

Training for Georgia Performance Standards

Day 2: Learning to Assess and Assessing to Learn

# Content Facilitator's Guide Mathematics Grade 8

### **Acknowledgements**



This training program was developed by the Georgia Department of Education as part of a series of professional development opportunities to help teachers increase student achievement through the use of the Georgia Performance Standards.

To get further help with this or any other math issues, you may go to the math webpage through the GaDoe website under Curriculum and Instruction.

#### Use of This Guide

The module materials, including a Content Facilitator's Guide, Participant's Guide, PowerPoint Presentation, and supplementary materials, are available to designated trainers throughout the state of Georgia who have successfully completed a Train-the-Trainer course offered through the Georgia Department of Education.

Materials (guides, presentations, etc.) will be available electronically on http://www.georgiastandards.org under the training tab after all trainings of Day Two have occurred. Consult the trainer for availability.

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Module Rationale	This training extends and builds upon Day One of training.
	The <u>first purpose of Day One of training was to introduce participants to the applicable standards</u> .
	The second purpose of Day One of training was to help participants understand the importance of having a curriculum map and to assist teachers in using this approach to develop units in support of the new curriculum standards. During Day One of the training, the emphasis was on the model itself—what it is, why it is important, and how it can be used so that the new GPS have a profound impact at the classroom level.
	The third purpose of Day One of the training was to help participants gain proficiency in identifying related standards and how standards from different strands can be integrated.
	The purpose of Day Two of the training is to teach Stage 2 of the Standards-Based Education Process.
Module Description	This module includes an instructor-led one-day session composed of several large and small group demonstrations, practice activities, and follow-up. The activities require the participants to jump into meaningful discussions and the follow up serves as a bridge to Day Three of training.
Module Goal	Demonstrate a deep understanding of the new Georgia Performance Standards and the Standards-Based Education approach, through thoughtful curriculum planning, development of formative and summative assessments, and the design of instruction matched to the standards and research-based best practices. This shall be measured by student performance on progress monitoring and standardized criterion-referenced tests.
	Note that the goal will not be reached by any single day of training. It will take preparation, seven days of classroom instruction, and follow up to master this goal.

#### Day Two Objectives

By the end of Day Two of training, participants will be able to:

- 1. Explain why assessment is Stage 2 in the Standards-Based Education process.
- 2. Identify the purpose of assessment in the classroom.
- 3. Differentiate among different types of assessment and assessment formats.
- 4. Given specific standards and a purpose for assessment, determine which assessment methods would be most appropriate at various times to increase student learning.
- 5. Given an assessment plan for a unit, identify whether it meets best practice standards for assessment.
- 6. Create a balanced assessment plan for a unit, including examples of performance tasks, rubrics, and constructed response items.

#### **Module Sequence**

#### Introduction

- ➤ Contact Information
- ➤ Bloom on Mastery
- ➤ Table Discussion
- ➤ A Rubric

#### What should we assess?

- ➤ Criteria for Good Tasks
- ➤ Assessment and the Unit Design Process
- ➤ Conceptual Understanding

#### Why should we assess?

- ➤ Task: Bungee Jump
- ➤ Accountability

#### How should we assess?

- ➤ Packing Parachutes
- ➤ Assessing for Learning vs. Grading
- ➤ Multiple Representations
- ➤ Types of Assessment
- ➤ Matching Assessments with Standards
- ➤ Analyzing Student Work
- **≻**Rubrics

#### **Putting It All Together**

- ➤ Designing an Assessment: Small Group Work
- ➤ Self-Assessment
- ➤ Field Assignment

Module Materials	Content Facilitator's Kit contents:
for Day Two of	<ul><li>Content Facilitator's Guide (one for each leader)</li></ul>
Training	Complete set of slide transparencies (PowerPoint)
_	> Participant's Guide (one per participant and one per leader)
	Other materials needed:
	> Flipchart paper
	> Items to Drop
	> Rubber Bands
	Yard sticks or Meter sticks
	Figure Stroke of Meter Stroke  Figure 5 Transport Stroke  Figure 5 Transport Stroke St
	Pencils/Pens
	<ul> <li>Painters tape to post charts</li> </ul>
	> Handouts:
	Bloom on Mastery
	Bungee Jump
	Sample Rubrics
	Equipment:
	Overhead projector or computer and LCD projector

### Agenda



#### Introduction

- ➤ Contact Information
- ➤ Bloom on Mastery
- ➤ Table Discussion
- ➤ A Rubric

#### What should we assess?

- ➤ Criteria for Good Tasks
- ➤ Assessment and the Unit Design Process
- ➤ Conceptual Understanding

#### Why should we assess?

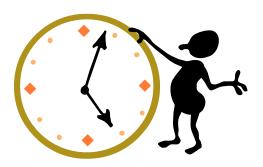
- ➤ Task: Bungee Jump
- **≻**Accountability

#### How should we assess?

- ➤ Packing Parachutes
- ➤ Assessing for Learning vs. Grading
- ➤ Multiple Representations
- ➤ Types of Assessment
- ➤ Matching Assessments with Standards
- ➤ Analyzing Student Work
- ➤ Rubrics

#### **Putting It All Together**

- ➤ Designing an Assessment: Small Group Work
- ➤ Self-Assessment
- ➤ Field Assignment



### Introduction

Overview	During the introduction, participants will discuss what they know about assessment. After a brief presentation of the day's agenda and objectives, participants will be presented with a handout on why mastery is important and attainable.
Objectives	<ul> <li>Describe how and why assessment is Stage 2 in the Standards-Based Education process.</li> <li>Identify the purposes of assessment in the classroom.</li> </ul>
Activities	<ul> <li>Read Bloom on Mastery handout and discuss</li> <li>Bungee Jump</li> <li>Table Discussion on three Essential Questions of the Day</li> <li>A Rubric</li> <li>Assess Using Your Rubric</li> </ul>
Materials	<ul> <li>Overhead projector or computer and LCD projector</li> <li>Transparencies or PowerPoint presentation</li> <li>Participant's Guide</li> <li>Bloom on Mastery handout</li> <li>Bungee Jump Handout</li> <li>Rubric Handouts</li> <li>Chart Paper</li> </ul>

#### **Bloom on Mastery**

#### Slide

Show slide, *Bloom on Mastery*(blank slide) then show the slide below, it is the last paragraph of the statement:

Most students (perhaps over 90 percent) CAN master what we teach. Our basic instructional task is to define what we mean by mastery of a subject and to discover methods and materials to help the largest proportion of our students reach it.

Benjamin S. Bloom (1971)

To start our focus today on assessment I want you to read the handout entitle Bloom on Mastery. Please consider the importance of what and when he made this statement.

Discuss the observations they can make about the way we sometimes view assessment in our schools.

#### Overview of the Module

#### Slide

Show slide, Table Discussion.

#### **Table Discussion**

- What should we assess?
- Why should we assess?
- · How should we assess?

Allow groups time to discuss the questions on the slide. Discuss in large group and explain that this is what we are going to discuss today. Place the comments on chart paper to use as reference throughout the day.

#### PG, p. 4

The agenda for today is located in your Participant's Guide on page 4.

In the Introduction to Assessment section we will discuss our goals and objectives for today.

First we will look at what it is we should be assessing.

Then we will discuss why we should assess.

Finally, we will discover how we should assess.

In the last section we will put it all together to develop an assessment that will drive the instruction of a unit we will continue to build in Days 3 and 4 of our training.

Before we go further, let's reflect on the redelivery process from Day 1.

Ask participants about the redelivery of Day 1.

On Chart Paper have each group brainstorm a list of successes, questions, and concerns.

Have a group reporter tell the rest of the groups the main points of the list.

Highlight the ones to address and work on during this session.

Show slide, According to Grant Wiggins....

## According to Grant Wiggins...

- What is to be assessed must be clear and explicit to all students.
- NO MORE SURPRISES!
- Rubrics must accompany all major assignments and assessments.

Slide

Show slide, A rubric is a set of rules that.

#### A rubric is a set of rules that

- · Shows levels of quality
- Communicates standards
- Tells students expectations for assessment task
- Is NOT a checklist (yes or no answers)
- Includes dimensions (criteria), indicators and a rating scale.

Use this slide to discuss what a rubric is and is not.

Show slide, What should we assess?



First, let's discuss WHAT we should assess. Let's consider a performance task.

#### Slide

Show slide, Which question shows a better understanding of lines?

### Which question shows a better understanding of lines?

1. Given a slope of 5 and a y-intercept of 3, write the equation of the line.

OR

2. A company that produces pens has n pens in stock at the beginning of a certain day. It produces these pens at a constant rate r for the entire day. If that day, pens have been produced at a greater constant rate, write an equation that can be used to determine the number of pens produced that day.

Let participants have time to read the slide quietly and then discuss at their tables. After they have discussed at their tables, let them share with the large group.

Next, show the slide, A Task?

#### A TASK?

Joe and Sue own a chain of ice cream stores. They have found that they sell an average of 1500 cones per summer day when they charge \$1.00 each and 1200 cones per summer day when they charge \$1.25 each.

a. Write these two pieces of data as ordered pairs

- b. Find the slope of the line between these ordered pairs.
- c. Use the slope and an ordered pair to write an equation of the line.
- d. Use this equation to predict the number of cones the will be sell at \$1.30 each.

Let participants have time to read the slide and then discuss whether it is a good task or not.

#### Slide

Show slide, Is This a Good Task?

#### Is This a Good Task?

Decide whether this is or is not a good task.

Justify your answer.

Discuss.

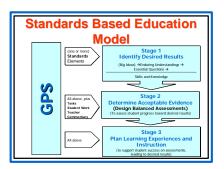
#### Slide Show slide, Criteria for Good Tasks

#### **Criteria for Good Tasks**

- Involves significant mathematics
- Can be solved in a variety of ways
- Elicits a range of responses
- Requires communication
- Stimulates best performance
- · Lends itself to a scoring rubric

Ask participants to discuss these criteria.

#### Slide Show slide, Standards Based Education Model



Ask participants to discuss the components of the model as you look at it together.

Show slide, Looking for Big Ideas

#### **Looking for Big Ideas**

Big Ideas are key concepts. Look for ideas in key nouns found in the standards.

M8A4. Students will graph and analyze graphs of linear equations and inequalities.

Slide

PG, p. 6

Discuss the importance of starting with big ideas to help plan for assessment.

Slide

Show slide, From Understandings to Questions.

### From Understandings to Questions

"Students will use linear algebra to represent, analyze and solve problems."

- Why is it important to be able to represent data with lines?
- How can I analyze that data to make conclusions and predictions?

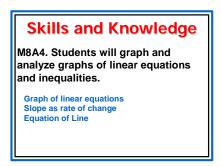
Show slide, Skills and Knowledge (chart).

PG, p. 7



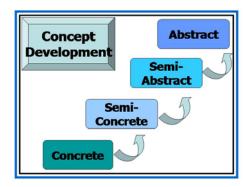
Next, identify the skills and knowledge that the students will need.

Slide 16 Show slide, Skills and Knowledge (example).



Here is a list of the skills and knowledge needed for this standard. Is this list complete? What else are students going to need to know for this standard, what skills and knowledge should they have already attained but will use while addressing this standard?

Slide Show slide, Concept Development.



As we think about assessment, we must remember that we are moving our students along this concept development continuum in order to reach the appropriate depth and rigor required by the standards.

Refer to the ideas on chart paper for "WHAT should we assess?" and edit as needed.



### Why should we assess?

Overview	This section will provide a rational for assessments, especially performance tasks. Participants will also get information about the Georgia Testing Program.
Objective	<ul> <li>Identify the purposes of assessment in the classroom.</li> <li>Understand how and when to use performance assessments.</li> <li>Given an assessment plan for a unit, identify whether it meets best practice standards for assessment.</li> </ul>
Activities	<ul><li>Task: Bungee Jump</li><li>Accountability</li></ul>
Materials	<ul> <li>Overhead projector or computer and LCD projector</li> <li>Transparencies or PowerPoint presentation</li> <li>Participant's Guide</li> <li>Graph Paper</li> <li>Items to drop</li> <li>Yard Sticks or Meter Sticks</li> <li>Pencils/Pens</li> </ul>

Show slide, Why should we assess?



Next we will discuss why we should assess. Again, let's look at a task to begin our discussion.

#### Slide

Show slide, The Purpose of Assessment.

The purpose of summative assessment is to prove achievement, and the purpose of formative assessment is to improve achievement.

Pratt, 1980

Have the participants respond to what they think this slide means and how summative and formative assessments are alike and different. Also, discuss the roles that each plays in seeing the growth of the whole student.

#### Slide

Show slide, Bungee Jump

#### **Bungee Jumping**

- 1. Complete the task.
- 2. Identify the standards addressed by this assignment.
- 3. Specify the criteria of the assignment.

Give them time to work the problem. Share the results.

Show slide, Why should we assess?.

### Why should we assess?

What could you learn about students based on their performance on this task?

After each group has shared, ask the question on the slide.

Does this activity give us any ideas about WHY we should assess?

#### **Accountability**

#### Slide

Show slide, Accountability.

#### Accountability

The purpose of the Georgia Testing Program is to

- measure the level of student achievement of the standards
- identify students failing to achieve mastery of content
- provide teachers with diagnostic information
- assist school systems in identifying strengths and weaknesses in order to establish priorities in planning educational programs.

Another reason we assess is because we are held accountable for our students' achievement.

Discuss the purposes of the Georgia Testing Program. Answer questions participants have about the CRCT, etc.

Slide PG, p. 32 Show slide, Testing.



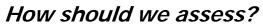
Update the participants on the resources available online for the CRCT.

To access this website, go to

http://public.doe.k12.ga.us/index.aspx

The fifth tab at the top of the page is "Curriculum". Click on the tab and look at the last section of "Divisions". This is labeled as "Testing". When you click on "Testing", you will see below "About Testing" choices concerning the CRCT. Clicking on the first choice, <a href="Criterion-Referenced Competency Tests">Criterion-Referenced Competency Tests</a> (CRCT) will take you to the CRCT site.

Refer to the ideas on chart paper for "WHY" and edit as needed.



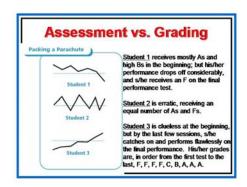
	aid vve assess:
Overview	In this section, participants will learn about different types of assessment and how to match the various forms of evaluation to the appropriate learning activities. They will analyze student work and develop rubrics for helping them understand how students think about mathematics.
Objective	Differentiate among different types of assessment and assessment formats.
	➤ Given specific standards and a purpose for assessment, determine which assessment methods would be most appropriate at various times to increase student learning.
	Given an assessment plan for a unit, identify whether it meets best practice standards for assessment.
Activities	<ul> <li>Parachute Discussion</li> <li>Assessing for Learning vs. Grading</li> <li>Multiple Representations</li> <li>Types of Assessment</li> <li>Matching Assessments with Standards</li> <li>Analyzing Student Work</li> <li>Rubrics</li> </ul>
Materials	<ul> <li>Overhead projector or computer and LCD projector</li> <li>Transparencies or PowerPoint presentation</li> <li>Participant's Guide</li> <li>Scissors</li> <li>Sample Rubrics</li> </ul>

**Slide** Show slide, *How should we assess?* 



The last part of our time will be spent exploring HOW we should assess. This is the "nuts and bolts" of what we need to do to design our assessments.

Show slide, Assessment vs. Grading.



What grade do you think that student 1 should receive? Why?

What grade do you think that student 2 should receive? Why?

What grade do you think that student 3 should received? Why?

Now for a little more information concerning these grades... These students were in a class called "Packing Parachutes". Student 1 started out strong. Why do you think his scores look this way?

Student 2 was very inconsistent with packing his parachutes. One would be perfect and the next one a total mess. Why do you think his scores were the way that they are?

Student 3 started off not even knowing what a parachute is. What do you think his scores reflect and why?

What does this tell us about the way that most teachers grade?

#### Now, let's put it into real life terms.

**Slide** Show slide, *Who?* 

WHICH STUDENT DO YOU WANT TO PACK YOUR PARACHUTE? WHY?

Have them respond to this question and compare that with the grades they would have given this student---what are we really trying to assess, why, and how are big questions here.

**Slide** Show slide, *How should we assess?* 

How should we assess?

 What assessment insights did you gain from this activity?

Give participants time to discuss.

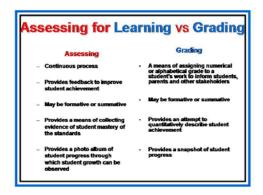
You may want to refer to the chart paper labeled "HOW?"

Page 25

### Assessing for Learning vs. Grading

Slide

Show slide, Assessing for Learning vs. Grading.

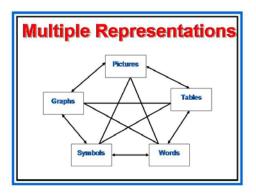


Discuss the differences in the two purposes for assessment.

### **Multiple Representations**

Slide

Show slide, Multiple Representations.

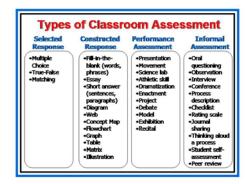


How does this connect with "How we assess"?

### **Types of Assessment**

Many of us already use a variety of assessment methods in our classrooms. We will now look at some frameworks for considering different methods of assessing students using the new Georgia Performance Standards.

Slide PG, p. 8 Show slide, Types of Classroom Assessment.



While you may choose to employ any of these formats, rather than *adopting* any single format for training, we have *adapted* the various assessment frameworks for purposes of discussion today. We will arrange our classroom assessments into these four categories: *Selected Response, Constructed Response, Performance Assessment*, and *Informal & Self-Assessment*.

PG, p. 9, 10

In the Participant's Guide you will find descriptions of these four assessment formats.

Each type of assessment has its own advantages and disadvantages, strengths and uses. It's especially important to note here that assessments for learning occur throughout the teaching/learning process, from the first day a unit is introduced until the day the unit of instruction is completed. Each unit, therefore, will have a number of different assessments that allow the classroom teacher to measure a student's progress toward his/her acquisition of the requisite knowledge, skills, and understanding.

Whatever format or framework we use in thinking about assessment, a balanced assessment plan that incorporates multiple types of assessments is necessary if we hope to determine what students know, are able to do, and can understand in relation to particular standards.

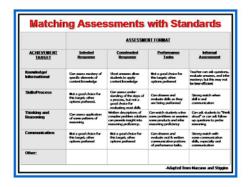
Emphasize this↓

But simply using a variety of types of assessments is not enough. We need to use the particular type of assessment that is most appropriate for measuring specific types of knowledge, skills, and understanding.

#### **Matching Assessments with Standards**

To assess effectively, we need to match the appropriate type or format of assessment to the kind of evidence that will provide the best indicators of the desired results we have predetermined for the standard. If the goal is for students to learn basic facts, then paper-and-pencil tests and quizzes may provide adequate and efficient measures. However, when the goal is deep understanding, we need to rely more on complex performances to determine whether the learning goals have been reached.

Slide PG, p. 11, 12 Show slide, Matching Assessments with Standards.



Knowledge/Informational targets refer to a student's complete and detailed understanding of the information important to a topic—the <u>content knowledge</u>. What are some examples of Knowledge/Informational targets in the standards?

Allow time for participants to look over standards and contribute suggestions.

Skill/Process targets refer to a student's success in performing a skill or process important to the topic. What are some examples of Skill/Process targets from the standards?

Allow time for participants to look over standards and contribute suggestions.

A number of types of "Thinking and Reasoning" skills are included in the standards; these are skills that fit within the Skill/Process targets but involve higher level processes. What are some examples of "Thinking and Reasoning" targets from the standards?

Allow time for participants to look over standards and contribute suggestions.

Marzano has also generated a list of "Communication" targets. Again, these fit within the classification of Skills/Processes, but directly relate to the processes of communication. What are some examples of "Communication" targets from the standards?

Allow time for participants to look over standards and contribute suggestions.

#### **Analyzing Student Work**

One of the most import HOWs of assessment is looking at student work. How we analyze the evidence they provide is critical to out success as educators. Here are some helpful suggestions as we learn to do this in a meaningful way.

Slide

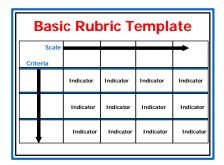
Show slide, Advantages of Using a Rubric.

#### **Advantages of Using a Rubric**

- Lowers students' anxiety about what is expected of them
- Provides specific feedback about the quality of their work
- Provides a way to communicate expectations and progress
- Ensures all student work is judged by the same standard
- Disengages the "halo" effect and its reverse
- Leads students toward quality work.

Slide

Show slide, Basic Rubric Template.



Show slide, Bungee Jumping.

Now, let's try our hand at assessing.

#### **Bungee Jumping**

Create a rubric to assess the bungee jumping task as a culminating task for the unit on Equations of Lines.

Let participants work as groups to create a rubric that they will use to assess the work they produced for this task.

#### Slide

Show slide, Put that Rubric to Use.

#### Put that Rubric to Use

Now to try your hand at assessing student work. You are to choose two of the "works" posted around the room and assess this work using the rubric that you have created.

Allow participants to walk around and use their rubric to assess the work in the room. As they walk, ask them to think about what kind of commentary they might give for this work also.



### **Putting It All Together**

Overview	In this section, participants will take a self-assessment about their assessment practices and set a goal for themselves or their faculty.
Objective	Create a balanced assessment plan for a unit, including examples of performance tasks, rubrics, and constructed response items.
Activities	<ul><li>Self-Assessment</li><li>Field Assignment</li></ul>
Materials	<ul> <li>Overhead projector or computer and LCD projector</li> <li>Transparencies or PowerPoint presentation</li> <li>Participant's Guide</li> <li>Chart Paper</li> <li>Markers</li> <li>Tape</li> </ul>

#### **Self-Assessment**

Slide

Show slide, Self-Assessment.

**Self-Assessment** 

**Setting a Goal** 

Direct participants to the self-assessment in their guide. Give them time to complete the questionnaire and tally their results. Discuss the questions at the end.

### Field Assignment

Slide 51 PG, p. 24 - 26 Show slide, Field Assignment.

#### Field Assignment

- Redeliver Day 2.
- Use what you have learned today to create an assessment you will use with your students. Collect work samples to share with the group.
- Bring a copy of the assessment and student work samples of your task to Day 3.
- Bring resources to help you plan for instruction.

#### **Review of Training Dates**



Next time, we will see each other for two days in a row! It will take us two days to work on lesson plans and unit designs. This will be MUCH easier if you are able to bring plenty of resources.

#### Slide



As always, please feel free to contact us at anytime.