STUDENT ASSESSMENTS AND ASSOCIATED GROWTH MODELS FOR TEACHER AND PRINCIPAL EVALUATION

FORM *C*

PUBLICLY AVAILABLE SERVICES SUMMARY

This form will be posted on the New York State Education Department's Web site and distributed through other means for all applications that are approved in conjunction with this RFQ to allow districts and BOCES to understand proposed offerings in advance of directly contacting Assessment Providers regarding potential further procurements.

Assessment Provider Information	
Name of Assessment Provider:	Curriculum Associates, LLC
Assessment Provider Contact Information:	Don Masters, Regional Vice President of Sales 315-350-4988 | dmasters@cainc.com
Name of Assessment:	*i-Ready® Diagnostic* for Mathematics *i-Ready® Diagnostic* for Reading
Nature of Assessment:	☐ ASSESSMENT FOR USE WITH STUDENT LEARNING OBJECTIVES WITH A TARGET SETTING MODEL; OR ☒ SUPPLEMENTAL ASSESSMENT WITH AN ASSOCIATED GROWTH MODEL: ☒ GAIN SCORE MODEL ☐ GROWTH-TO-PROFICIENCY MODEL ☐ STUDENT GROWTH PERCENTILES ☐ PROJECTION MODELS ☐ VALUE-ADDED MODELS ☐ OTHER:
What are the grade(s) for which the assessment can be used to generate a 0-20 APPR score?	K–12
What are the subject area(s) for which the assessment can be used to generate a 0-20 APPR score?	ELA and mathematics
What are the technology requirements associated with the assessment?	*i-Ready* runs on most standard PC- and Mac-based systems, using common browsers and standard configurations. System requirements can be found at: www.i-Ready.com/support
Is the assessment available, either for free or through purchase, to other districts or BOCES in New York State?	☒ YES ☐ NO

Please provide an overview of the assessment for districts and BOCES. Please include:

- **A description of the assessment;**
- **A description of how the assessment is administered;**
- **A description of how scores are reported (include links to sample reports as appropriate);**
- **A description of how the Assessment Provider supports implementation of the assessment, including any technical assistance. (3 pages max)**

Previously approved by the NYSED for use as a measure of teacher and principal effectiveness for grades K–12 under Education Law §3012-c, *i-Ready Diagnostic* for reading and math is an effective, research-based, web-based diagnostic assessment for students in grades K–12.

Using a computer with internet access and a headset, students take the online diagnostic that assesses down to the sub-skill level in reading and math. *i-Ready's* sophisticated computer-adaptive algorithms ensure learners are assessed efficiently across a number of knowledge domains. The questioning format adapts as students respond to each question—getting more or less challenging as needed—to complete the diagnosis and identify each child's performance level. The adaptive nature of the assessments meets students at their own skill level, so they experience success as well as challenge while *i-Ready* accurately measures their mastery of New York State Learning Standards.

i-Ready includes a powerful management and reporting suite for delivery of essential performance information at the district, school, class, and student levels. Actionable, real-time reports guide educators in identifying the instructional needs and abilities of individual students and instructional groups, and include explicit next steps for remediating areas of academic weakness. For sample reports, go to www.curriculumassociates.com/products/iready/i-ready-reports.aspx. For a narrated program tour, go to www.i-ready.com/tour.

i-Ready Diagnostic is aligned to the New York Learning Standards for reading and math. In an independent study conducted by the Educational Research Institute of America, *i-Ready* was found to have strong correlations to the 2013 and 2014 New York State Assessments. In 2013, correlations ranged from .77-.85 across grades and subjects. In 2014, the correlation for ELA across grades 3-8 was .82 and in mathematics across grades 3-8 was .81. In addition, *i-Ready* successfully predicted proficiency on the assessment for 85 percent of students. Plus, *i-Ready* accurately identified individual student needs on the standards to drive targeted instruction—both student and teacher-led.

Scoring and Reporting. The primary function and purpose of *i-Ready Diagnostic* is to make appropriate instructional recommendations and placement decisions for students performing at different levels within the K–12 grade span. A grade-level-ready student has demonstrated sufficient skills at the beginning of the school year that he or she is considered ready for curriculum at the chronological grade. To determine scale score thresholds for the performance standard for each grade level, a separate performance standard-setting meeting was held for each subject.

One of the greatest advantages of using the *i-Ready* system over traditional paper-based assessments is the fact that test results are instantly available to administrators once students have completed the test. *i-Ready* provides numerous reporting views that make the viewing, sorting, and analysis of data straightforward and fast—and reports are focused on accuracy and ease of access to a range of meaningful data. Access is secure via unique user logins and an intuitive interface, interpretation of results is streamlined for educators of all backgrounds and experience levels, and there is an emphasis on the data that is most likely to inform effective instructional decision making.

The program is web-based, so all reporting is instantaneous and available at anytime, anywhere the authorized user has Internet access. Users receive unique logins that enable a customized view of the data. For instance, each teacher has access only to his or her class(es), while a superintendent has access to all schools, classes, and individual students in his or her district. Data are also available for individual domains and by teacher, so overall gains over time may be tracked. All reports may be printed or downloaded in PDF; many data may also be exported as CSV files.

New York HEDI Report. This district-level report (see sample in Appendix A) shows teacher performance in summary and detail form, based on the four levels of teaching effectiveness using district-wide targets—Highly Effective, Effective, Developing, and Ineffective.

Instructional Modules. Math and ELA instructional modules within *i-Ready Instruction* are available as an optional add-on to *i-Ready Diagnostic*. The instructional component adapts to the student's performance level to deliver differentiated instruction. Student Response to Instruction Reports are then immediately available to the teacher to inform instruction.

Implementation Plan Overview. Curriculum Associates employs a straight-forward account set-up process to get school districts and BOCES up and running quickly with *i-Ready*. We support LEA and school staffs in assessment administration and analysis of results:

1. We assign a primary point of contact (Account Manager) to the LEA.
2. The LEA works with the Account Manager to set up the site accounts prior to training and professional development.
3. We hold a deployment meeting to determine the LEA's specific needs and set the training schedule.
4. We offer professional development via customized onsite sessions, on topics such as understanding and administering *i-Ready* assessments, accessing and analyzing student results, and using *i-Ready* data to make informed instructional decisions.
5. We offer administrator training on topics that include implementing *i-Ready* and effectively using the assessment as a measure of student growth for purposes of teacher and principal evaluation.

Our in-house Technical Support and Customer Services teams are available throughout the implementation to assist users with any ongoing needs. *i-Ready* users may call, email, or chat with Curriculum Associates' support team: **800-225-0248,** www.i-Ready.com**, or** *i-Ready*support@cainc.com. Phone support is available Monday through Thursday from 8:30 AM through 7:00 PM Eastern and Friday from 8:30 AM through 5:00 PM (excluding holidays). After-hours support is available via email.

Please provide an overview of the student-level growth model or target setting model for SLOs for districts and BOCES, along with how student-level growth scores are aggregated to the create teacher-level scores, and how those teacher-level scores are converted to New York State's 0-20 metric.

In the 2015–2016 school year, Curriculum Associates has recommended using a simple gain score as targets for student growth for each grade and subject. A simple gain score is the difference of the last *i-Ready Diagnostic* assessment and the first *i-Ready Diagnostic* assessment (the gain). The recommended gain score targets by grade and subject are presented in the tables below.

	READING/ELA							
Grade	**0.75 Year Ranges**	**0.75 Year Suggestion**	**1.0 Year Ranges**	**1.0 Year Suggestion**	**1.5 Year Ranges**	**1.5 Year Suggestion**	**2.0 Year Ranges**	**2.0 Year Suggestion**
K	34 – 45	34	46 – 60	46	69 – 90	90	92 – 120	120
1	34 – 45	34	46 – 60	46	69 – 90	90	92 – 120	120
2	29 – 39	29	39 – 52	39	59 – 78	78	78 – 104	104
3	22 – 32	22	30 – 44	30	45 – 66	66	60 – 88	88
4	14 – 20	14	19 – 27	19	29 – 41	41	38 – 54	54
5	14 – 20	14	19 – 27	19	29 – 41	41	38 – 54	54
6	11 – 17	11	15 – 23	15	23 – 35	35	30 – 46	46
7	11 – 17	11	15 – 23	15	23 – 35	35	30 – 46	46
8	11 – 17	11	15 – 23	15	23 – 35	35	30 – 46	46

	MATHEMATICS							
Grade	**0.75 Year Ranges**	**0.75 Year Suggestion**	**1.0 Year Ranges**	**1.0 Year Suggestion**	**1.5 Year Ranges**	**1.5 Year Suggestion**	**2.0 Year Ranges**	**2.0 Year Suggestion**
K	24 – 30	24	32 – 41	32	48 – 62	62	64 – 82	82
1	24 – 30	24	32 – 41	32	48 – 62	62	64 – 82	82
2	22 – 28	22	30 – 39	30	45 – 59	59	60 – 78	78
3	21 – 27	21	28 – 37	28	42 – 56	56	56 – 74	74
4	16 – 23	16	22 – 31	22	33 – 47	47	44 – 62	62
5	16 – 23	16	22 – 31	22	33 – 47	47	44 – 62	62
6	9 – 17	9	13 – 23	13	20 – 35	35	26 – 46	46
7	9 – 17	9	13 – 23	13	20 – 35	35	26 – 46	46
8	9 – 17	9	13 – 23	13	20 – 35	35	26 – 46	46

These targets should be viewed as estimates to help ensure that students stay on track, and do not fall further behind. However, some students who start the year behind their peers will need intensive intervention and would need to grow more than the suggested one year target to close the gap with their peers at the end of the year. For these situations, the target could be increased to suggest more aggressive growth aspirations.

Target setting should also consider the amount of instructional time between the first and last diagnostic. Specifically, the above targets are based on 30 weeks between the first and last assessment. However, if significantly less time is expected between the first and last assessment, a lower target might be set to take into account proration of the target over the anticipated number of weeks (i.e., a target might be 80 percent of the 1.0 year target if only 24 weeks are planned between the first and last test).

Only one target can be set by subject and grade in an *i-Ready* account; however, for the purposes of evaluation, a teacher could develop a target for each student and then take the average of these desired gains and make that his or her overall target. This target could be tracked outside of the system and translated into a teacher-effectiveness metric. For example, the following class is a class of 10 fourth-grade mathematics students. The one year target is 22 scale points:

Name	Original Target	Multiplier 1	Multiplier 2	Final Target
Anna	22	1	.83 (25/30 weeks)	18.26
Beatrix	22	1.1	.83	20.086
Connor	22	1.1	.83	20.086
DeAndre	22	1	.83	18.26
Elaine	22	1	.83	18.26
Frederick	22	1.1	.83	20.086
George	22	1.1	.83	20.086
Hector	22	1	.83	18.26
Isabella	22	1.1	.83	20.086
Juanita	22	1.1	.83	20.086

In this case, the administrator decided that the target should be reduced to 83 percent of the target, because the time between the first and last assessments was significantly less than the requisite 30 weeks. Also, in the case of six students—Beatrix, Connor, Frederick, George, Isabella, and Juanita—the teacher wanted to set a more aggressive growth target (110 percent of the 1.0 years), because those children are starting the year well below grade level.

Adding the numbers in the Final Target column and dividing by the number of students gives the teacher's average growth target of 19.3556, which rounds to 19. This target could then be used to determine a teacher rating on the scale: Highly Effective, Effective, Developing, or Ineffective. The target should be multiplied by .75, 1, and 1.5 respectively, to convert to the rating scale and determine the cut points for the HEDI categories. In this example, the following scores would result for evaluation:

- Highly Effective—29 or higher
- Effective—19 to 28
- Developing—15 to 18
- Ineffective—Under 15*

* To determine how these numbers can be changed into a 20-point scale for HEDI, please refer to the crosswalk below.

In the end, while the *i-Ready* system may not capture the personalized ratings for each teacher, the system will determine the final adjusted average gains for each grade or class, and these gain scores can be used to inform the teacher's accountability rating by evaluating against the rating scale above.

Curriculum Associates recommends aggregating scores in the following manner to determine an adjusted average score for each teacher's students. First, find the gain for each student by taking the difference in scale scores and subtracting the student's first assessment from their last assessment. Then, for students who show score reversals or negative gains, set these scores equal to zero (Curriculum Associates defaults to considering these situations as having no evidence of a gain in ability level, and therefore they are counted as zero). Next, determine the arithmetic mean of all of these values, including the zeroes and positive gains. Finally, take this adjusted average and divide by the target score. This will provide a percentage gain which can be translated into a HEDI metric and a score on a 20-point scale.

We created a crosswalk (figure below) that maps scores from the aggregated teacher-level growth score to the teacher and principal evaluation 20-point metric by taking the target goals and multiplying by the percentages as shown in the chart below. The blacked-out marks show where the aggregated score may be repeated from rating to rating. In these cases, we recommend going with the higher rating for the principal and teacher evaluation. The current scores for *Effective* reflect the default targets. However, this chart can be recreated with customized targets in the following manner. First, replace the values in the 15-point column with the new targets; then multiply the percentage at the top of each column by the new target to get the new minimum value for each cell. For the column worth 13 points, we recommend multiplying by 75 percent and then rounding down.

	Highly Effective			Effective			Developing		Ineffective												
	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Reading	200%	175%	150%	140%	120%	100%	90%	75%	60%	55%	50%	45%	40%	35%	30%	25%	20%	15%	10%	5%	<5%
Grade K	92	81	69	64	55	46	41	34	28	25	23	21	18	16	14	12	9	7	5	2	<2
Grade 1	92	81	69	64	55	46	41	34	28	25	23	21	18	16	14	12	9	7	5	2	<2
Grade 2	78	68	59	55	47	39	35	29	23	21	20	18	16	14	12	10	8	6	4	2	<2
Grade 3	60	53	45	42	36	30	27	22	18	17	15	14	12	11	9	8	6	5	3	2	<2
Grade 4	38	33	29	27	23	19	17	14	11	10		9	8	7	6	5	4	3	2	1	<1
Grade 5	38	33	29	27	23	19	17	14	11	10		9	8	7	6	5	4	3	2	1	<1
Grade 6	30	26	23	21	18	15	14	11	9	8		7	6	5		4	3	2		1	<1
Grade 7	30	26	23	21	18	15	14	11	9	8		7	6	5		4	3	2		1	<1
Grade 8	30	26	23	21	18	15	14	11	9	8		7	6	5		4	3	2		1	<1
Grade 9	24	21	18	17	14	12	11	9	7		6	5		4		3	2		1		<1
Grade 10	24	21	18	17	14	12	11	9	7		6	5		4		3	2		1		<1
Grade 11	24	21	18	17	14	12	11	9	7		6	5		4		3	2		1		<1
Grade 12	24	21	18	17	14	12	11	9	7		6	5		4		3	2		1		<1
	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Math	200%	175%	150%	140%	120%	100%	90%	75%	60%	55%	50%	45%	40%	35%	30%	25%	20%	15%	10%	5%	<5%
Grade K	64	56	48	45	38	32	29	24	19	18	16	14	13	11	10	8	6	5	3	2	<2
Grade 1	64	56	48	45	38	32	29	24	19	18	16	14	13	11	10	8	6	5	3	2	<2
Grade 2	60	53	45	42	36	30	27	22	18	17	15	14	12	11	9	8	6	5	3	2	<2
Grade 3	56	49	42	39	34	28	25	21	17	15	14	13	11	10	8	7	6	4	3	1	<1
Grade 4	44	39	33	31	26	22	20	16	13	12	11	10	9	8	7	6	4	3	2	1	<1
Grade 5	44	39	33	31	26	22	20	16	13	12	11	10	9	8	7	6	4	3	2	1	<1
Grade 6	26	23	20	18	16	13	12	9	8	7		6	5		4	3		2	1		<1
Grade 7	26	23	20	18	16	13	12	9	8	7		6	5		4	3		2	1		<1
Grade 8	26	23	20	18	16	13	12	9	8	7		6	5		4	3		2	1		<1
Grade 9	26	23	20	18	16	13	12	9	8	7		6	5		4	3		2	1		<1
Grade 10	26	23	20	18	16	13	12	9	8	7		6	5		4	3		2	1		<1
Grade 11	26	23	20	18	16	13	12	9	8	7		6	5		4	3		2	1		<1
Grade 12	26	23	20	18	16	13	12	9	8	7		6	5		4	3		2	1		<1

Evidence of Fairness of Proposed Aggregated Teacher Growth Scores

Prior academic history can account for a significant difference in growth rates. In this case, prior academic history is estimated using the first placement score on the Fall administration of *i-Ready Diagnostic*. There are four placement groups to consider:

- Group 1: Students who place two or more levels below their chronological grade
- Group 2: Students who place one level below their chronological grade
- Group 3: Students who place *Early* on level in their chronological grade
- Group 4: Students who place *Mid*, *Late*, or *Above* their chronological grade

These different placements can be added as a multiplier to the methodology shared above. Curriculum Associates completed analyses on the variations in the score compared with all of the students, and we recommend the following multipliers for LEAs that want to account for these differences:

Multipliers for Prior Academic History, Mathematics and ELA					
Subject	**Grade Band**	**2/2+ Below**	**1 Below**	**Early**	**Mid**
Math	K-5	110%	100%	90%	70%
	6-8	120%	80%	80%	80%
ELA	K-5	130%	100%	80%	70%
	6-8	130%	80%	80%	80%

New York State Next Generation Assessment Priorities Please provide detail on how the proposed supplemental assessment l or assessment to be used with SLOs addresses each of the Next Generation Assessment Priorities below.	
Characteristics of Good ELA and Math Assessments (only applicable to ELA and math assessments):	The adaptive *i-Ready Diagnostic* leverages advanced technology to provide a deep, customized evaluation of every student and to track student growth consistently and continuously over the child's entire K–12 career. *i-Ready* also provides valid and reliable growth metrics across a district and school environment to optimize administrative decision-making for long-term performance improvements. Educators frequently choose adaptive assessments for the instruments' high precision and efficiency, allowing them to pinpoint student needs more accurately and in less time than with traditional fixed-form assessments. By dynamically selecting test items based on student response patterns, *i-Ready's* adaptive assessment is able to derive large amounts of information from a limited number of test items and can adapt to students with low and high abilities to obtain a more precise measurement of student performance. For administrators, an adaptive assessment has proven to be the most precise measure of student growth (*Growth, Precision, and CAT: An Examination of Gain Score Conditional SEM* by Tony D. Thompson, Research Report, December 2008). This real-time visibility enables immediate, effective course corrections.

	Administrators using *i-Ready* receive real-time, comprehensive insight into: • Percent of students performing below, on, and above grade level • Percent of students on track to meet annual growth expectations • Details by school, grade, class, and student ***i-Ready* for Reading/ELA** **Foundational Skills**. *i-Ready Diagnostic* assesses the foundational skills of phonological awareness, phonics, and high-frequency words: • Phonological Awareness. In *i-Ready Diagnostic*, test items use both audio and visual support to assess children's ability to distinguish and manipulate the sounds in spoken language. The stems, which comprise questions or directions, are read aloud to children, as are the individual answer choices. Children can use an audio icon to hear items and answer choices repeated. Many items are supported by art. Most items focus on segmenting and blending, because these skills are the most important building blocks for phonics instruction. Children are asked to segment and blend syllables, onset and rime, and individual phonemes. Other items assess children's ability to manipulate phonemes by deleting, adding, or substituting sounds in spoken words. • Phonics. *i-Ready Diagnostic* assesses children's ability to recognize sound-spelling correspondences. Test items use both audio and visual support. Some items—which comprise questions or directions—are read aloud, and children are asked to choose among written answer choices. Other items are written, and children are asked to choose among answer choices that are read aloud. As with phonological awareness, children can use an audio icon to hear items and answer choices repeated. Many items are supported by art. Items focus on a range of high-utility skills, including: letter recognition; one-to-one letter-sound correspondences; CVC and CCVC words—as well as other one-syllable words; consonant digraphs; final e conventions; r-controlled vowels; inflectional endings; vowel teams (digraphs and diphthongs); two-syllable words; three-, four-, and five-syllable words; and words with prefixes/suffixes. • High-Frequency Words. Words assessed and taught in *i-Ready Diagnostic & Instruction* are drawn from the Dolch Basic Word List (Dolch, 1941) and the Fry Instant Word List (Fry, 1999). Test items in *i-Ready Diagnostic* assess children's ability to recognize high-frequency words. Some stems—which comprise questions or directions—are read aloud, and children are asked to choose among written

	answer choices. Other stems are written, and children are asked to choose among answer choices that are read aloud. Children can use an audio icon to hear items and answer choices repeated. **Vocabulary.** Test items in *i-Ready Diagnostic* assess students' knowledge of both Tier 2 words (academic or literary words) and Tier 3 words (domain-specific or content-area words). Panels of teachers and reading specialists selected the words to be assessed, using research-based lists that included: • *Words Worth Teaching* (Biemiller, 2010) • *The Living Word Vocabulary* (Dale & O'Rourke, 1981) • *The Educator's Word Frequency Guide* (Zeno, 1995) • *The Academic Word List* (Coxhead, 2000) The panels made these selections to reflect the types of words children learn in various disciplines at different grade levels and in various stages of their lives. Test items assess knowledge of these words in context, and those aimed at early readers include visual support. Because oral vocabulary is a critical part of reading development, test items at Kindergarten through grade 2 are supported by audio. **Comprehension**. Students' abilities to understand both literary text and informational text are evaluated in *i-Ready Diagnostic*. The focus in Kindergarten is on listening comprehension. At this grade, comprehension items are supported by both audio and art. Reading comprehension is the focus at grade 1 and above. Students are presented with a passage, and interactive, multiple-choice items are shown next to the passage. When a passage has more than one page, students may page back and forth through it while still viewing the item. This format and process encourages students to find textual support for their selected answer. ***i-Ready* for Mathematics** The Common Core State Standards organize mathematical content within grades by domains—big ideas that connect topics across grades. A major goal of this grouping is to build understanding of mathematical concepts within each domain and how they progress across grades. *i-Ready Diagnostic* further organizes the Common Core Domains into four major groups: Number and Operations, Algebra and Algebraic Thinking, Measurement and Data, and Geometry.

	Number and Operations. In *i-Ready Diagnostic*, the items aligned to the Number and Operations in grades K–2 allow students to demonstrate proficiency in the skills associated with counting, whole numbers, the algorithms of the operations, and understanding of place value. In these grades, in the least difficult items, virtual manipulatives are used to help students show conceptual understanding of place value and the algorithms for adding and subtracting. For example, students can utilize a virtual base-ten block tool to help with regrouping for solving subtraction items. In grades 3–5, the items aligned to the Number and Operations domain allow students to demonstrate a deeper understanding of the concepts they learned in the primary grades, while also demonstrating their understanding of how these concepts expand into other sets of numbers, such as fractions and decimals. In this domain, there are technology-enhanced items where students are able to show conceptual understanding of fractions by plotting the fractions on a number line tool. In grades 6–8, the items aligned to the Number and Operations domain allow students to demonstrate their understanding of how the concepts they learned earlier in this domain extend to integers and real numbers. They also demonstrate their facility with converting among different representations of numbers. **Algebra and Algebraic Thinking**. In *i-Ready Diagnostic*, the grades K–2 items aligned to Algebra and Algebraic Thinking allow students to demonstrate their ability to represent problem situations with number sentences. As in Number and Operations, in these earlier grades, students use virtual manipulatives to represent these problem situations. For example, a 10-frame with counters can be used to represent what is meant by the equation 5 + 2 = 7, and how that may be manipulated to show understanding that 7 – 2 = 5. In grades 3–5, the items aligned to Algebra and Algebraic Thinking expand to include students' capabilities of modeling problems using equations. These items allow students to demonstrate their understanding by asking them to select the equation that best models a mathematical or real-world problem. In grades 6–8, the items aligned to Algebra and Algebraic Thinking expand on students' understanding of modeling problems to using different representations to solve the problems, including expressions and equations and functions. In these grades, students may represent situations by graphing a line that represents a situation on a coordinate graphing tool.

	In grades 9-12, the *i-Ready* Algebra domain expands to include the high school Common Core domains of Algebra, Functions, and Numbers and Quantity. In these domains, students extend work with algebraic relationships to polynomial, exponential, logarithmic, and other advanced functions; complex number systems, and vectors. They use equations and inequalities to model real-world and mathematical situations and to solve non-routine problems. **Measurement and Data.** In *i-Ready Diagnostic*, the items aligned to Measurement and Data allow students to observe, collect, display, organize, and interpret measures and data. In grades K–2, the items focus on measuring using virtual tools such as a ruler, and interpreting data displayed in simple graphs such as picture and bar graphs. In grades 3–5, the items aligned to Measurement and Data provide opportunities for students to demonstrate their extended understanding of more complex measurements and data sets. The items aligned to this domain in these grades also emphasize conceptual understanding of geometric measurement. For example, there is a tool that allows students to fill a rectangular prism with unit cubes to demonstrate an understanding of volume. In grades 6–8, the items no longer have any focus on geometric measurement, concentrating solely on the concepts of statistics and probability. Items ensure that students are given the opportunity to demonstrate their conceptual understanding of more complex data sets. Technology-enhanced items allow students to demonstrate their understanding of bivariate data by graphing linear functions that closely represent a data set. **Geometry**. In *i-Ready Diagnostic*, the items aligned to Geometry allow students to demonstrate proficiency in identifying, analyzing, and reasoning with shapes and figures. In grades K–2, the items are concentrated on two areas—students are provided the opportunity to demonstrate proficiency with the attributes of different shapes, and they are able to show connections to a conceptual understanding of fractions as part of a whole. Technology-enhanced items allow students to sort or identify shapes that have similar attributes. In grades 3–5, the items aligned to Geometry expand on students' understanding of figures and begin to assess student understanding of the attributes in hierarchies. These items also ask students to demonstrate a conceptual understanding of two-dimensional figures in space. Some of the technology-enhanced items have students plot shapes in the first quadrant of a coordinate grid. Other items may have them fill in a two-dimensional space with unit squares to help demonstrate proficiency with a conceptual understanding of area.

	In grades 6–8, there is somewhat of a shift in the domain. In grades K–5, the only geometric measurement concepts covered in the Geometry domain are those that deal with conceptual understanding of area. However, in grades 6–8, with the Measurement and Data domain focusing on Statistics and Probability, all of the geometric measurement concepts fall under the Geometry domain. These include area of composite figures, surface area, and volume. In grades 9-12, the Geometry domain expands to include both Geometry and Statistics and Probability from the high school Common Core domains. In these domains, students apply and prove theorems involving lines, angles, and figures to extend their understanding of geometric properties. They also employ logic and data to make informed decisions about real world situations. In addition to these concepts, higher-level geometric concepts are also assessed in *i-Ready* in grades 6–8. These concepts include relating transformations to congruence and similarity, and analyzing proofs of the Pythagorean Theorem and its converse. Some of *i-Ready Diagnostic's* technology-enhanced items in this domain at these grade levels use a virtual protractor to allow students to demonstrate proficiency with rotations.
Assessments Woven Tightly Into the Curriculum:	*i-Ready* may be administered seamlessly in conjunction with regular classroom instruction, as the assessment is given entirely online and the program automatically scores, analyzes, and reports student results in real-time. As each student works individually and at his or her own pace on the adaptive test, educators may administer *i-Ready* in small groups or to the whole class, for maximum flexibility. To support the day-to-day academic goals of the teacher, *i-Ready's* comprehensive reports provide explicit next steps for instruction and point-of-use lesson plan PDFs. Based on each student's and instructional group's identified needs, *i-Ready Diagnostic* reports also provide direct connection to optional online lessons via *i-Ready Instruction* (cost option) and recommendations for specific lessons in other Curriculum Associates' programs (such as *Ready®*). In these ways, *i-Ready* embodies the philosophy that learning is a continuous cycle of assessment linked to instruction.
Performance Assessment:	The *i-Ready Diagnostic* test bank includes thousands of multiple-choice and technology-enhanced assessment items, field tested with more than one million students to ensure they are accurate, valid, and reliable measures of the intended skills being assessed. The RFQ defines a performance assessment as one in which students are required to perform a task, including problem solving.

	i-Ready items emphasize conceptual understanding and procedural fluency, and many entail word problems/problem solving. For example, *i-Ready Diagnostic* contains mathematics items where students must bisect angles using a virtual compass and straight-edge or fill-in rectangular prisms with unit cubes to determine volume. The reading assessment contains items where students must pull out evidence from passages to support themes, rather than to just choose them from a limited number as in a selected response items. To reflect real-world use of mathematics as well as the Common Core, students have access to onscreen, interactive tools—including a calculator, spreadsheet tool, protractor, compass, straight-edge, and ruler—that may be needed as they answer items.
Efficient Time-Saving Assessments:	*i-Ready's* computer-adaptive format maximizes the yield of actionable data, while optimizing administration efficiency. The assessment enables educators to pinpoint student needs more accurately and in less time than with traditional fixed-form assessments. By dynamically selecting test items based on student response patterns, *i-Ready* is able to derive large amounts of information from a limited number of test items and can adapt to students with low and high ability to obtain a more precise measurement of student performance. When a student fails more difficult items, additional items assessing less difficult skills are presented to helps to. drive more precise targeting of instruction. Students receive 54–72 items per subject, and typically take 30–60 minutes per subject to complete the diagnostic. Testing may be completed in multiple shorter sessions. Average duration varies by subject and grade level, with grades K–3 tending toward the shorter end of the range. Additionally, variability exists in every grade given different student performance levels.
Technology:	*i-Ready Diagnostic* is a fully web-based, vendor-hosted, Software-as-a-Service application. This offers numerous benefits to the Board of Regents, NYSED, and New York educators. All program maintenance, updates, and upgrades are included in the highly cost-effective license fee, and we push them automatically to all end users for immediate implementation upon release—with no need for local installation or support. Student responses are automatically and immediately scored by the program's sophisticated analytics engine, which presents data reports in real time.

<table>
<tr><td></td><td>Authorized users have secure access to the system 24/7 (with the exception of system maintenance, scheduled during low usage periods), from any compatible, internet-enabled device. The web-based platform gives our development team the flexibility to rollout new features and enhancements multiple times each year, at no additional cost to active clients.

By virtue of being an online assessment employing computer-adaptive algorithms and technology-enhanced items, i-Ready Diagnostic helps to prepare and familiarize students with needed 21st-Century skills.</td></tr>
<tr><td>Degree to which the growth model must differentiate across New York State's four levels of teacher effectiveness (only applicable to supplemental assessments):</td><td>Our proposed growth model differentiates educators across the State's four levels of teacher effectiveness—Highly Effective, Effective, Developing, and Ineffective—very similarly to the distribution for New York's 2013-2014 distribution of teacher effectiveness scores. For all schools in i-Ready's New York K–8 population for 2014–2015, these categories are distributed as follows:

<table>
<tr><th>Subject</th><th>H</th><th>E</th><th>D</th><th>I</th></tr>
<tr><td>ELA</td><td>5%</td><td>62%</td><td>20%</td><td>13%</td></tr>
<tr><td>Math</td><td>3%</td><td>62%</td><td>20%</td><td>15%</td></tr>
</table>

These numbers are similar to the 2013–2014 growth ratings* for grades 4–8 for New York schools, shown here:

<table>
<tr><th></th><th>H</th><th>E</th><th>D</th><th>I</th></tr>
<tr><td>School</td><td>7%</td><td>76%</td><td>10%</td><td>7%</td></tr>
</table>

*Source: https://www.engageny.org/resource/technical-report-growth-measures-2013-14.</td></tr>
</table>

STUDENT ASSESSMENTS FOR TEACHER AND PRINCIPAL EVALUATION

FORM *G*

ATTESTATION OF TECHNICAL CRITERIA – SUPPLEMENTAL ASSESSMENTS WITH CORRESPONDING GROWTH MODELS

Please read each of the items below and check the corresponding box to ensure the fulfillment of the technical criteria outlined in the Technical Application on "FORM B-2".

PLEASE SUBMIT ONE "FORM G" FOR EACH APPLICANT. CO-APPLICANTS SHOULD SUBMIT SEPARATE FORMS.

COMPLETE THIS SECTION:

2.2(A) Narrative Overview of Proposed Supplemental Assessment and Associated Growth Model	
This application contains a short overview of the assessment being proposed, including the intended purpose of the assessment, and how the assessment is administered.	☒
For supplemental assessments, this application contains a description of the growth model and how it is used in conjunction with the assessment.	☒ ☐ N/A
For K–2 assessments, this application contains evidence that the proposed assessment is consistent with this RFQ's requirement that the assessment not be a "Traditional Standardized Assessment" as defined above in the section "Definitions of Key Terms Used in this RFQ."	☒ ☐ N/A
2.2(B) Evidence of Capability	
This application provides an overview of services provided by the Assessment Provider, including a description of the range of support / technical assistance that the Assessment Provider would provide to an LEA if selected by an LEA for this service.	☒
This application contains information as to whether the Applicant or Assessment Provider has been denied approval as a provider of assessment services in another state(s) and the reason(s) for such denial. If denied within New York State, the location and reason are indicated.	☐ ☒ N/A
2.2(C): Evidence of Copyright Owner/Assessment Representative History of Assessment Development	
This application contains evidence that the Copyright Owner/Assessment Representative has a history of developing assessments of student learning (achievement or growth) for the purpose of making defensible judgments about educator effectiveness.	☒ ☐ N/A

2.2(D)-i: Technical Documentation Related to Assessment and Student Growth Score Properties: RELIABILITY ***Both "minimum" and "desired" qualifications are listed. For the purposes of this RFQ, applications will only be rated against the "minimum" qualifications; however, NYSED's aspirational "desired" qualifications are also listed to identify possible future requirements for assessments and associated growth models.***	
For supplemental assessments used in conjunction with growth models: This application contains evidence of the *minimum* criteria for reliability: • Student test scores have adequate levels of reliability (e.g., coefficient alpha > 0.75). This application contains evidence of the *desired* criteria for reliability: • Standard errors provided for students growth scores. • Student growth classifications have adequate decision consistency. • Teacher effectiveness classifications demonstrate adequate consistency. *Examples include agreement statistics (e.g., kappa coefficients) based on simulation studies.*	**Check all that apply:** ☒ ☐ ☐ ☐
2.2(D)-ii: Technical Documentation Related to Assessment and Student Growth Score Properties: VALIDITY – ALIGNMENT ***Both "minimum" and "desired" qualifications are listed. For the purposes of this RFQ, applications will only be rated against the "minimum" qualifications; however, NYSED's aspirational "desired" qualifications are also listed to identify possible future requirements for assessments and associated growth models.***	
For supplemental assessments used in conjunction with growth models: This application contains evidence of the *minimum* criteria for alignment validity: • Evidence that test content is sufficiently aligned with New York State Learning Standards and covers a range of measurable standards. Documentation that demonstrates that: (a) at least 80% of the test measures content aligned with NYS learning standards, (b) no more than 20% of test content is aligned with other learning standards or objectives, and (c) a range of content from the NYS learning standards is measured *Note: Other relevant standards can be proposed if NYS Learning Standards do not apply to subject area.* This application contains evidence of the *desired* criteria for alignment validity: • 100% alignment between NYS Learning Standards and assessment.	**Check all that apply:** ☒ ☐
2.2(D)-iii: Technical Documentation Related to Assessment and Student Growth Score Properties: VALIDITY – RELATIONS TO OTHER VARIABLES ***Both "minimum" and "desired" qualifications are listed. For the purposes of this RFQ, applications will only be rated against the "minimum" qualifications; however, NYSED's aspirational "desired" qualifications are also listed to identify possible future requirements for assessments and associated growth models.***	
For supplemental assessments used in conjunction with growth models: This application contains evidence of the *minimum* criteria for validity in relation to other variables: • Evidence students' growth scores are correlated with other measures of student progress (e.g., r > .5 with measures such as the number of objectives mastered by a student over the course of the year, teachers' ratings of	**Check all that apply:**

students' progress, or scores from other assessments). This application contains evidence of the *desired* criteria for validity in relation to other variables: • Evidence teacher effectiveness ratings are positively correlated (e.g., r > .5) with other measures of teaching effectiveness.	☒ ☐
2.2(D)-iv: Technical Documentation Related to Assessment and Student Growth Score Properties: VALIDITY – INTERNAL STRUCTURE ***Both "minimum" and "desired" qualifications are listed. For the purposes of this RFQ, applications will only be rated against the "minimum" qualifications; however, NYSED's aspirational "desired" qualifications are also listed to identify possible future requirements for assessments and associated growth models.***	
For supplemental assessments used in conjunction with growth models: This application contains evidence of the *minimum* criteria for validity of internal structure: • Scale properties appropriate for growth model used (*see notes*). Total scores and subscores on student assessments should be supported by dimensionality analyses (e.g., IRT residual analyses, factor analyses). This application contains evidence of the *desired* criteria for validity of internal structure: • Evidence students' scores are on an interval scale. **Notes: If **gain score model** is used, evidence is needed that students' pretest and posttest scores are on the same scale. If **student growth percentile** model used, justification for the number of years included in the model should be provided. If **growth-to-proficiency**, projection, or **value-added models** are used, evidence is needed that the model explains a significant amount of variability in student achievement. Also, models should demonstrate robustness to missing data.*	**Check all that apply:** ☒ ☒
2.2(D)-v: Technical Documentation Related to Assessment and Student Growth Score Properties: UTILITY AND COMPREHENSIBILITY ***Both "minimum" and "desired" qualifications are listed. For the purposes of this RFQ, applications will only be rated against the "minimum" qualifications; however, NYSED's aspirational "desired" qualifications are also listed to identify possible future requirements for assessments and associated growth models.***	
For supplemental assessments used in conjunction with growth models: This application contains evidence of the *minimum* criteria for utility and comprehensibility: • Technical documentation that describes how student growth and educator effectiveness are calculated. This application contains evidence of the *desired* criteria for utility and comprehensibility: • Student growth reports support instructional improvement. Resources and supporting materials available to the field.	**Check all that apply:** ☒ ☒
2.2(E)-i: Technical Documentation Related to Aggregating Student-Level Growth Scores to Teacher-Level Scores: CREATION OF TEACHER LEVEL SCORES	
For supplemental assessments used in conjunction with growth models: This application includes a narrative description of how student-level scores are aggregated to create a single teacher-level score for each teacher.	☒ ☐ N/A

2.2(E)-ii: Technical Documentation Related to Aggregating Student-Level Growth Scores to Teacher-Level Scores: EXCLUSION RULES	
This application includes a description of any exclusion rules that remove students associated with a given teacher from the teacher's teacher-level score (either through a growth model or in conjunction with an SLO).	☒ ☐ N/A
2.2(F): Technical Documentation Related to Converting Teacher-Level Growth Score to New York State's 0-20 APPR Scale	
This application includes a crosswalk that maps scores on the assessment's aggregated teacher-level growth score to the required New York State teacher and principal evaluation metric, which ranges from 0-20.	☒
This application includes procedures for converting teacher-level growth scores to the 0-20 APPR scale comply with the New York Standards for each evaluation rating category, which are based on the following definitions.	☒
For supplemental assessments used in conjunction with growth models: This application includes an explanation of the assignment of HEDI rating categories based on the following ranges: • Highly Effective: results are well-above State average* for similar students • Effective: results meet State average* for similar students • Developing: results are below State average* for similar students • Ineffective: Results are well-below State average* for similar students	☒ ☐ N/A
2.2(G)-i: Technical Documentation Related to Fairness: TEST TAKERS Consistent with the new Testing Standards (2014), there is an increased focus in the industry on fairness of assessments and their uses. Please provide evidence of fairness for both the proposed assessment and, if applicable, the proposed growth model.	
This application includes evidence that the proposed assessments are fair to all test takers (e.g., Differential Item Functioning [DIF] / bias information, fairness evaluation / sensitivity review plan.)	☒
2.2(G)-ii: Technical Documentation Related to Fairness: TEACHER GROWTH SCORES	
This application includes evidence of fairness of the proposed aggregated teacher growth scores (e.g., lack of correlation between aggregated teacher growth scores and student demographics).	☒
The evidence of fairness of the proposed aggregated teacher growth scores includes an explanation of how the growth model incorporates (a) prior academic history, (b) poverty, (c) students with disabilities, and (d) English language learners.	☒ ☐ N/A

To be completed by the Copyright Owner/Assessment Representative of the assessment being proposed and, where necessary, the co-applicant LEA:

Curriculum Associates, LLC 1. Name of Organization (PLEASE PRINT/TYPE)	M. Vicky Hurwitz 4. Signature of Authorized Representative (PLEASE USE **BLUE** INK)
M. Vicky Hurwitz 2. Name of Authorized Representative (PLEASE PRINT/TYPE)	10/9/15 5. Date Signed
Vice President, Strategic Planning 3. Title of Authorized Representative (PLEASE PRINT/TYPE)	

1. Name of LEA (PLEASE PRINT/TYPE)	4. Signature of School Representative (PLEASE USE **BLUE** INK)
2. School Representative's Name (PLEASE PRINT/TYPE)	5. Date Signed
3. Title of School Representative (PLEASE PRINT/TYPE)	