
221–230	1.24	2.41
231–240	3.42	5.83
241–250	8.60	14.43
251–260	22.06	36.49
261–270	18.32	54.82
271–280	14.40	69.22
281–290	7.73	76.94
291–298	23.06	100.00
Mean	268.9	
SD	19.4	



Note: The large percentage of students in the top score range is likely due to the truncation of the scale.

Appendix N: KRA Individual Student Report (ISR) Samples

Student Report

KINDERGARTEN READINESS ASSESSMENT

WHAT IS THE KINDERGARTEN READINESS ASSESSMENT?

The Kindergarten Readiness Assessment (KRA) is one part of the Ready for Kindergarten assessment system in Maryland. The KRA is a kindergarten readiness tool that allows teachers to measure each child's school readiness across four domains: Social Foundations, Mathematics, Language and Literacy, and Physical Well-being and Motor Development.

Teachers administer the KRA to all children in kindergarten between the first day of school and November 1. More information about the Ready for Kindergarten system and the KRA are available at http://pd.kready.org/r4kmaryland.

HOW IS THE KRA SCORED?

After the KRA is completed in November, scores are calculated for each domain and for overall performance. The overall score determines a performance level, which is based on criteria set by Maryland educators.

Demonstrating Readiness: A child demonstrates foundational skills and behaviors that prepare him/her for curriculum based on kindergarten standards.

Approaching Readiness: A child demonstrates some foundational skills and behaviors that prepare him/her for curriculum based on kindergarten standards.

Emerging Readiness: A child demonstrates minimal foundational skills and behaviors that prepare him/her for curriculum based on kindergarten standards.

Other: A child was not able to access one or more assessment items, resulting in a "Not Scorable" for those items, due to limited English proficiency, a disability, or other circumstances, such as a documented medical condition during assessment administration. Domains in which all items could be scored are reported. A "Not Scorable" will result in the student not receiving an overall performance score and a score in that domain (s).

Incomplete Assessment: A child had one or more items that were left blank. Domains in which all items could be scored are reported.

HOW IS THE KRA ADMINISTERED?

The KRA does not look like a test. Instead, it includes a variety of items, including teacher's observations of daily activities and age-appropriate performance tasks in which the teacher asks a child to respond to a question or complete an activity. Some items can be administered via a tablet or computer.

Most children enjoy working on these tasks, and appropriate supports were provided, when possible, to allow any child, including a child with disabilities or a child learning English, to demonstrate their skills and knowledge.

WHAT DO THE RESULTS MEAN?

The results of the KRA provide a measure of a child's mastery of content and skills that Maryland has identified as expectations for children entering kindergarten. Performance on the KRA does not prevent or prohibit a child from entering kindergarten. The performance level and domain scores are only one piece of information on a child's preparation for kindergarten. Score reports should be used with other data and information, including feedback from a child's teacher, to make instructional decisions.

Because there are fewer items within each domain, the domain scores include a bar that reflects the best estimate of performance within each domain.

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Student Report

KINDERGARTEN READINESS ASSESSMENT

Student Name: Jennifer Parker
Assessment Administrator(s): Peter Miller, Elizabeth Draper, Donald Macintosh

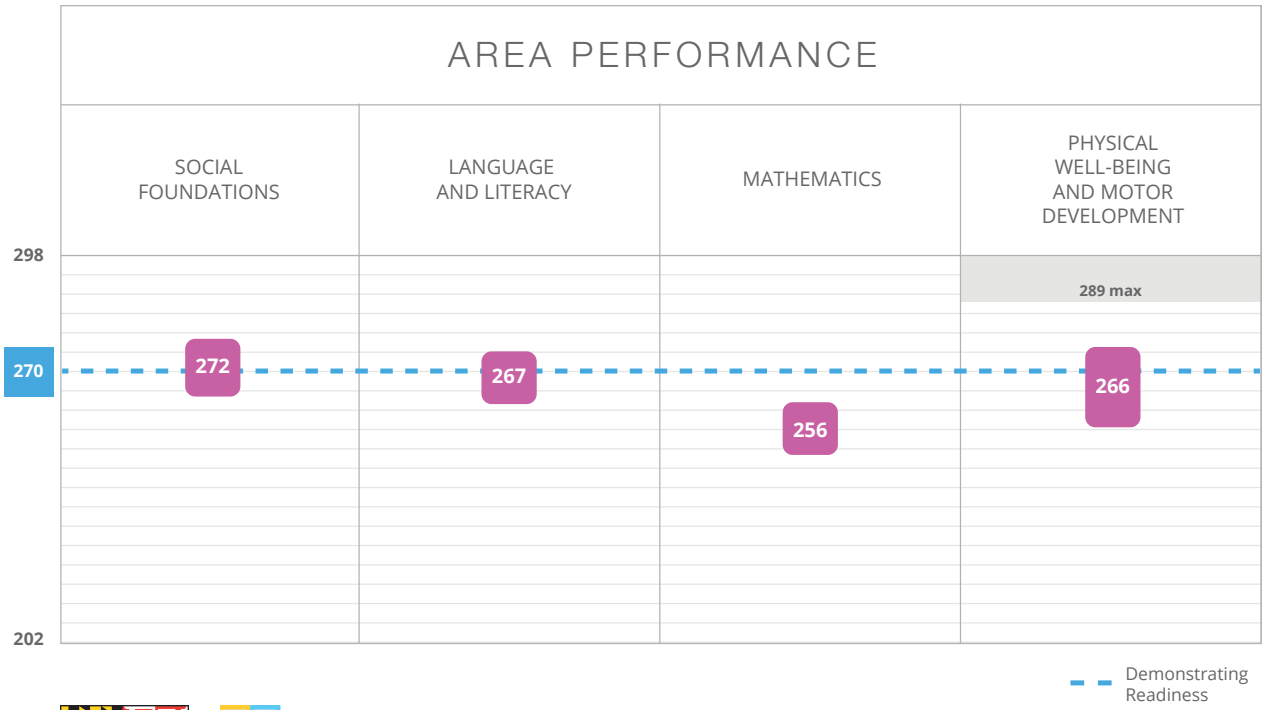
School Name: K1 School
Administration: Fall 2014

OVERALL PERFORMANCE

EMERGING	APPROACHING	DEMONSTRATING
	269	

APPROACHING READINESS
Jennifer demonstrates some foundational skills and behaviors that prepare him/her for curriculum based on kindergarten standards.

AREA PERFORMANCE



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ready for KINDERGARTEN MARYLAND

Student Report

KINDERGARTEN READINESS ASSESSMENT

After you look at your child's scores, do you see areas where your child needs some help?

WHAT SHOULD I ASK MY CHILD'S TEACHER?

- Ask the Kindergarten teacher what your child's strengths are. Ask where your child needs more help.
- Talk with your Kindergarten teacher to find out what the school will do to help your child be ready for learning the kindergarten curriculum.

HOW CAN I HELP?

Language and Literacy:

- TALK with your child. Answer his questions. Ask her questions. Pretend with your child.
- Read with your child every day. Ask questions about the story- can he tell you what will happen next?
- Tell your child stories. Ask her to tell you stories.
- Give your child directions with 2 or more steps to follow like, "Wash your hands and come to the table."
- Let your child play with letters. Let him sort them and look at the round and straight lines. Ask her to tell you the names of the ones she knows. Put them in order and sing the alphabet song.
- Look for letters everywhere you go- on signs, cereal boxes, and at the store.
- Give your child a newspaper or magazine to look for letters he knows.
- Sing rhyming songs like "The Name Game". If your child's name is Nate, sing "Nate, Nate bo bate, banana fana fo fate, fee fi fo mate, Nate."
- Read books and poems that rhyme like Dr. Suess books.
- Help your child think of words that start with different letters.
- Make a place in your house where you child can draw and write. Give her crayons, pencils, markers, and different kinds of paper.
- Ask your child to "sign" his name. Put the sign on his door. Ask her to write a sentence to tell you about the picture she drew.

Mathematics:

- Count with your child- count things around the house like cereal pieces, pennies, toys. Look for numbers everywhere you go.
- Write things with numbers and show your child- his age, birthday, how much something costs, how many things he has. Let your child do it too.

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Preparing World Class Students

ready for KINDERGARTEN MARYLAND

- Make patterns with music or dance together. Clap loud, loud, soft, loud, loud, soft or move hop, spin, wiggle, hop, spin, wiggle. Ask her to repeat it or keep the pattern going.
- Ask your child to sort- socks by color, forks and spoons where they belong, coins. Use playing cards to have your child sort them by colors, kinds, or numbers.
- Play games to practice putting things in order like Hokey Pokey and Miss Mary Mack.
- Talk about things your child does at home in a certain order like "what do you do when you get up every morning" or "what do you do to get ready for bed?
- Ask your child whether things are the same or different. Use words like "which is heavy and which is light" or far /near, happy/sad, hot/cold.

Social Foundations:

- Talk to your child about feelings and help him use words like happy, angry, nervous, and frustrated.
- Use your words to explain a problem and ask your child to explain it again in her words.
- Help your child talk about the different ways he can choose to solve a problem.
- Give your child time to solve his own problem and then ask him how it worked. If it didn't, what could he try next time?
- Have your child put away her toys or things before going to the next activity.
- Have your child help around the house. Let your child sweep, dust, or put away clean clothes.
- Play games with rules and help him learn how to follow them like in Simon Says, Duck-Duck-Goose, sports, or board games.
- Practice skills like waiting patiently, taking turns, talking politely, using good table manners, or what to do when friends are not getting along.

Physical Well-Being and Motor Development:

- Make sure your child PLAYS and GETS EXERCISE every day.
- Make time for your child to run, jump, hop, climb and move.
- Help your child practice drawing, using a pencil grasp, and cutting with scissors.
- Make sure your child can do personal care tasks without help like washes hands before eating and after toileting, zips, buttons, and snaps own clothing, and puts on own jacket or backpack.

Student Report

KINDERGARTEN READINESS ASSESSMENT

WHAT IS THE KINDERGARTEN READINESS ASSESSMENT?

The new comprehensive Kindergarten Readiness Assessment began in the 2014-2015 school year. It replaced Ohio's 10-year-old assessment. The new assessment measures a child's school readiness in social, physical and academic areas. It provides important information to teachers and families about the supports a child may need during the first year of school to maximize his or her success. The assessment aligns with Ohio's Early Learning and Development Standards.

More information about the Ready for Kindergarten system and the assessment is available at education.ohio.gov/KRA.

HOW IS THE KINDERGARTEN READINESS ASSESSMENT SCORED?

Teachers enter the score for each item into a secure online data system. The system calculates scores for each area and overall performance. The overall score determines the child's performance level:

Demonstrating Readiness: The child demonstrates foundational skills and behaviors that prepare him or her for instruction based on kindergarten standards.

Approaching Readiness: The child demonstrates some foundational skills and behaviors that prepare him or her for instruction based on kindergarten standards.

Emerging Readiness: The child demonstrates minimal foundational skills and behaviors that prepare him or her for instruction based on kindergarten standards.

Incomplete Assessment: The assessment was incomplete. Not enough items were completed to determine an overall score or performance level. Scores for some areas may be available if enough items were completed in one or more areas.

Did Not Participate: The assessment was incomplete. Not enough items were completed to determine a score for any of the assessment areas.

WHO GIVES THE KINDERGARTEN READINESS ASSESSMENT?

Kindergarten teachers administer the new assessment to all children in their classrooms. It occurs during the school day between the first day of school and Nov. 1.

The assessment consists of a variety of items. Teachers observe children doing daily activities and completing specific tasks. Children can, but are not required to, complete some items on a computer or tablet.

Children receive supports, as appropriate and when possible, so they can demonstrate their skills and knowledge.

WHAT DO THE RESULTS MEAN?

The results provide a measure of a child's level of readiness for kindergarten instruction. Performance on the Kindergarten Readiness Assessment does not prevent or prohibit a child from remaining in kindergarten. The results, coupled with other information about the child, inform decisions about instruction in kindergarten.

Each area consists of a limited number of items. A bar in each area reflects the best estimate of the child's performance and shows relative strengths in a child's performance. Please note that the overall scale score is not an average of all scores.

For questions about the Kindergarten Readiness Assessment, please contact the Office of Early Learning and School Readiness at the Ohio Department of Education at (877) 644-6338 or ELSR@education.ohio.gov.

Ohio | Department of Education

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Student Report

KINDERGARTEN READINESS ASSESSMENT

Student Name: Jennifer Parker
Teacher Name: Peter Miller

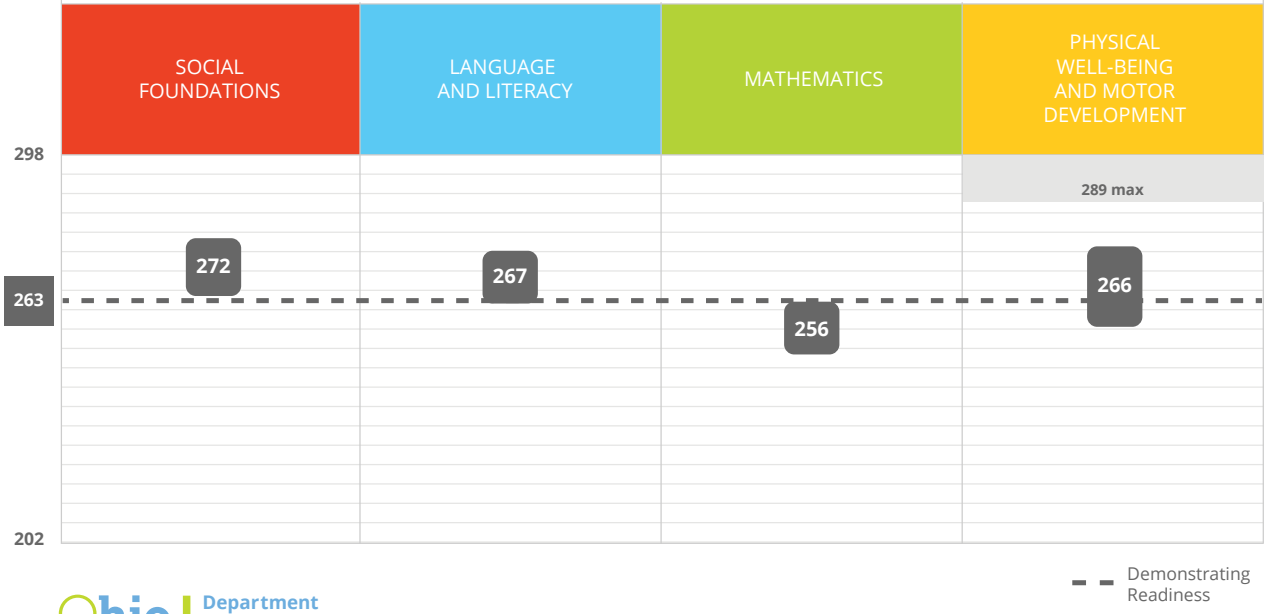
School Name: K1 School
Administration: Fall 2014

OVERALL PERFORMANCE

EMERGING	APPROACHING	DEMONSTRATING
	269	

APPROACHING READINESS
Jennifer demonstrates some foundational skills and behaviors that prepare him/her for instruction based on kindergarten standards.

AREA PERFORMANCE



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