

CurrTech Integrations

***Performance Tasks***

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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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## **Performance Assessment Tasks**

“Carefully crafted assessment devices would ask students to supply answers, perform observable acts, demonstrate skills, and supply portfolios of their work.”

From Gatekeeper to Gateway: Transforming Testing in America

CurrTech Integrations’ Performance Assessments are intentionally designed to enable students to show evidence of what they know and are able to do relative to standards and benchmarks. Performance assessments require students to perform the exact behaviors expected of them as learners at an independent level.

CurrTech Integrations’ task overviews provide introductory information on the purpose, the audience, the role of the student, and the context of the task. The purpose establishes a meaningful reason that engages the student in the problem. The role helps the student explore situations in which they may be asked to use their knowledge in the future. The audience(s) provides a range of school and community appropriate targets for student products and performances. Combined with context, which ties these elements together in a relevant situation, these elements form the basis for an engaging and thematically connected series of experiences and occasions for approaching and solving real world problems. It is these qualities that make Performance Tasks more than a series of discrete “fun” activities.

Performance Tasks include a two part format featuring a text-in-text teacher’s guide that includes: overview/context, materials, approximate time, exemplary responses, teacher notes and evaluative criteria, and a student booklet containing black line masters for student use.

For a successful implementation teacher must operate as coaches and facilitators in an environment that encourages risk taking and fosters independent learning. When teachers operate from an agreed upon set of standards and evaluative criteria, students are able to take on the exciting role of learner, problem solver, and discoverer. Through the use of clear standards and high quality assessments we can assure that students have the best chance to be successful.

## **Why are CDMP authentic Performance Tasks essential for all students?**

Newmann, Bryk and Nagoka (2001) investigated 24 restructured schools at the elementary, middle, and high school levels to study the effects of authentic pedagogy and assessment approaches in mathematics.

- Students with high levels of authentic pedagogy and assessment were helped substantially whether they were high or low achieving students.
- Another significant finding was that the inequalities between high and low performing students greatly decreased when normally low performing students were taught and assessed using these strategies.

## **What would we accept as evidence that students truly understand the key mathematical ideas, not just the math facts contained in the standards?**

Howard Gardner addressed this question in his book, The Unschooled Mind, “The test of understanding involves neither repetition of information learned nor the performance of practices mastered. Rather it involves the appropriate application of concepts and principles to questions or problems that are newly posed.” (Gardner, 1991) Similarly, Wiggins and McTighe, (1998) underscore the importance of anchoring assessment tasks in novel contexts in order to determine genuine understanding.

## **What criteria did CurrTech Integrations use in the development of performance tasks? Each performance task:**

1. assesses student performance on identified grade/course content standards.
2. establishes a meaningful context based on issues/problems, themes, and/or student interest.
3. requires the application of thinking skills/processes.
4. interrelates its activities to achieve the purpose of the task.
5. contains activities appropriate for the designated grade/course.
6. contains accurate and credible information.
7. elicits responses which reveal levels of performance.
8. calls for products/performances which address a clear purpose and audience.

9. establishes clear criteria related to the standards for evaluating student products and performances.
10. allows for use of implementation in the classroom.
11. provides teachers with useful information for adjusting instruction.

### **What are Performance Tasks?**

Unlike traditional and standardized assessments that evaluate the acquisition of knowledge and skills, performance tasks measure how effectively students can use their knowledge and skills. They evaluate how well students can deal with tasks that are authentic, real-life situations. The focus is on how students employ important concepts to solve open-ended problems that have no single solution, to analyze issues, and to debate opposing points of view.

They consist of open-ended and multi-step tasks designed to demonstrate how students apply what they have learned to solve problems and make decisions. Performance tasks link students' prior knowledge and skills with opportunities for new connections.

- An approach to the monitoring of students progress in relationship to identified standards.
- Requires the students to create an answer or product to demonstrate their application of knowledge or skills.

### **How can I use CurrTech Integrations Performance Tasks which include rubrics?**

A rubric is a scoring guide for evaluation of student work that includes specific performance criteria in a continuum of leveled description from low to high. CurrTech Integrations scoring guides clarify specific performance expectations and provide goals for student achievement. As rubrics define what performance students should do to demonstrate mastery of the mathematics standards, students learn the criteria for achievement levels through their use. Rubrics help learners to look at themselves in positive ways while continuing to take steps toward improving performance. Each student is provided feedback on his/her performance in a developmental continuum.

In the continual improvement model, teachers need to supply quality feedback about what students are learning, what they can do to improve and whether their mastery level is in line with expectations. Rubrics are tools to achieve this end. Teachers can determine mathematical error patterns and student strengths and specific next steps in the continuum of improvement of skills and processes. With practice, students are eventually able to self-assess what is required to move from their percent scoring level to his/her performance. Rubrics are a fantastic way to develop mathematical metacognitions.