

CurrTech Integrations

Milestone/Benchmark Assessments

Rule 1 – “Use only a small number of major classroom tests, but make sure these tests measure learning outcomes of indisputable importance.” – W. James Popham, ASCD 2001

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Philosophy of Mathematics

Project Narrative

CurrTech Integrations philosophy program is based on the research of Jay McTighe and Grant Wiggins: Understanding By Design, Renzulli and Reis: Schoolwide Enrichment Model and Jay McTighe and Carolyn Tomlison: Integrating Differentiated Instruction and UBD. The key ideas from the research have been aligned with CurrTech's Differentiated Mathematics Program (CDMP).

These key ideas are:

- Focus the curriculum on the “big ideas” through the use of milestone assessment.
- Include type 1, 2, and 3 Renzulli experiences within the CDMP program design of Enrichments, Performance Tasks and Tiered Instruction and Assessment. The milestone assessments contain at least 3 extended response items that are score using rubrics.
- Focus on training in the construction and use of tiered instruction and assessment for all learners. The milestone assessments blueprint requires at least three score points on each standard that are written using level assessments model.
- The goal of both the milestones and the higher level questions in instruction is based upon the research that learners should be challenged by using items “slightly too difficult”.
- The identifying and mapping of items into daily spiral reviews and milestones assures increased retention and increased access to a broader range of higher level questions.
- True understanding is demonstrated when learners can do and explain. The extended constructed response items in all milestones, enrichments, tiered instruction and assessment require explanation and application of concepts.

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Milestone/Benchmark Assessments

Why use CurrTech Integrations Milestones/Benchmark Assessments?

“Assessment should support the learning of important mathematics and furnish useful information to both teachers and students.” (Principle and Standards for School Mathematics, NCTM 2000)

CurrTech Integrations Milestones/Benchmark Assessments have been designed and field tested by teachers to support effective instructional decision making. The standards/benchmarks for each quarterly assessment are based on the big ideas that are truly essential and enduring. During the development phase teachers asked themselves “what’s worth understanding?” “What powerful ideas should all students know?” Teachers agreed upon 5 – 7 big ideas for each quarterly assessment. These quarterly assessments which are carefully aligned with curriculum and instruction provide teachers, schools and districts with formative data related to progress toward achieving yearly goals. Teachers, schools, and districts use this formative data to make on-going decisions about students, instruction, and curriculum.

UBD STAGE 2 – “What evidence will show that students understand?” “How will we know if students have achieved the desired results and met the standards?” “What will we accept as evidence of student understanding and proficiency?” “The backward design orientation suggests that we think about a unit or course (grade) in terms of the collected assessment evidence needed to document and validate that the desired learning has been achieved. . .” 1998 – Wiggins and McTighe
CurrTech Integrations milestone assessments use a blueprint to ensure that the data collected is credible evidence of the desired learning and instructional effectiveness, and that a match exists between what’s assessed and what is taught!

CurrTech Integrations Milestone/Benchmark Assessments

- Provides additional interim standards-based information on what students know and are able to do.
- Enables teachers to compare information on performance in each class.
- Provides an appropriate opportunity for teachers to share strategies and information on a shared assessment.
- Provides schools with timely information to identify needed resources and to adjust curriculum and allocation of resources.
- Makes standards visible and provides a locally controlled standard to evaluate performance over time.

- Raises expectations by challenging students to extend problem solving and reasoning skills.

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Frequently Asked Questions About Math Milestone/Benchmark Assessments

What is a Math Milestone?

A mathematics milestone is a quarterly math assessment that measures student progress on 5 – 7 standards (Big Ideas) to support effective instructional decision making. The standards are selected by teachers and consultants to reflect a balanced view of each student's progress toward meeting state and district goals in mathematics.

How is a Milestone test different from my chapter test in my textbook?

Math Milestones were designed by teachers and educational consultants to assess their effectiveness as valuable indicators of student performance on developmental concepts linked to state and district standards. Therefore, all of the items focus on significant content linked to performance on state and district standards. These assessments afford teachers, schools, and student the opportunity to have interim data that can be used to inform instructional decisions while the student is still in your classroom.

Math milestones are designed to match both the form and the function of state and district test items with the return of data in time to make a difference in the classroom. Unlike state tests that are 1 – 4 years after instruction offer limited help to teachers faced with the need to make daily instructional decisions. Additionally, textbooks and standardized tests offer only partial matches to state and district standards and do not offer the teacher an organized set of data on student, classroom, school, and district performance.

How does CurrTech Integrations items align with standards?

CurrTech Integrations uses a checklist to validate that all items truly assess what is purported. Teachers use the checklist to determine the alignment with the big ideas identified by the district. CurrTech Integrations Milestones/Benchmarks are carefully aligned before use by teachers in the district.

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Milestone/Benchmark

Checklist for its Standards Based Assessments

1. Does the item assess the standard/benchmark?
2. Could the student complete the assessment without showing evidence of understanding?
3. Is the assessment clearly written?
4. Does the assessment focus on providing evidence of key concepts in the standard?
5. Does the assessment provide opportunities for self – assessment?
6. Does the assessment offer opportunities for error analysis?

How can I use the data from the Math Milestones?

Math Milestones are one of the assessment tools you will need to use in an effective assessment system. While the Milestones provide a look at student performance over time, quarterly, you will be collecting information daily to monitor student progress on the content uncovered in your daily instructional program. Use of Tiered Assessment and Instruction Bank items will help you to fill in the places where students need a specific level of instruction to build a conceptual understanding of content or process found in the standards.

As a teacher, you can:

- Identify areas that may need re-teaching in the coming quarter for specific students or sub-groups of your class.
- Share effective strategies based upon the simple review of classroom performance by standards.
- Modifying long range plans to find opportunities to reinforce areas of need.
- Save time by moving on to new content where performance indicates strong understanding.

As an administrator/curriculum planner, you can:

- Support promising practices evident in strong student performance.
- Plan for staff development related to content knowledge or pedagogy in areas that indicate school or district level need.
- Evaluate the effectiveness of current textbooks and curricula well before the return of state test data.

What is the format of the Math Milestone?

Math Milestones include parts A and B. Part A includes selected response items constructed to provide an appropriate range of difficulty to challenge all students. Each item includes three distracters and one correct response. In grades 1 – 2 students will write in the test booklets and the teacher will collect responses. In grades 3 and up answers will be indicated on a bubble sheet that will be scanned and scored.

Part B will include two – three constructed response items. Students will do their work in the test booklet. These items will be scored at the local school using pre-prepared scoring guides.

Questions range in difficulty from Level I to III on the Tiered Assessment Matrix.

With approximately 3 – 6 score points on a given standard you will have adequate information to form an opinion about what your students' know and what they need to know.

What is CurrTech Integrations Blueprint for Milestone/Benchmark Assessments?

1. Part A contains 20 – 30 selected response items with four possible responses.
2. The responses are arranged from least to greatest.
3. Part B contains 2 – 4 constructed response items.
4. Each constructed response item contains several parts.
5. Each milestone is designed for a maximum of 90 minutes.
6. In Part B, students may use an appropriate calculator. In Part A, students may/may not use a calculator depending on the standards for the milestone.
7. Each milestone has a set of exemplary responses for Part A and scoring guides for Part B.

What information will I receive on my student(s)?

Teachers will have data at the completion of the scoring process.

Teachers will receive information on individual students on each standard included in the test. They will also receive classroom data for each standard taught. As this data will focus on only 5 – 7 areas per test, teachers are able to make effective decisions regarding upcoming instruction. The benefits of the milestone design afford teachers, students and schools focused timely information and the opportunity to make a difference while students are building their skills and understanding.

What do teachers do with the data collected from milestone/benchmark assessments?

Teachers will:

- Record observations when scoring student work. (Appendix A)
- Review data reports for Milestones/Benchmarks.
- Identify standards where student show evidence of understanding.
- Identify needs for each student by standard.
- Identify misconceptions that inhibit performance.
- Identify the group of students who need long term intervention.
- Identify concepts within standards for re-teaching.
- Identify concepts within standards for review.
- Identify and make decisions on re-teaching, remediation and review models. (Appendix B)
- Use individual student folders to track performance and remediation (data to include milestones, tests, remedial work).

“Milestone/Benchmark Assessments data for each class is used to match the right intervention with the right student and the right time.”

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What I learned from scoring my students' work.

First:

Write down what you observe as you score your students' papers.

Second:

Prioritize your observations from most important to least important.

Models for Remediation

1. Spiral Reviews
2. Small Group Instruction
3. Whole Group Re-teaching
4. Support Staff Intervention
5. After School Programs

Determining Criteria

How can we use data to determine which model(s) is best for each student?

Spiral Reviews _____

Small Group Instruction _____

Whole Group Re-teaching _____

Support Staff Intervention _____

After School Programs _____

Others _____
