GEORGIA DEPARTMENT OF EDUCATION

Kathy Cox, State Superintendent of Schools

Training for Georgia Performance Standards

Day 2: Learning to Assess and Assessing to Learn

Content Participant's Guide Mathematics Grades 3-5

We will lead the nation in improving student achievement.

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Use of This Guide

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.

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 2 have occurred. Consult the trainer for availability.

For more information on this or other GPS training, please contact Claire Pierce (404)657-7063 at cpierce@doe.k12.ga.us or Carmen Smith (404)463-1746 at csmith@doe.k12.ga.us.

Agenda

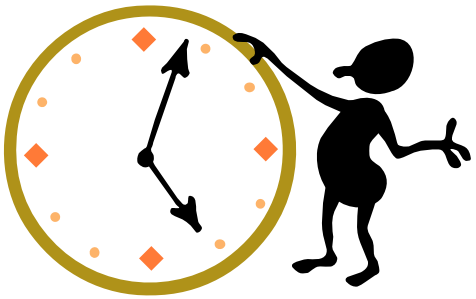
Introduction
- Four Corners
- First Grade Takes a Test
- Overview of the Module
- Today's Assessment

What should we assess?
- Task: Geometry Map
- Criteria for Good Tasks
- Assessment and the Unit Design Process
- Conceptual Understanding

Why should we assess?
- Task: My Perfect Saturday
- Accountability
- Testing

How should we assess?
- Task: Long Bike Ride
- Matching Assessments with Standards
- Types of Classroom Assessment
- Assessment vs. Grading
- Analyzing Student Work
- Rubrics

Putting It All Together
- Designing an Assessment: Small Group Work
- Self-Assessment
- Field Assignment



Module Goal

Demonstrate a deep understanding of the 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.

Key words from the goal:

- Deep understanding
- Georgia Performance Standards (GPS)
- Standards-based education
- Research-based best practices

Note that the goal will not be reached by any single day of training. It will take preparation, follow up, and seven days of classroom instruction to master this goal.

Module 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.

Geometry Map

Use math tools, colored pencils, and chart paper to design a city map that meets the following requirements.

- **4 streets that are parallel to each other**
- **1 highway that is perpendicular to the 4 parallel streets**
- **1 avenue that intersects at least 2 streets but is not perpendicular to them (at approximately a 45 degree angle)**
- **3 rectangle buildings, 4 square buildings, and 1 trapezoid building**
- **1 park with a 360 degree swimming pool, an equilateral triangle sandbox, and 2 parallelogram basketball courts**
- **Give your city a name**
- **label all parts of your map with original names**

Criteria for a Good Task

- **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**

Skills and Knowledge

Knowledge. Getting students to construct meaning, organize information, and (selectively) store information. This includes

- Vocabulary
- Terminology
- Definitions
- Key factual information
- Formulas
- Critical details
- Important events, people
- Sequence and timelines
- Rules
- Laws
- Principles
- Concepts

Skills. Getting students to demonstrate the ability to do something. These may be very simple, discrete operations, or more complex creative ones. This includes

- Actions, procedures, and processes
- Basic skills—decoding, arithmetic computation
- Psychomotor skills—running, swimming a back stroke, playing an instrument
- Study skills
- Communication skills—listening, speaking, writing
- Thinking skills—comparing, inferring, analyzing, interpreting
- Research, inquiry, investigation skills
- Interpersonal/group skills

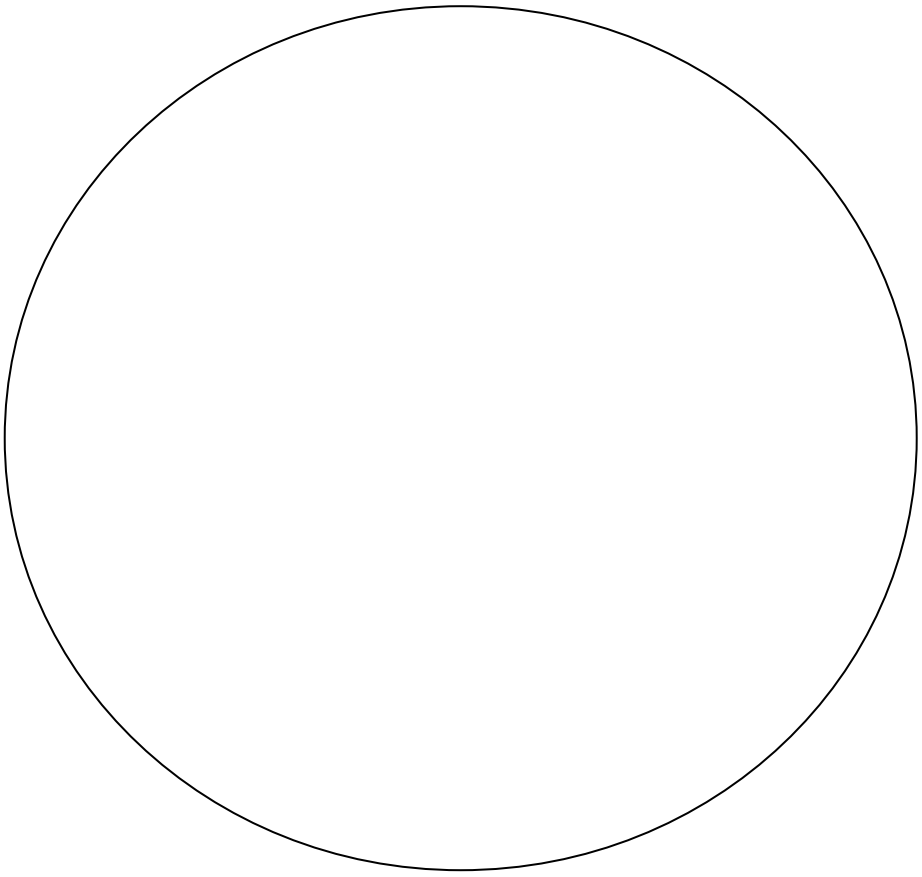
Verbs to use when stating skills and knowledge. These are samples only:

- Demonstrate
- Derive
- State
- Describe
- List
- Design
- Express
- Induce
- Instruct
- Create
- Critique
- Compare/contrast
- Evaluate
- Illustrate
- Judge
- Make meaning of
- Make sense of
- Use
- Model
- Predict
- Prove
- Show
- Synthesize
- Justify
- Choose
- Imagine
- Assess
- Write
- Draw
- Translate
- Adapt
- Build
- Determine
- Perform
- Solve
- Test

How to develop skills and knowledge statements: Look at the enduring understandings, essential questions, and elements. Ask yourself, "What skills and knowledge do students need in order to reach this goal?" Start each skill/knowledge statement with a verb.

My Perfect Saturday

- Create a circle graph that represents all 24 hours of your "Perfect Saturday"
- Activities should be clearly labeled and represented on your circle graph
- Put all "like" activities together. For examples: all meals should be in one fractional part of the circle
- Give your graph a title
- Be prepared to share



Long bike Ride

Try to imagine Tyler's bike ride as you listen to the story.

Tyler left his house and rode his bike 4 7/8 miles south to his friend Matt's house. They then rode their bikes 3 ½ miles west to the park. At the park there was a wonderful water fountain that they played and rested at for awhile. When they felt refreshed, they rode their bikes 3 ¼ miles north to the soccer fields and played with some friends from school. Whey they left the soccer field how many miles did they have to ride their bikes east and then north (following the main roads) to get back to Tyler's house?

- Use the information in the problem to find the answer.
- Draw a diagram on your chart paper to represent the data.
- All work must be shown.

Descriptions of Assessment Formats

Selected Response

Selected Response items, which include multiple-choice questions, true/false items, and matching exercises, are the most common forms of assessments. Selected Response items are best used in assessing breadth of content (McREL, 2000). Although Selected Response items often are used to assess students' recall and recognition of information, they also can be constructed to assess higher level thinking. For example, they might be used to assess students' understanding of concepts, their ability to apply knowledge, or their skill in predicting the consequences of an action.

Selected Response formats are appropriate for use in a written form only when you are absolutely sure that students have a sufficiently high level of reading proficiency to be able to understand the test items. If you are administering a Selected Response assessment to students who are poor readers, nonreaders, or students who are still learning English, you must help them overcome their reading difficulty in order to determine their content mastery and obtain an accurate estimate of achievement.

It is possible, however, to use a Selected Response assessment in the primary grades or with students who are still learning English if the teacher reads the questions and provides pictorial response options.

Selected Response formats are appropriate to use when you need efficiency, as you can administer them to large numbers of students at the same time, and you can score them quickly.

Constructed Response

Short constructed response items may be questions that require students to prepare short written responses such as responses to short essay questions. For example, a science teacher might ask students to provide a brief explanation of how clouds affect weather and climate or a mathematics teacher might ask students to explain how they arrived at the answer to a mathematics problem. A language arts teacher might ask students to locate and explain examples of particular figures of speech in a specified passage. The value of this type of item is that it requires students to generate their own responses, yet it is not as time intensive as are other assessment forms. In addition, this type of item can be effectively used to assess students' understanding of concepts.

Performance Assessments

Performance tasks require students to apply learning to specific tasks and situations to demonstrate their knowledge. These tasks might include conducting interviews or creating physical products, oral presentations, videotapes, musical productions, or historical re-enactments. Research indicates that performance tasks can more deeply engage all students in their learning and can lead to a deeper understanding of content (Newmann, Secada, & Wehlage, 1995). Performance tasks can vary in terms of their complexity, time required for completion, and scope of content assessed. For example, students might be asked to do something as simple as read a poem or as complex as write and perform an original song or conduct a group investigation. In any case, teachers should clearly describe the nature of the final product, resources students will need, and the criteria that will be used to evaluate the product. Teachers should embed performance tasks in meaningful contexts so students can see the relevance and usefulness of the knowledge and skills they are learning. This makes it easier for all students to demonstrate what they know. Students might find performance tasks particularly motivating and engaging because they present opportunities to bring their cultural backgrounds into classroom learning experiences (see Farr & Trumbull, 1997). Performance tasks also can be quite useful when it is necessary to provide adaptations and accommodations for special needs students. Accommodations in content, format, administration procedures, scoring, and interpretation are more viable with performance tasks than with forced-choice items (Farr & Trumbull, 1997).

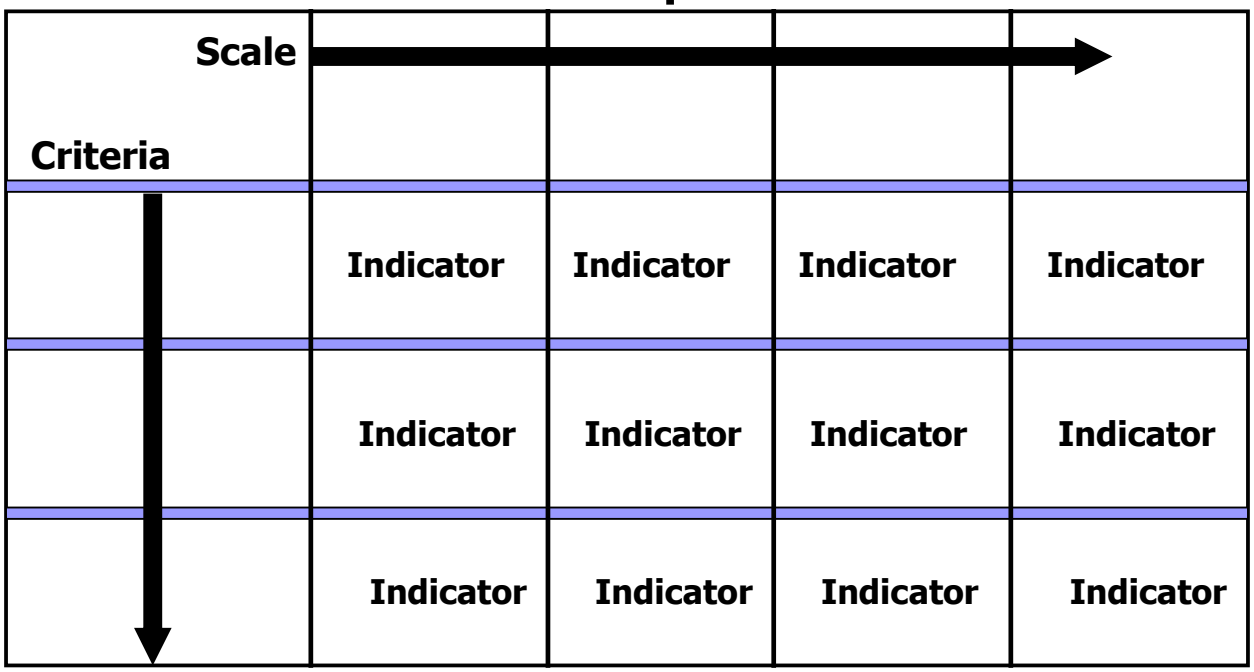
Informal & Self-Assessment

Informal assessments occur in every classroom every day. When teachers observe students working independently or in groups, they are assessing informally. When teachers observe students working to solve a problem or reading a text or viewing a newsclip, they are assessing informally. When students ask and answer questions, or dialogue with the teacher or with their classmates, or work in small groups, teachers informally assess knowledge and understanding. Informal assessments are usually subjective. While a teacher may employ specific criteria during informal observations or discussions, often s/he does not. Self-assessment represents another type of informal assessment. Students or teachers might use checklists to assess informally or to self-assess. Students self-assess as they become constructive critics of their own work or assess their growth or progress toward their learning goals. Assessing one's own work is a skill that must be taught; but as students learn to self-assess, they take charge of their own learning and their achievement improves.

Matching Assessments with Standards

	ASSESSMENT FORMAT			
ACHIEVEMENT TARGET	**Selected Response**	**Constructed Response**	**Performance Tasks**	**Informal Assessment**
Informational (Knowledge)				
Process (Skills)				
Thinking and Reasoning				
Communication				
Other:				

Basic Rubric Template



Steps in Designing a Rubric

1. Determine the focus of your assessment.
   - What is the task?
   - What significant knowledge, skills, and processes do you wish the students to demonstrate?
2. Determine how many categories are necessary to describe the knowledge, skills, and processes associated with the task.
   - What knowledge or specific information is necessary?
   - What are the observable processes?
   - What are the skills?
3. Describe the specific observable actions, processes, attitudes (effort, perseverance, willingness, etc.) that would indicate the attainment of the goal or goals of the performance task.
   - What does a good, adequate, acceptable job look like? (All requirements have been met.)
   - What does a superior job look like? (Requirements have been surpassed.)
   - What does an inadequate job look like? (Some or all requirements are missing.)
4. Determine how many levels of performance are appropriate for the task.
   - Does this task lend itself to a two-level rubric? (Yes, all requirements have been met; and no, all requirements have not been met)
   - Does this task lend itself to a four-level rubric? (No response, Basic, Proficient, Advanced)
   - Does this task lend itself to a five- or six-level rubric? (Rating scale 1-5 or 1-6)
5. Determine the format to communicate the rubric.
   - What kind of chart, graph, or checklist will you use?

Quality Words for Rubric Design

Criteria	Outstanding	Successful	Work in Progress
Vocabulary	Precise	Appropriate	Imprecise, inappropriate
Conclusion	In-depth	Complete	Incomplete
Supporting statement	Detailed	Generalized	Superficial
Examples	Specific	Adequate	Non specific
Conclusion	Accurate	Correct	Incorrect
Data	Purposeful	General	Unrelated, random
Sources	Varied	Few	Lacks variety, none
Eye contact	Consistently	Most of the time	Rarely, inconsistently
Reference/style sheet	Precisely adheres	Consistently adheres	Little or no evidence
Diagrams, charts	Clearly communicates	Communicates	Fails to communicate
Voice modulation	Varied, enhances	Somewhat varied	Monotone or inaudible
Works with others	Effectively and consistently Highly respectful Effective listener	Consistently Shows respect Consistently listens	Rarely, inconsistently Disrespectful Fails to listen
Exhibition, product	Fully developed and detailed	Complete	Incomplete or unfinished
Evidence	Authentic, detailed, varied, well documented	Substantial, well documented	Superficial, not documented

Rubric Writing Terminology

Independence

Words to indicate level of independence

- Independently
- With minimal assistance
- With maximum assistance
- Even with maximum assistance cannot complete task

Range and Flexibility

Words to indicate breadth and depth of ability as well as habitual use, isolated demonstrations

- Always, constantly, frequently, again and again
- Consistently, continually
- Occasionally, most of the time, usually
- Seldom, rarely, infrequently
- Never
- Fully developed, detailed, deep, and rich
- Complete, thorough
- Incomplete, unfinished, superficial
- Purposeful or specific
- General
- Basic, unrelated, random, unspecific
- All, some, few, none

Connections

Words to show that students can apply skills and make connections across disciplines and contexts

- Transfers
- Adapts
- Applies
- Relates
- Employs
- Accommodates
- Conforms
- Adjusts
- Transforms
- Makes connections

Conventions

Words to express tricks of the trade or specific skills specific to the task that a novice might not have

- Precise
- Appropriate
- Imprecise, inappropriate
- Accurate
- Correct
- Incorrect

Holistic and Analytical Rubrics

Holistic	
5	
4	√
3	
2	
1	

Analytical				
	Trait 1	Trait 2	Trait 3	Trait 4
5			√	
4	√			√
3				
2		√		
1				

HOLISTIC

- **Definition**: One score or rating for the entire product or performance.
- **When to Use**:
  - For a quick snapshot of overall status or achievement
  - When the skill or product to be assessed is simple; when it has only a single dimension
- **Disadvantages**:
  - Two students can get the same score for vastly different reasons
  - Not as good for identifying strengths and weaknesses and planning instruction
  - Not as useful for students to use.

ANALYTICAL

- **Definition**: Several scores or ratings for a product or performance. Each score represents an important dimension or trait of the performance or product.
- **When to Use**:
  - Planning instruction – show relative strengths and weaknesses.
  - Teaching students the nature of a quality product or performance – they need the details.
  - Detailed feedback to students or parents.
  - For complicated skills, products, or performances, for which several dimensions need to be clear.
- **Disadvantages**:
  - Scoring is slower.
  - Takes longer to learn.

Guidelines for Performance Assessment

When constructing performance assessment tasks, it helps to use the acronym GRASPS.

G Real-world **Goal**

R Real-world **Role**

A Real-world **Audience**

S Real-world **Situation**

P Real-world **Products** or **Performances**

S **tandards**

Design Template for Assessment for a Unit

What evidence will show that students understand _____?

Performance Tasks, Projects

Quizzes, Tests, Academic Prompts

Other Evidence (e.g., observations, work samples, dialogues)

Student Self-Assessment

From Wiggins, Grant and Jay McTighe. *Understanding by Design Professional Development Workbook.* Alexandria, VA: Association for Supervision and Curriculum Development. 2004.

Design Template for One Assessment Task

What understandings or skills/knowledge will be assessed through this task?

What criteria are implied in the standards and understandings? What qualities must student work demonstrate to signify the standards were met?

Through what authentic performance task will students demonstrate understanding? (Use GRASPS.)

From Wiggins, Grant and Jay McTighe. *Understanding by Design Professional Development Workbook.* Alexandria, VA: Association for Supervision and Curriculum Development. 2004.

Balanced Assessment Evidence: A Self-assessment

Directions: Use the following scale to rate your level of use of each of the following assessments.

3 = Frequent Use
2 = General Use
1 = Infrequent Use
0 = No Evidence of Use

1. _____ Fill-in-the-blank quizzes or tests
2. _____ Projects
3. _____ Student self-assessments
4. _____ Matching quizzes or tests
5. _____ Oral presentations (e.g., dramatization, recitation)
6. _____ Reflective journals or learning logs
7. _____ True-false quizzes or tests
8. _____ Teacher-student conferences
9. _____ Illustrations
10. _____ Products (e.g., PowerPoint show, piece of art, model)
11. _____ Observations of students using observable indicators or criteria list.
12. _____ Oral questioning
13. _____ Peer reviews and peer response groups.
14. _____ Creations of graphic organizers (e.g., graphs, tables, illustrations)
15. _____ Multiple-choice quizzes and tests

16. _____ Essay quizzes and tests

17. _____ Multiple-step projects or scenarios

18. _____ Written process descriptions (e.g., in determining a solution: science lab, math solution, etc.)

19. _____ Short answer quizzes and tests

20. _____ Demonstration of a skill

Adapted from *Understanding by Design Professional Development Workbook*

Transfer your scores to the corresponding item number below:

Selected Response		Constructed Response		Performance Assessment		Informal Assessment	
Item Number	**Your score**	**Item Number**	**Your score**	**Item Number**	**Your score**	**Item Number**	**Your score**
4.		1.		2.		3.	
7.		9.		5.		6.	
15.		14.		10.		8.	
		16.		17.		11.	
		19.		18.		12.	
				20.		13.	
TOTAL:		TOTAL:		TOTAL:		TOTAL:	

Compare and contrast your totals for the various assessment formats.

Does your classroom practice reflect a balance of assessment types?

Which assessment formats might you add or use more frequently in order to provide a more balanced picture of students' knowledge, skills, and understanding?

Which assessment formats might you use less frequently in order to provide a more balanced picture of students' knowledge, skills, and understanding?

Creating a Photo Album, Not a Snapshot, of Assessment Results

A Faculty Questionnaire

Instructional leaders can help transform assessment practices in their school or district by encouraging all staff to understand the importance of a photo album approach to this process. Use the following staff questionnaire to determine staff perceptions about the extent to which a balanced, photo album approach to assessment is operational in your school or district. Each staff member uses the following rating scale to evaluate the extent to which each strategy is presently operational, with follow-up planning at departmental or grade levels to create an action plan to address omissions.

5 = Highly and consistently evident throughout our school
4 = Consistently evident in a majority of grade levels and/or departments
3 = Consistently evident in some grade levels and/or departments
2 = Sporadically evident
1 = Little if any evidence
0 = No evidence

_____ 1. We avoid one-shot or limited assessment approaches.
_____ 2. Our assessment process is based upon multiple forms of evidence, not just tests and quizzes.
_____ 3. We seek to create a varied and comprehensive portrait of students' progress aligned with consensus-driven content and performance standards.
_____ 4. Our tests and quizzes include constructed-response items in addition to such selected-response assessment activities as multiple choice, true-false, and fill-in-the-blank.
_____ 5. We encourage our students to reflect, revise, rethink, and refine.
_____ 6. We support all students in the process of self-assessment and self-evaluation, ensuring that they monitor their own progress against our standards.
_____ 7. We use a variety of reflective assessment tools, including reflective journals, think logs, evaluation activities, think-pair-share exercises, and peer response groups.
_____ 8. All classrooms make use of academic prompts to present assessment tasks, including clear articulation of format, audience, topic, and purpose for each task.
_____ 9. At key points in each grading period, students participate in real-world, authentic culminating projects that allow them to demonstrate their understanding and mastery of standards in creative, innovative, and original ways.
_____ 10. Each student maintains a portfolio of his or her work in every classroom and subject, including maintenance of representative work products and artifacts as well as reflections and self-evaluations.

Critical Filters

- What type of evidence is required to assess the standard?
- What assessment method will provide the type of evidence needed?
- Will the task provide enough evidence to determine whether students have met the standard?
- Is the task developmentally appropriate?
- Will the assessment provide students with the various options for showing what they know?

Characteristics of Exemplary Assessment

- Emphasizes learning process as well as product
- Requires active construction of meaning
- Assesses interdisciplinary and cross disciplinary skills
- Helps students self monitor
- Gives specific expectations for students

Characteristics of Exemplary Assessment

- Emphasizes the application and use of knowledge
- Has meaning and relevance to students
- Emphasizes complex skills
- Makes standards public and known in advance

Permission Forms for Student Work

CONSENT AND ASSIGNMENT

This Consent and Assignment (the "Assignment") is effective when signed by the undersigned Georgia educator ("Educator") and is between Educator and the Georgia Department of Education (the "GDOE"). For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree:

1. GDOE gratefully acknowledges the contribution Educator is hereby making to GDOE of the original work product (the "Work Product") created, developed, worked on or revised by Educator in connection with GDOE's Georgia Performance Standards Project (the "Project"). So that GDOE may fully use the Work Product in any manner it sees fit, including making copies, modifications and derivative works, Educator hereby fully and unconditionally transfers, assigns and conveys to GDOE all of Educator's copyright, ownership interests and other intellectual property rights in the Work Product (collectively, the "Intellectual Property Rights"). Educator further agrees that GDOE may publicly recognize and acknowledge Educator's contribution to, and involvement in, the Project.

2. This Assignment is governed by Georgia law, can only be amended if both parties do so in writing, is assignable solely by GDOE and supersedes any contrary oral or written agreement or understanding. Educator grants to GDOE the power and authority to execute any documentation deemed necessary by GDOE to register or protect the Work Product or Intellectual Property Rights therein or complete the full transfer of the Work Product and Intellectual Property Rights to GDOE which is the purpose of this Assignment.

"Educator"
Name:

Signature:

_____

Print:

_____

"GDOE"

Georgia Department of Education

By:

_____

Title:

_____

Date:

_____

CONSENT AND ASSIGNMENT

This Consent and Assignment (the "Assignment") is effective when signed by the undersigned legal guardian ("Guardian") on behalf of the Guardian and minor Georgia student named below ("Student"), and is among Guardian, Student and the Georgia Department of Education (the "GDOE"). For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree:

1. GDOE gratefully acknowledges the contribution Student and Guardian are hereby making to GDOE of the original work product (the "Work Product") created, developed, worked on or revised by Student. So that GDOE may fully use the Work Product in any manner it sees fit in connection with GDOE's Georgia Performance Standards Project (the "Project"), including making copies, modifications and derivative works, Guardian on behalf of Guardian and Student (and their heirs and successors) hereby fully and unconditionally transfer, assign and convey to GDOE all of Student's and Guardian's copyright, ownership interests and other intellectual property rights in the Work Product (collectively, the "Intellectual Property Rights"). Guardian further agrees that GDOE may publicly recognize and acknowledge Student's contribution to, and involvement in, the Project.

2. This Assignment is governed by Georgia law, can only be amended if both parties do so in writing, is assignable solely by GDOE and supersedes any contrary oral or written agreement or understanding. Student grants to GDOE the power and authority to execute any documentation deemed necessary by GDOE to register or protect the Work Product or Intellectual Property Rights therein or complete the full transfer of the Work Product and Intellectual Property Rights to GDOE which is the purpose of this Assignment.

"Guardian"

Signature:

_____

Print Name:

_____

Guardian's Relationship to Minor:

_____

Print Minor's Name:

_____

"GDOE"

Georgia Department of Education

By:

_____

Title:

_____

Date:

_____

DRAFT

Georgia Performance Standards
Performance Rubric-Mathematics: Kindergarten – Fifth Grade

DRAFT

		Needs Rethinking	In Development	Quality	Exceptional
Strategies	No attempt	• Inappropriate strategy	• Appropriate strategy	• Appropriate & reasonable strategy	• Appropriate and reasonable strategies • Multiple strategies and/or unique approach
Solutions	No attempt	• Multiple mathematical errors • No solution or incorrect solution	• Mathematical errors that lead to incorrect solution • Partial solution	• Correct solution • No Mathematical errors	• Correct solution(s) and/or extended solution • No mathematical errors
Communication	No attempt	• Pictures, words or numbers do not represent strategy or solution	• Pictures, words **or** numbers represent strategy or solution	• Pictures, words **and** numbers represent strategy and solution • Correct mathematical terminology	• Pictures, words **and** numbers represent strategy and solution(s) • Correct mathematical terminology • Generalizations and/or extension of solution(s)

A Glossary of Assessment Terms

1. **Assessment:** collecting formal or informal data related to students' achievement and/or progress toward learning goals that may be based upon observation and dialogue or upon completion of some form of test or performance-based activity.

2. **Evaluation:** making judgments about the quality of student performance based upon consensus-driven standards and student achievement data.

3. **Content standards:** statements articulating what students are expected to know, be able to do, and/or understand; typically, content standards describe student performance over time (e.g., at the end of a course, grade level, etc.).

4. **Performance standards:** statements articulating specific behaviors students are expected to demonstrate in relationship to content standards at a particular point in their education.

5. **Benchmarks:** assessment activities required of all students at key points in their education to ensure that they are mastering designated performance standards in order to confirm their ongoing achievement of designated content standards (e.g., quarterly writing prompts; annual reading assessments).

6. **Formative vs. summative assessment:** formative assessment can be both formal and informal and occurs throughout a period during a student's education; summative assessment is cumulative, occurring at key juncture points in a student's education.

7. **Performance assessment:** assessment activities that require students to complete some form of performance (e.g., writing, observing, presenting) rather than selected-response testing (e.g., fill-in-the-blank, multiple choice, true-false).

8. **Authentic assessment:** performance-based assessment that requires students to demonstrate their ability to perform in situations and settings that parallel "authentic," real-world professionals.

9. **Rubric:** a scoring tool for performance assessment tasks that presents a series of numbered descriptions of student behaviors, organized in rank order; each descriptor summarizes a level of performance and the expected student behaviors for that level.

10. **Feedback-adjustment process:** collecting/analyzing student assessment data to determine individual, sub-group, and full-group levels of achievement, with corresponding adjustments in teaching/ learning activities to improve achievement on a continuous basis.

Resources

Note: A more general list of resources for Standards-Based Education is contained in the materials for day one of training.

Assessment

Andrade, H. (2000, February). Using Rubrics to Promote Thinking and Learning. *Educational Leadership*, 56 (5), 13-19.
An excellent resource on using rubrics to support student learning. In this article, Andrade outlines the importance of rubrics by providing insight into their purpose, various uses and effective designs. She makes the point that rubrics can help educators assess student work quickly and efficiently, and help support student grades. When properly designed and used correctly, rubrics can support both the learning and assessment process.

Arter, J., & Busick, K. (2001). *Practice with Student-Involved Classroom Assessment*. Upper Saddle River, NJ: Prentice Hall.
This workbook has been developed as the companion to the third edition textbook. The connections between the concepts in the text and the workbook exercises are well-planned and finely tuned to work together chapter-by-chapter. Each exercise provides direct assistance to teachers on concepts from evaluating grading practices to developing scoring criteria.

Davies, A. (2000). *Making Classroom Assessment Work*. Merville, British Columbia: Connections Publishing.
This provides a thoughtful framework for how teachers and administrators can reconsider how assessment is working in classrooms. From building the foundation for student involvement through ways to report, the author provides a bridge between what the research shows and what teachers can do in their classrooms. This book is a quick read that is written in teacher-friendly language.

Gregory, K., Cameron, C. & Davies, A. (1997). *Knowing What Counts*. Merville, British Columbia: Connections Publishing.
This series of three books for use in middle grades and high school classrooms outlines incredibly practical ways for teachers to involve students in their own assessment. *Setting and Using Criteria* outlines a four-part process for setting criteria, and then shows how to use it to provide descriptive feedback to support learning. *Self-Assessment and Goal-Setting* provides 10 practical self-assessment ideas and five goal-setting ideas to use with students. *Conferencing and Reporting* focuses on practical ways to involve students in their own communication with others about learning. Additional information about her work in assessment can be found on Anne Davies' organization's web site: www.connect2learning.com.

Lewin, L., & Shoemaker, B. (1998) *Great Performances: Creating Classroom-Based Assessment Tasks*. Alexandria, VA: Association for Supervision and Curriculum Development.
An inspiring book filled with personal examples on how to increase student achievement by helping students understand the assessment process. The authors provide a four-step approach to assist students in learning content and how to understand it for the assessment. They maintain that helping students to understand teacher expectations, performance levels and strategies for reaching course goals will increase student achievement. This resource includes examples of students' projects and assessment tools.

Lockwood, R., & McLean, J. (1996). *Why We Assess Students – And How*. Thousand Oaks, CA: Corwin Press, Inc.
This book is an easy-to-read and powerful resource book that describes the types of assessments, the strengths and weaknesses of each type, use of kinds of assessment data and the caution to be observed while interpreting assessment results. The book includes discussions on criterion-referenced testing and alternative or authentic testing methodologies. The last chapter demonstrates how to develop an ideal assessment program for your staff. It's a keeper, just like the authors say.

*Marzano, Robert J. *(2000) Transforming Classroom Grading*. Alexandria, VA: Association for Supervision and Curriculum Development.
Grading has the *potential* for being a valuable learning tool that helps both students and teachers clearly see how they can improve; however, this potential is seldom realized. In this book, Marzano presents viable alternatives to traditional assessment that are grounded in research and practical at the same time.

*Robert J. Marzano, Debra Pickering, and Jay McTighe. (1993) *Assessing Student Outcomes: Performance Assessment Using the Dimensions of Learning Model.* Alexandria, VA: Association for Supervision and Curriculum Development.
Marzano et. al. make the case that performance tasks should be developed to help students achieve deep learning and promote active construction of knowledge. This book contains numerous examples of such performance tasks and also includes several chapters on the construction of rubrics to score performance and offer useful feedback to students.

O' Connor, K. (2002) *How to Grade for Learning, 2nd Edition*. Arlington, Illinois: Skylight Publishers. www.skylightedu.com
The second edition of this book offers eight practical guidelines that encourage effective learning, support student success and make grades meaningful. Each guideline defines the purpose, illustrates an example, discusses and analyzes key issues, and summarizes the bottom line. Additional topics include overviews of various grading programs, calculation strategies, the use of report cards and other reporting forms, and insights on future trends in student assessment.

Reeves, D. (1997). *Making Standards Work: How to Implement Standards-Based Assessments in the Classroom, School and District*. Denver, CO: Advanced Learning Press.
An examination of the undeniable evidence of the importance of using performance assessment as part of an educator's daily life. This book leads the reader through the steps of creating and using performance assessments to determine students' achievement throughout the school year. The author advocates using performance assessments that contain real-world scenarios, multiple tasks, and clear, consistent scoring guides.

Stiggins, R. (2001). *Student-Involved Classroom Assessment*, Third Edition. Upper Saddle River, NJ: Prentice Hall.
An important resource for leaders in helping teachers create quality classroom assessments. Stiggins shows how classroom assessment can be used to build student confidence and to increase student performance. He also presents ways to use different assessment methods to reach achievement goals. This is the third edition of Rick Stiggins' acclaimed textbook, and it continues to build on his practical guidelines for developing quality classroom assessment practices. It offers a wealth of ideas for improving learning through effective assessment and demonstrates how vital and powerful student involvement is in the process. Additional assessment resources produced by Rick Stiggins' organization, the Assessment Learning Institute (Portland, Oregon), are available and downloadable at no cost on the organization's web site: www.assessmentinst.com.

Stiggins, R. (2002, June). *Assessment Crisis: The Absence of Assessment FOR Learning*. Phi Delta Kappa, 83(10), 758-765.
A must reading for anyone who needs to know more about the impact assessment has on student achievement. This article sums up the research on classroom assessment with a connection to school improvement. Rick Stiggins, president of Assessment Training Institute, Inc. in Portland, Oregon, and considered by many the country's most renowned researcher and speaker on assessment, writes in a manner in which school leaders and teachers can learn and use the information. The latter part of this article helps school leaders focus their work on improving classroom assessment FOR learning.

Stiggins, R. (2005). *Student-Involved Assessment FOR Learning*, Fourth Edition. Upper Saddle River, NJ: Prentice Hall.
This book focuses on showing teachers how to develop assessments that accurately reflect student achievement AND how to use those assessments to benefit—not merely grade—student learning. It examines the full spectrum of assessment topics, from articulating targets, through developing quality vehicles, to communicating results effectively—with an exceptionally strong focus on integrating assessment with instruction through student involvement. Throughout the material, a variety of hands-on practice activities provide clear guidance on how to construct all types of assessments while explaining what kinds of achievement each type can and cannot assess.

Web Sites

http://www.exemplars.com

http://cresst96.cse.ucla.edu/resources/justforteachers_set.htm
This Los Angeles Public Schools site includes a PDF file with sample performance tasks.

http://intranet.cps.k12.il.us/Assessments/Ideas_and_Rubrics/ideas_and_rubrics.html
This excellent site by the Chicago Public Schools provides information about rubrics for performance assessments, performance assessment tasks, and assessment resources, as well as a rubric bank.

http://pareonline.net
Practical Assessment, Research and Evaluation (PARE) is an on-line journal supported, in part, by the Department of Measurement, Statistics, and Evaluation at the University of Maryland. Its purpose is to provide education professionals access to refereed articles that can have a positive impact on assessment, research, evaluation, and teaching practice.

http://www.rmcdenver.com/useguide/assessme/online.htm
This site provides links to a variety of websites dealing with creating assessments, assessment strategies and definitions, rubrics, etc.

http://school.discovery.com/schrockguide/assess.html
This site provides an extensive bank of rubrics, rubric builders, graphic organizers, etc.

http://www.techtrekers.com/rubrics.html
This site provides links to a variety of websites for creating rubrics.

www.eduplace.com/graphicorganizer/
This site contains approximately 35 different graphic organizers.

www.ieq.org/Portal/Stud_assess.html
The student assessment section of the IEQ Teacher Resource Portal provides education program planners and teacher development specialists with access to web-based resources such as case studies, descriptions of alternative approaches to primary school assessment, sample test instruments, and classroom strategies that can be used to link assessment and instructional practice.

www.nwrel.org/assessment
This excellent site provides a wealth of materials, including *Toolkit98*, which contains tutorials "designed to assist classroom teachers to become better assessors of student learning. The primary users of Toolkit98 are intended to be those who have the responsibility to coordinate and facilitate professional development in assessment for teachers."

www.pals.sri.com
PALS is an on-line, standards-based, continually updated resource bank of science performance assessment tasks indexed via the National Science Education Standards (NSES) and various other standards frameworks.

www.prenhall.com/stiggins
This site provides additional information for users of *Student-Involved Assessment FOR Learning, 4th ed.*, by Richard J. Stiggins.

Georgia Department of Education—Testing
http://www.doe.k12.ga.us/curriculum/testing/index.asp

Elementary Mathematics

Elementary Grades Balanced Assessment: Package 1.Dale Seymour Publications, 1999.

Danielson, Charlotte and Pia Hansen. *A Collection of Performance Tasks and Rubrics*. Eye on Education, 1999.

Moon, Jean. *Developing Judgment: Assessing Children's Work in Mathematics*. Heinemann, 1997.

Bright, George W. and Jeane M. Joyner. *Dynamic Classroom Assessment*. ETA/Cuisenaire, 2005.

Kallick, Bena and Russ Brewer. *How to Assess Problem Solving Skills in Math*. Scholastic, 1997.

Mathematics Assessment: A Practical Handbook. NCTM, 2003.

Mathematics Assessment: Cases and Discussion Questions. NCTM, 2003.

Mathematics Assessment: Myths, Models, Good Questions, and Practical Suggestions. NCTM, 1991.

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