

Figure This!



Monthly Math Assessment Tips

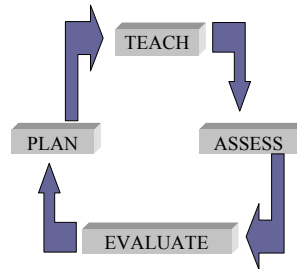
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Getting to the Point of Implementing Performance Assessments

Formative assessments, like the performance-based math tasks are designed to provide teachers with immediate information about their students' thinking and learning, which should be used as feedback to modify mathematics instruction and learning activities in the classroom.

In order for the performance tasks to be an effective teaching tool, teachers must take the time to analyze student's work to determine the next teaching step for that child. The teaching/learning cycle is a never ending process, and as a teacher assesses & evaluates student growth, the teacher must realize the importance of individualizing instruction to meet the needs of every student in their class.



As teachers assess student work, they begin to unravel what students know and are able to do within a given performance task. Student work should speak to the teacher. Students' leave clues that indicate their understanding of the mathematics in the problem. Teachers should evaluate student work based on the following analytical criteria:

- ✓ What the student understood about the mathematics being presented in the task.
- ✓ How the approaches (strategies) the student chose to solve the problem verify the student's total understanding of the task.
- ✓ The student's ability to communicate their math thinking.

As teachers gain experience evaluating student performances, they will begin to become proficient at assessing, scoring, evaluating, planning and implementing instruction using performance-based mathematics tasks.

An Evening with Dr. Ruth Parker, Ph.D.

Topic: What Parents Need to Know about Mathematics for Today and the Future

When: Monday, March 26th, 2001 6:30pm – 8:45pm

Where: TVI Boardroom at Smith Brasher Hall

AND

When: Tuesday March 27th, 2001 6:30pm – 8:45pm

Where: Cibola High School Performing Arts Center

Please invite parents to attend this very informative lecture.

- **Admission is free, if you plan to attend please contact Rita Balderas at 848-8716 or Balderas@aps.edu**

Using Performance Tasks to Guide Instruction

The task **To the Detail** is a 3 – 5 task. The benchmark paper being analyzed is from a fourth grade student. Although the student demonstrates an understanding of elapsed time, s/he is unable to find a correct solution to the task, and is given a holistic score of **Apprentice**. Teachers should use the following example as a guide for implementing performance-based mathematics instruction in their own classes.

Mike was born on February 20, 1988 at 11:05 AM. His birthday falls on a Friday this year, but he will be celebrating it with a party on Saturday, February 21, 1998 at 3:00 PM. His mom wants to write the **exact** age he will be at the start of his party on the birthday cake she made. How could she write it?

	Understanding	Strategy	Communication
What the student knows and is able to do.	<p>The student:</p> <ul style="list-style-type: none"> Understands s/he must establish Mike's exact age so Mike's Mother can write the age on the birthday cake, but does not realize that s/he has incorrectly calculated Mike's exact age. 	<p>The student can:</p> <ul style="list-style-type: none"> Calculate elapsed time to determine the years and hours of Mike's age, but forgets to include the days. Demonstrates an understanding of clock math $11:05\text{am} + 3:55$ (3hrs. 55mins.) = 3:00pm. Verifies the accuracy of his/her math by checking their arithmetic. 	<p>The student:</p> <ul style="list-style-type: none"> Represents the cake and writes what they believe is Mike's exact age on the cake. Writes a summary of how s/he arrived at their solution, but the summary does not convey how s/he calculated their answer or provide any insight into his/her mathematical thinking. Uses some math terms/symbols to explain his/her thinking about the task.
Implications for Instruction	<ul style="list-style-type: none"> Based only on the student's written work, it is difficult to determine if the student does not understand the concept of the additional day or whether s/he made a careless error in their calculations. Teacher directed questioning during the student's presentation of the problem would help to clarify the student's understanding (or misunderstanding) of the additional day. 	<ul style="list-style-type: none"> The student chose an appropriate strategy for solving the task, however the student did not find Mike's exact age and is not proficient at calculating elapsed time. The student needs to be given more experiences with predicting, estimating and calculating elapsed time (a 4th grade standard). 	<ul style="list-style-type: none"> The more a child verbalize his/her thinking the better it transfers to writing. The student should present his/her strategy for solving the problem and the teacher should allow the student additional time to record any additional insights they may have had during their presentation. In order for students to develop and be able to use math vocabulary, teachers should require students to build their own dictionary of mathematics terms and symbols.
Task Extensions	<ul style="list-style-type: none"> The student needs to demonstrate a total understanding of elapsed time and account for the additional day to find Mike's exact age. 	<ul style="list-style-type: none"> To build on the student's understanding of Mike's exact age, the total amount of elapsed time until Mike's birthday, & the concept of the additional day; make the 10 years a constant & require the student to convert the additional day, 3 hrs. and 55 mins. to hours and/or minutes. 	<ul style="list-style-type: none"> After the student has performed the task extension, require the student to rewrite their summary, encourage him/her to include all of the steps used to solve the task. S/he should include a statement, observation, and/or generalization about what s/he learned in their extension of the task.



Attention Teachers:

Coming in February 2001 the *APS Performance-Based Mathematics Assessment Task Bank*, Mathematics Tip Sheets and Monthly Tasks will be available on-line at:

www.rda.aps.edu

Having the *Task Bank* on-line gives all teachers access to the mathematics performance tasks and the accompanying resources. It also makes it easier for teachers to modify the tasks for use in their

FAQ's about APS Mathematics Assessments

Why were the 3 & 5 grade assessments developed and implemented?

Albuquerque Public Schools has developed a comprehensive assessment system, which provides for the use of:

- ❖ **State mandated assessments**, like the TerraNova, for accountability purposes.
- ❖ **District assessments** to measure student achievement toward state and local standards.
- ❖ **Classroom assessments**, which provide ongoing information for teachers regarding student progress.

The formative mathematics assessment in grades 3 & 5 were developed and implemented to provide information about student achievement toward standards in mathematics.

What is happening with the 3rd & 5th grade mathematics assessments?

Last year APS implemented formative math assessments in grades 3 & 5. Throughout the school year teachers provided feedback regarding the assessments. Overwhelmingly teachers expressed a need for support and training in administering, assessing and scoring the assessments.

As a result of the teachers' feedback, the district discontinued the required 3rd & 5th grade assessments this year. RDA moved forward to provide a year of support, both in training and materials, for all teachers in performance-based mathematics assessments.

What will the new mathematics assessments look like?

- The district is currently developing assessments in mathematics that are aligned with state and local standards.
- Current development includes standards based assessments in grades 1st, 2nd, 4th and 5th.
- Additionally, RDA continues to support classroom teachers with other on-going assessment tools.

What APS resources are available for teachers interested in using performance-based mathematics in their classroom?

- RDA has developed a *Performance-Based Mathematics Assessments Task Bank* for grades K - 8.
- The *task bank* provides teachers with:
 - ✓ Performance tasks
 - ✓ Information on implementing tasks
 - ✓ Assessing student work
 - ✓ Scoring performance tasks and using rubrics.
- In addition the task bank will be updated with monthly performance task and teacher tips on implementing performance-based mathematics assessments in the class.
- Throughout the year RDA will be providing workshops for teachers and administrators on performance-based mathematics assessment. Teachers can check the RDA web site www.rda.aps.edu for information about these workshops or call Donna Little-Kaumo at 848-8717.

Do I have to turn in my performance tasks to RDA?

- **NO**, do not return any of the performance task materials to RDA.
- The tasks are not designed as district wide assessments. The performance tasks were developed as support materials for teachers to gain experience in administering and scoring formative assessments, as well as giving students experiences with performance-based assessments.
- Teachers are encouraged to use the performance tasks freely in their classrooms, to make modifications to the tasks as needed, and share the information they have learned about their students with colleagues and parents.