

Acadience Math Assessment Information



The Acadience Math assessment will be administered statewide in Utah starting in the Fall of 2021. More information about the Acadience Math assessment may be found [here](#). The assessment is required in grades 1-3 and optional in kindergarten.

Why is the assessment being adopted?

In the 2020 Utah legislative session, [H.B. 114 Early Learning Training and Assessment Amendments](#) was passed to implement Utah Code [53E-4-307.5. Mathematics benchmark assessment](#) which states, “The state board may approve a benchmark assessment for use statewide by LEAs to assess the mathematics competency of students in kindergarten and grades 1 through 3.” Additional requirements may be found in the board rule [R277-406. Early Learning Program and Benchmark Assessments](#). This legislation was funded in the 2021 legislative session.

About Acadience Math

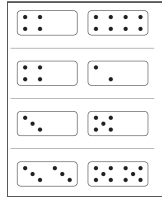
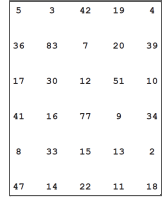
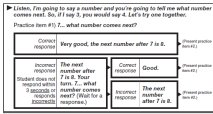
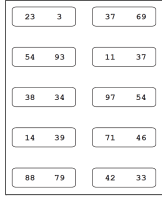
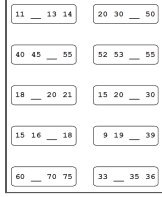
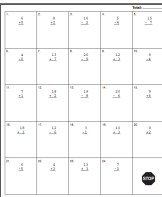
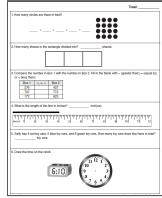
What is a benchmark assessment?

Benchmark assessment refers to testing all students within a school or grade three times per year for the purpose of identifying those who may be at risk for math difficulties. Benchmark assessment is always conducted using grade-level material. The measures administered for benchmark assessment vary by grade and time of year and include those measures that are most relevant for making instructional decisions at that time.

What is progress monitoring?

Progress monitoring refers to testing students more frequently who may be at risk for future math difficulty on the skill areas in which they are receiving instruction, to ensure that they are making adequate progress. Progress monitoring can be conducted using grade-level or out-of-grade materials, depending on the student’s needs. Decisions about the skill areas and levels to monitor are made at the individual student level.

An Overview of the Acadience Math Measures

Measure	Description	Example
1. Beginning Quantity Discrimination (BQD)	The student is presented with a sheet that contains a series of boxes with two patterns of dots in them. The student is asked to orally name the number of dots that is the larger quantity.	
2. Number Identification Fluency (NIF)	The student is presented with a sheet of numbers that range from 1–99 and is asked to say each number.	
3. Next Number Fluency (NNF)	The student is orally provided with a number that ranges from 1–99 and asked to say the next number.	
4. Advanced Quantity Discrimination (AQD)	The student is presented with a sheet that contains a series of boxes with two numbers in them. The student is asked to orally name the number that is the larger quantity.	
5. Missing Number Fluency (MNF)	The student is presented with a sheet that contains a series of boxes that have three numbers and a blank line. The student is asked to orally name the missing number.	
6. Computation (Comp)	The student is presented with a worksheet that consists of computation problems that they are asked to solve. The problems are grade-level specific and may include operations of addition, subtraction, multiplication, and/or division.	
7. Concepts and Applications (C&A)	The student is presented with a worksheet that consists of problems that assess understanding of mathematical concepts and vocabulary and asks the students to apply that knowledge to solve problems. The problems are grade-level specific.	

Alignment of Acadience Math Measures With Underlying Math Concepts

Underlying Concepts	Acadience Math Measures
Magnitude Comparison	Beginning Quantity Discrimination Advanced Quantity Discrimination
Subitization	Beginning Quantity Discrimination (indirectly measured)
Strategic Counting	Next Number Fluency Missing Number Fluency
Number Identification	Number Identification
Basic Computation	Computation
Understanding and Applying Math Concepts	Concepts and Applications

Acadience Math Alignment to Utah Core State Standards in Mathematics

See this [document for alignment by grade level and measure.](#)

Acadience Math Features

- They are **standardized assessments**, which means they are **administered and scored exactly the same way every time with every student**. An assessment must be standardized in order to be able to compare results across students or across time or to compare student scores to a target goal.
- They include **alternate forms of approximately equal difficulty** so that student progress can be measured over time.
- They are **brief** so that students can be assessed **efficiently and frequently**.
- They are **reliable**, which means they provide a relatively stable assessment of skills across time, different forms, and different assessors.
- They are **valid**, which means they are measuring the essential mathematics skills they are intended to measure.
- They are **sensitive to student growth** over relatively short periods of time.

Assessment Administration

Testing ethics are required as with all other statewide assessments.

Benchmark Windows

The benchmark assessment windows for math are the same as the reading benchmarks:

- Beginning of Year (BOY): Beginning of school year – September 30, 2021
- Middle of Year (MOY): December 1, 2021 – January 31, 2022
- End of Year (EOY): Middle of April – June 15, 2022

Who administers the benchmark assessment?

- Any educator who is employed by the LEA and has been trained on Acadience Math administration and scoring can conduct Acadience Math benchmark assessments.
- This might include: classroom teachers, special educators, specialists, paraeducators, administrators, or other LEA employees.

What training is available to administer the assessment?

- Assessment Directors will receive links to register a limited number of participants for synchronous virtual training that will be held in June and August 2021.
- Most test administrators will be trained by engaging in asynchronous Canvas training modules.
 - The modules will be separated by grade.
 - There will be the option to be trained in all measures for all grades or trained in specific grades.
 - Canvas modules will be available in July 2021.

Materials

More information about the Acadience Math assessment may be found [here](#). This link has information about required test materials available for download. **LEAs are responsible for printing their own materials.**

Time for Administering the Assessment

Time Required for Testing

The amount of time it will take to complete the benchmark assessment for each student will vary by grade and time of year. *Table 4.2* provides an estimate of the time required per student.

Table 4.2 Estimated Time Requirements for Benchmark Assessment

Grade	Time of Year and Measures	Time to Test	Total
Kindergarten	BOY, MOY, EOY: BQD, NIF, NNF	Three 1-minute tests given individually	3 minutes
First Grade	BOY: NIF, NNF, AQD, MNF, Computation	Four 1-minute tests given individually Two 2-minute tests done whole class	8 minutes
	MOY, EOY: AQD, MNF, Computation	Two 1-minute tests given individually Two 2-minute tests done whole class	6 minutes
Second Grade	BOY, MOY, EOY: Computation, Concepts and Applications	Two 2-minute tests and one 5-minute test done whole class	9 minutes
Third Grade	BOY, MOY, EOY: Computation, Concepts and Applications	Two 3- to 6-minute tests and one 10- to 16-minute test done whole class	18–28 minutes

Note: BOY = beginning of year, MOY = middle of year, EOY = end of year. Time to test does not take into account time required for scoring the measures.

Testing Approaches

- **Within-Classroom.** The within-classroom approach involves classroom teachers, and their assistants when available, conducting benchmark assessment on all of their students.
- **Schoolwide: One Day.** The schoolwide approach to conducting benchmark assessment in one day involves a large team of trained assessors. In this approach, the team assesses a class at a time
- **Schoolwide: Multiple Days.** The multi-day schoolwide approach uses a smaller team to cycle through all of the classrooms in a school.

Approved Accommodations for Acadience Math

Approved accommodations are those accommodations that are unlikely to change how the assessment functions. When approved accommodations are used, the scores can be reported and interpreted as official Acadience Math scores (see Table 2.1). Approved accommodations should be used only for students for whom the accommodations are necessary to provide an accurate assessment of student skills.

Table 2.1 Accommodations Approved for Use With Acadience Math

Approved Accommodations	Appropriate Measures
The use of student materials that have been enlarged or with larger print for students with visual impairments.	All except for NNF*
The use of colored overlays, filters, or lighting adjustments for students with visual impairments.	All except for NNF*
The use of assistive technology, such as hearing aids and assistive listening devices (ALDs), for students with hearing impairments.	All
The use of a marker or ruler to focus student attention on the materials for students who are not able to demonstrate their skills adequately without one. It is good practice to attempt the assessment first without a marker or ruler and then retest with an alternate form of the assessment using a marker or ruler if needed.	All except for NNF*

*Accommodation is not applicable to NNF as it is orally administered.

Alternate Assessment

- An alternate assessment will be available for students with significant cognitive disabilities.
- Assessment and training are in development and will be available for Fall 2021 administration.

Data Entry

Data Entry Deadlines

Data Entry deadlines are also the same as Acadience Reading :

- Beginning of Year (BOY): Data entry by October 30, 2021
- Middle of Year (MOY): Data entry by February 28, 2022
- End of Year (EOY): Data entry by June 30, 2022

Where is the data entered?

- Acadience Data Management (ADM) will be available when school starts in Fall 2021
- Acadience Learning Online (ALO) will be available October 1, 2021
- Amplify is only an Acadience Reading vendor and not available for Acadience Math

UTREx Coding

- Information coming soon

Use of Assessment Data

- It is important that the data are shared with those who teach the student regardless of who administers the testing.
- Training on data interpretation will be available in late Fall 2021.
- The Acadience Math measures were designed for formative assessment, or assessment that is used to adapt teaching to meet student needs. Unlike high-stakes testing, which is used for decisions that have substantial consequences for students, such as retention or placement in special education, formative assessment is considered low-stakes testing because the results are used for making modifications to instruction to enhance student learning (Kaminski & Cummings, 2007).

	Appropriate Uses	Inappropriate Uses
Student Level	<ul style="list-style-type: none">• Identify students who may be at risk for math difficulties• Help identify areas to target instructional support• Monitor at-risk students while they receive additional, targeted instruction	<ul style="list-style-type: none">• Label, track, or grade students• Make decisions regarding retention and promotion
Systems Level	<ul style="list-style-type: none">• Examine the effectiveness of a school's system of instructional supports	<ul style="list-style-type: none">• Evaluate teachers• Make decisions about funding• Make decisions about rewards for improved performance or sanctions for low performance

Pathways of Progress for Acadience Math

- Acadience Learning Pathways of Progress for Acadience Math offers a means of indexing student progress that can be used to evaluate the effectiveness of instruction, to establish meaningful, attainable, and ambitious goals, and to provide feedback on progress to students and educators. Pathways of Progress is based upon student growth percentiles (Betebenner, 2011). Thus, Pathways of Progress for Acadience Math is based on student rates of math progress relative to other students with the same initial skills. This information provides a normative reference for professionals to consider, along with the Acadience Math benchmarks, when establishing a goal and aimline for an individual student. Pathways of Progress is intended to be one of several frames of reference that should be considered when establishing a goal. More information about [Pathways of Progress \(PoP\)](#) may be found [here](#).

Sharing Results With Parents

- Following each benchmark assessment, Acadience Math results must be communicated to each student’s parents or guardians.
- Updated sample letters will be available Fall 2021.

Frequently Asked Questions (FAQ) about Acadience Math

Question:	What is the purpose of Acadience Math? How is it different from RISE or district benchmark assessments?
Answer:	There is not currently a statewide assessment in grades 1-2. The Acadience Math assessment will provide data for Grades K-3 to assess early learning of mathematics. Acadience Math is a screening assessment that is a quick and efficient measure to identify students who may be at risk for developing difficulties in mathematics. As part of a comprehensive assessment and intervention system, research recommends screening all students to identify those at risk for potential mathematics difficulties and provide interventions to students identified as at risk. RISE and benchmark assessments assess achievement in standards, but do not necessarily identify students for potential risk in a timely manner.

Question:	In an effort to reduce the time devoted to testing, is there a way that assessments districts and charters are already using could be substituted for Acadience Math?
Answer:	No. We understand that many districts and charters already have assessment practices of core standards in place and these are great measures of students' mastery of standards. At this time we do not have a state-wide standardized measure for students in mathematics in the early grades. District-based assessments vary widely from district to district and are not administered in a standardized way. We understand the concern with an additional assessment, but also view the potential assessment as one piece of data in a student’s mathematical knowledge and skills.

Question:	Some mathematics research indicates that timed tests create anxiety for students and may cause students to dislike math or label themselves as bad at math because they are not fast at computation. Why is the state implementing an assessment with a timed component?
Answer:	Current mathematics research does cite negative implications for timed testing in mathematics; however, the emphasis on those studies is regarding regular timed testing based on fact fluency. While the new assessment will have a timed component for administration, the emphasis would not be on the time. The benchmark assessment must be timed to keep the assessment standardized.

Question:	How is a screening assessment different from a diagnostic assessment?
Answer:	Acadience Math is a screening assessment that is a quick and efficient measure to identify students who may be at risk for developing difficulties in mathematics. Diagnostic assessments provide in-depth information about a student's performance in a particular concept or skill. It may be appropriate to use diagnostic assessments for some students demonstrating a need for intervention in particular areas of mathematics. The screening assessment is a quick and efficient measure for all students.

Question:	This assessment doesn't seem to assess the problem solving and thinking my students do in class. How is it useful? How can this assessment measure my students' understanding when the assessment items do not align to what instruction (discourse, tasks, etc.) looks like in my classroom?
Answer:	High quality mathematics instruction should include effective teaching practices based on problems solving and discourse. Classroom assessments may be used to assess these skills. Acadience Math is a screener used to identify students in need of intervention. Other assessments should be used to assess student understanding of standards and ability to problem solve.

Question:	Are there consequences for districts, schools, or teachers that don't meet the growth goals or requirements on the mathematics and literacy assessments?
Answer:	Districts and charters are already required to write and achieve state and local goals for literacy. The new legislation adds math to the requirements for the Early Learning Plan. Districts and charters will be expected to meet both state and locally-written goals based on assessment data. If the goals are not achieved at the district or charter level, then USBE increases their support to the district and charter leaders to further support in achieving their goals. If the district or charter does not achieve their goals for consecutive years then the support from USBE increases each year of failure.

Question:	Why should assessment items not be taught directly?
Answer:	The assessment items are predictors of success in mathematics. Teaching items directly will skew the data and not show an accurate picture of student understanding. It is best to implement effective instruction on the standards. In the same way it is not recommended to teach nonsense words in reading instruction, it is also not recommended to teach specific math measures.

Question:	Is the Acadience Math assessment available for grades 4-6?
Answer:	The Acadience Math assessment is available through Acadience Learning for grades K-6. Utah is funding the assessment for grades K-3. If an LEA would like to administer the assessment in grades 4-6, they may, but will need to work with Acadience Learning to pay for the data management from the LEA level. The cost is about \$1.50 per student.