Math Tidbits

Maryland Common Core State Curriculum Framework
Maryland School for the Deaf

VOLUME 2 ISSUE 7 FEBRUARY 19, 2013

Dear Teachers,

Assessment and instruction are tightly intertwined. And yet, when it comes to assessment, many of us automatically think of just the MSAs. This summative assessment, however, does not really help guide your instruction. Using formative assessment instead will help you better gauge your students' strengths and needs.

And what to put in your student's math portfolio? This is a question you may have asked yourself at least once this year. Chapter tests do not necessarily reflect the whole picture; we must also have insight into a child's thinking and progress. This newsletter contains some suggestions for insightful pieces that can go into your student's portfolio.

Julie Tibbitt

Mathematics Curriculum Coordinator

Columbia and Frederick Campuses

Julie.Tibbitt@msd.edu

Inside this issue:

Formative Assessment

Formative assessment is for learning, and summative assessment is of learning. One analogy has the man visiting his doctor at regular intervals for check-ups, and receiving information vital to his health care...this would be *formative* assessment...while, on the other hand, *summative* assessment would have the doctor finding out what went wrong only upon an autopsy. Likewise, this is how quarterly tests work; they give information upon the student's exit from instruction. Formative assessment, on the other hand, serves as the GPS for your instruction. It isn't necessary to wait until the end of the quarter before assessing students on understanding.

Tasks assessed with rubrics, short quizzes, worksheets are examples of formative assessment. Students can also summarize and reflect after learning. This helps them make further meaning of what they have learned, because they are reorganizing information in their heads. Dry-erase boards, Quick Write, and Write About (in which students use key vocabulary words to write about mathematical ideas) all are different ways to get students to express what they have learned. An S-O-S summary has the teacher presenting a statement, asking the student to give an opinion then supporting that opinion with evidence.

Formative assessment does not have to be written, and nor do they have to be long. Oftentimes, formative assessment can be done right during a lesson, like these two examples:

> *Observe a student working a division problem on the whiteboard. Or, write a problem and its solution on the board, and ask the class to vote on whether the solution is correct. One student can explain why the answer is correct, while another student explains why it is incorrect, and then the class can vote again.*

Rubrics are an excellent tool for formative assessments. Students can take ownership of their learning by getting a clear understanding of the expectations outlined in the rubric, and can target specific criterions they need to accomplish in order to improve the quality of their work. Rubrics can be written according to Bloom's Taxonomy. They certainly help students learn and teachers teach. Visit http://rubistar.4teachers.org to make your own rubrics.

Math Portfolios

Portfolios are traditionally thought of as a collection showcasing student achievement. Quarterly tests, along with a few word problem tasks, are typically put inside a student's math portfolio. This, however, does not give the new teacher much insight into the student's thinking or progress. Instead of focusing just on achievement, a portfolio should ideally also collect evidence of progress and math-solving skills.

Here are some examples of what could go into a portfolio, and these would give a new teacher much insight into that student's mathematical thinking and skills:

- Solutions to difficult problems that detail problem-solving abilities
- The use of mathematics in another discipline
- Problems created by the student
- An example of the student's group activity
- A written report on a major topic in math
- The student's written account of his or her growth in mathematics
- Responses to challenging questions and problems
- A written explanation of the contents of the portfolio

(Examples taken from http://www.teachervision.fen.com/math/teaching-methods/6380.html).

Students can be involved in the creation of their own portfolios. They should be given opportunities to monitor their individual self-growth, and this is an excellent way for them to see, for themselves, how much progress they have made over the course of a quarter (or year). One responsibility they could take is creating a table of contents for the portfolio. Taking ownership of one's learning helps ensure that one eventually becomes a 'responsible lifelong learner'.