GEORGIA DEPARTMENT OF EDUCATION

Kathy Cox, State Superintendent of Schools

Training for Georgia Performance Standards

Day 2: Assessment FOR Learning

Content Facilitator's Guide Science Grades K-2 Grade 8

We will lead the nation in improving student achievement.

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.

Use of This Guide

The module materials, including a Content Facilitator'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. If you need the PowerPoint earlier, please email Marlee Tierce at mtierce@doe.k12.ga.us or call (404) 463-1977 or Adrian Neely at aneely@doe.k12.ga.us or call (404) 463-1765.

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Overview

Module Rationale

This training extends and builds upon Day One of training.

The first purpose of Day One of training was to introduce participants to the applicable standards.

The second purpose of Day One of training was to introduce the Standards-Based Education approach and to assist teachers in using this approach to develop assessments and instruction in support of the new curriculum standards. During Day One of the training, the emphasis was on standards-based education—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 examining standards to determine what students need to do and to know.

The purpose of Day Two of the training is to teach Stage 2 of the Standards-Based Education Process—Balanced assessment: How we determine we have enough evidence and that it demonstrates the quality of the student's understanding.

Module Description

This module includes preparation (an assignment to unpack more standards that was given at the end of Day One), an instructor-led one-day session composed of several large and small group demonstrations and practice activities, and follow-up. The prior preparation helps participants to jump into meaningful discussions more quickly and the follow up serves as a bridge to Day Two 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, six 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 science 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 in science.
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

Prior Preparation—Participants

- Examine several standards to create Stage 1 for different units of study (assigned at end of Day One)

Introduction

- Overview of the Module
- Assessment and Standards-Based Education

Introduction to Assessment

- Assessment Terminology
- What is Assessment *for* Learning?

Matching Assessments to Standards

- Applying What We've Learned
- Small Group Practice
- Planning for Assessment

Performance Assessments and Rubrics

- Defining Performance Assessment
- Guidelines for Performance Assessment
- Components of Rubric Design

Accountability: Testing

Putting It All Together

- Designing an Assessment Plan: Small Group Work
- Follow-Up Assignment

Module Materials for Day Two of Training

Content Facilitator's Kit contents:

- Content Facilitator's Guide (one for each leader)
- Complete set of slide transparencies (PowerPoint)

Other materials needed:

- Flipchart paper
- Markers
- Masking tape to post flipcharts
- Sticky notes

Equipment:

- Overhead projector or computer and LCD projector

Recommended Readings: Assessment

Note: This is a list of resources on assessment.

Andrade, H. (2000, February). Using Rubrics to Promote Thinking and Learning. *Educational Leadership*, 56 (5), 13-19.
This is 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.

Davies, A. (2000). *Making Classroom Assessment Work*. Merville, British Columbia: Connections Publishing.
This provides a thoughtful framework for ways teachers and administrators can reconsider how assessment is working in classrooms. From building the foundation for student involvement through reporting methods, 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.

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 to help 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 provide 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 who want to help teachers create quality classroom assessments, this third edition of Stiggins' acclaimed textbook shows how classroom assessment can be used to build student confidence and to increase student performance. Stiggins also presents ways to use different assessment methods to reach achievement goals, and he continues to build on his practical guidelines for developing quality classroom assessment practices. The book 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 clearly and effectively for school leaders and teachers who want to employ best practices for assessment in the classroom. 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.
In the fourth edition of his book Stiggins continues to present teachers and school leaders with valuable and usable information on assessment *for* learning.

Suggested Web Sites for Assessment

Articles

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.

www.prenhall.com/stiggins

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

http://www.alfiekohn.org/teaching/grading.htm

In this article, Alfie Kohn asks whether traditional grading is really necessary or useful and makes a strong case supportive assessment instead of traditional grades.

Graphic Organizers

www.eduplace.com/graphicorganizer/

This site contains approximately 35 different graphic organizers.

Rubrics

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.

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.

Websites

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.

Resources

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."

Tasks
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.

What Georgia Educators Need to Know about Georgia's Testing Program

- http://public.doe.k12.ga.us/pea_communications.aspx?ViewMode=1&obj=1079

Georgia Department of Education—Testing

- http://www.doe.k12.ga.us/curriculum/testing/index.asp

Criterion-Referenced Competency Test (CRCT)

- http://www.doe.k12.ga.us/curriculum/testing/crct.asp

End of Course Test (EOCT)

- http://www.doe.k12.ga.us/curriculum/testing/eoct.asp

National Assessment of Educational Progress (NAEP)

- http://www.doe.k12.ga.us/curriculum/testing/naep.asp

Georgia High School Graduation Test (GHSGT)

- http://www.doe.k12.ga.us/curriculum/testing/ghsgt.asp

Agenda

This is a one-day course, with approximately six hours of instructional time.

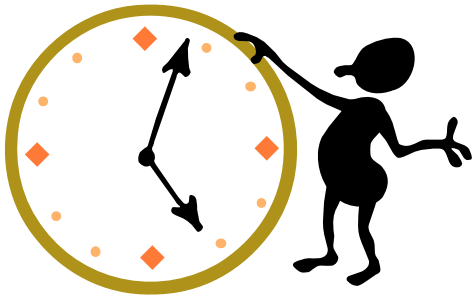
Introduction
- Hook Activity—Simulated Item Review (Optional)
- Overview of the Module
- Review of the Unpacking Process
- Assessment and Standards-Based Education

Introduction to Assessment
- Assessment Terminology
- What is Assessment *for* Learning?

Matching Assessments to Standards
- Translating Standards into Achievement Targets
- Applying What We've Learned
- Small Group Practice
- Planning for Assessment

Performance Assessments and Rubrics
- Defining Performance Assessment
- Guidelines for Performance Assessment
- Components of Rubric Design

Putting It All Together
- Designing an Assessment Plan: Small Group Work
- Follow-Up Assignment



Introduction

Overview

After a brief presentation of the day's agenda and objectives, participants will discuss the role of assessment in the Standards-Based Education process, review Day 1, make connections between Stages 1 and 2 of training, and establish a foundation for the day's content.

Objectives

- Describe how and why assessment is Stage 2 in the Standards-Based Education process.

Activities

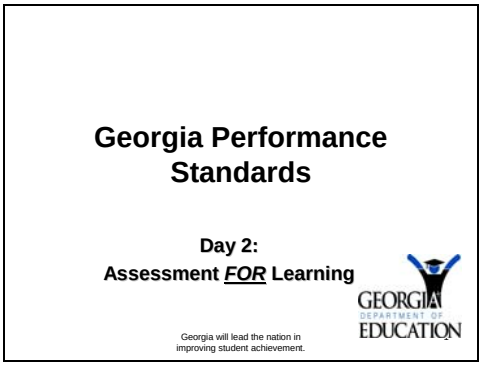
- Overview of the Module
- Assessment and Standards-Based Education

Materials

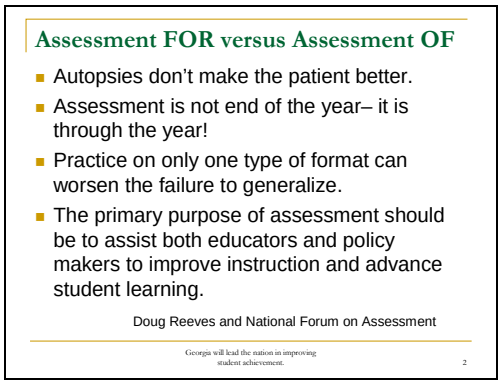
- Overhead projector or computer and LCD projector
- Transparencies or PowerPoint presentation

Overview of the Module

Slide 1. Welcome participants to Day Two of training.



Slide 2. Show slide and discuss the quotes. It is the formative assessment for learning that makes a difference in the student learning.



3. **Read over these quotes from Doug Reeves. Talk with a partner about one or more than one. Share your thinking at your table.**

Hook Activity

Per table: Poster with columns
Item Cards

Assessment Item Review

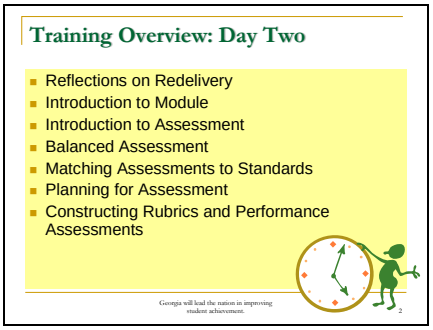
This is an optional hook activity to use if there is time. It allows participants to simulate the assessment item review that takes place on a testing committee.

- **As a group, read the Standard, element and item for review.**
- **Place the card on the column that fits the group consensus—Accept, Accept with modifications, or Reject.**
- **Discuss decisions in whole group.**

The cards are included in the Appendix.

Slide

1. Show slide, *Training Overview: Day Two*.



2. Present:
   - **Let's review today's agenda.**
   - **During the Reflections on Redelivery, we will review Day 1 in order to connect that content to today's content and update any new participants.**
   - **In the Introduction to Assessment section, we will discuss different types of assessments and assessment terminology.**
   - **In the third section, we will examine what using Balanced Assessment means in the classroom.**
   - **During the fourth section, Matching Assessments to Standards, we will use the information acquired in the previous sections to determine the appropriate types of assessments for the different types of achievement targets in the standards.**
   - **In the Planning for Assessment section, we will look at assessment plans and create an assessment plan for a unit of study.**
   - **In the last section, we will discuss appropriate ways to construct and use rubrics and performance assessments.**
   - **Finally, we will transition the pre-work for Days 3 and 4 training.**

[Facilitator's Note: Grading Student Work, Writing and use of Teacher Commentary will be addressed in Day 6 training.]

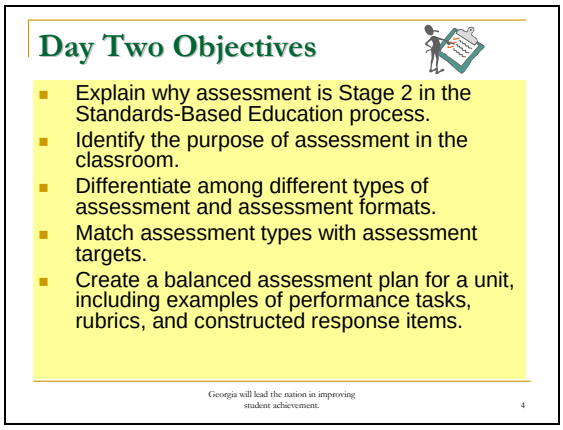
Chart Paper
Markers

Reflections on Redelivery

- **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 rest of the groups the main points of the list.**
- **Highlight the ones to address and work on during this session.**

Slide

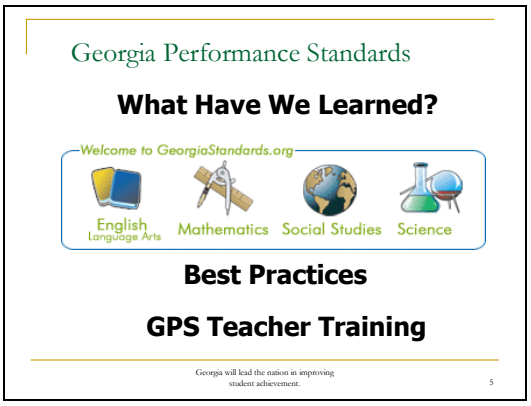
2. Show slide, *Day Two Objectives.* Explain:



- **Let's review today's goals and objectives.**
- **These objectives build from an understanding of the underlying concepts to the process of designing thoughtful assessments within an assessment plan in order to improve student learning.**

Slide for 8th grade guide

3. Kathy Cox, State Superintendent of Schools represented the GADOE as a key note speaker at the Georgia Association for Curriculum Directors Conference at Athens, Georgia on September 20, 2006. These slides are from her speech. Her speaking notes are included in italics below the slides.

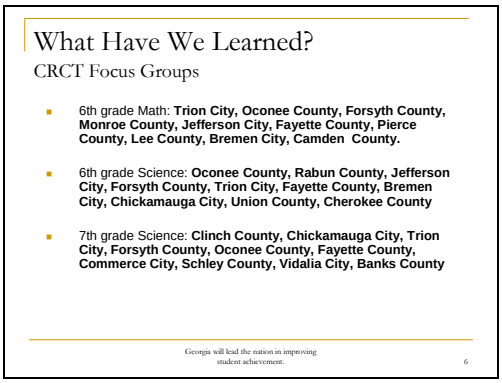


We are very proud of the success of the GPS. But there were lessons to be learned and we made sure we took the time to listen to the people who matter most – the educators who are using this in the field.

We learned a lot by asking questions and listening.

For instance: After the results of the new CRCTs aligned to the GPS came out, we realized that we had to figure out what was going on in middle schools math and science. Pass rates in the 60s statewide are not acceptable.

4. Show slide.

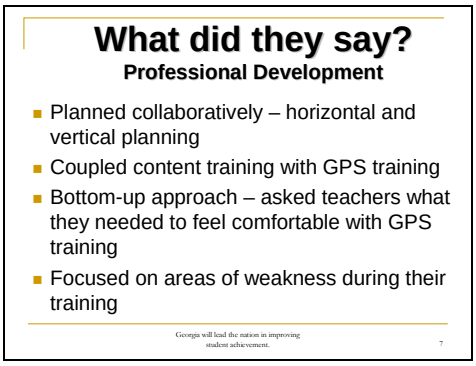


We brought together the top 10 performing school systems to talk about best practices, to tell us what they did to support the new curriculum and to prepare their students for the exams. They were from all over the state – Trion to Forsyth to Vidalia.

What were the areas they had in common?

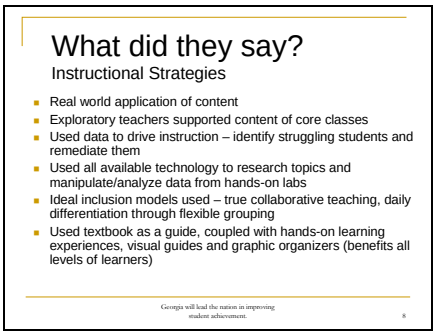
Professional Development
Instructional Strategies
Found Time and Resources

5. Show slide.



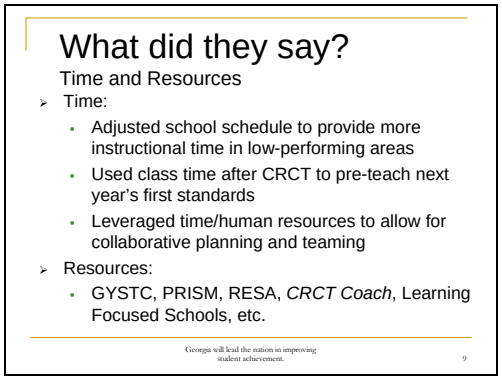
In terms of professional development, these groups told us they:
Planned collaboratively – horizontal and vertical planning
Coupled content training with GPS training
Took a bottom-up approach – asked teachers what they needed to feel comfortable with GPS training
Focused on areas of weakness during their training

6. Show slide.



When it came to Instructional Strategies, they told us that they:
Real world application of content
Exploratory teachers supported content of core classes
Used data to drive instruction – identify struggling students and remediate them
Used all available technology to research topics and manipulate/analyze data from hands-on labs
Ideal inclusion models used – true collaborative teaching, daily differentiation through flexible grouping
Used textbook as a guide, coupled with hands-on learning experiences, visual guides and graphic organizers (benefits all levels of learners)

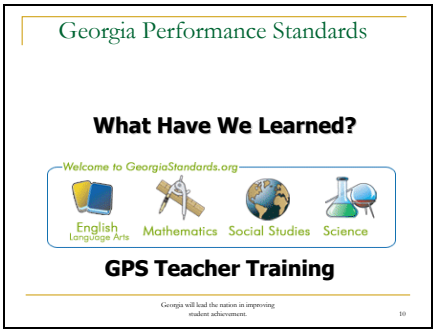
7. Show slide.



When it came to TIME, they:
Adjusted school schedule to provide more instructional time in low-performing areas
Used class time after CRCT to pre-teach next year's first standards
Leveraged time/human resources to allow for collaborative planning and teaming

When it came to RESCOURCES, they used:
Georgia Youth Science and Technology Centers
Took advantage of programs like PRISM
Used the resources at their area RESAs,
Used programs and materials like CRCT Coach, Learning Focused Schools, etc.

8. Show slide.

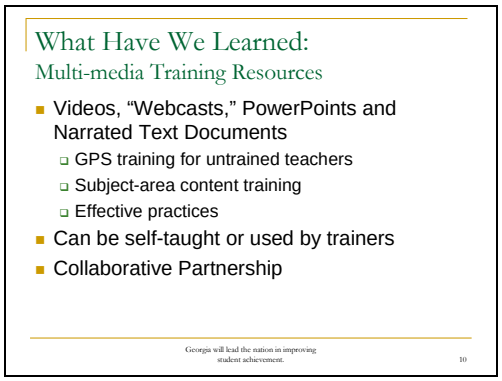


Let me talk briefly about the GPS Teacher training.

The feedback we received from you was overwhelmingly good, but we have made adjustments to the training based on the feedback of teachers and curriculum directors. Hopefully you'll see that in the ongoing training and implementation.

The teachers and directors also said they'd like more resources for ongoing learning and professional development.

9. Show slide.

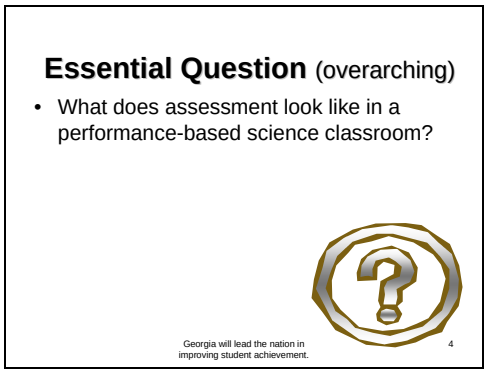


Online Multi-media Training Resources

Developing videos, web casts, PowerPoint, text documents with narratives
Content is focused on:
GPS training for teachers not trained
Subject-area content training
Effective practices (collaborative teaching, differentiation, etc)
Can be used for self-teaching or by trainers at state, district, or school-level
Joint project with Georgia Public Broadcasting, Educational Technology Training Centers, universities, PRISM, DOE divisions, and others

Assessment and Standards-Based Education

Slide 1. Show slide, *Essential Question (overarching).*

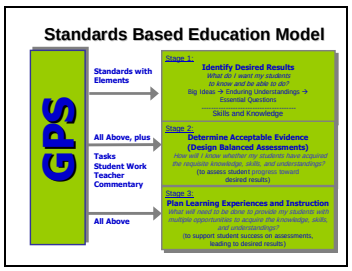


2. Present: **The GPS differs significantly from the QCC because the performance standards require students to provide evidence of learning. Consequently, classroom teachers need to understand what evidence of learning looks like and how to design an assessment plan that will allow students multiple opportunities to provide this evidence of learning. We will spend this day of training working together to answer this question.**

3. **We will consider the types of assessments that will allow students multiple opportunities to provide evidence of learning. Evidence of learning, in other words, is provided as students demonstrate, through a number of different assessment means, what they know, can do, and understand.**

4. Present: **All of our discussion, activities, and work today centers on the role assessment plays in teaching with performance standards.**

Slide 5. Show slide, *Standards Based Education Model*.



[*Facilitator's Note: The animation for this slide is set so that one section appears at a time, advanced by clicking the mouse.]*

6. Click the mouse; then present: **During Day 1 of training, we practiced the process of examining some of the Georgia Performance Standards in science to determine exactly what the standards say—what we want our students to know, be able to do, and understand. We identified the Big Ideas embedded in the standards, and we grouped Big Ideas together to formulate Enduring Understandings, the broad statements or generalizations that span a number of standards, strands, and/or disciplines, and that specify what our students should understand at the end of a unit, at the end of a course, or twenty-five years from now.**

7. **Remember that the Georgia Performance Standards in Science were based on *Benchmarks for Science Literacy* and *National Science Education Standards.* Both of these books provide the guidelines of what a student should understand. If you are unsure of the depth of understanding or want further clarification, you can refer to either of these for help.**

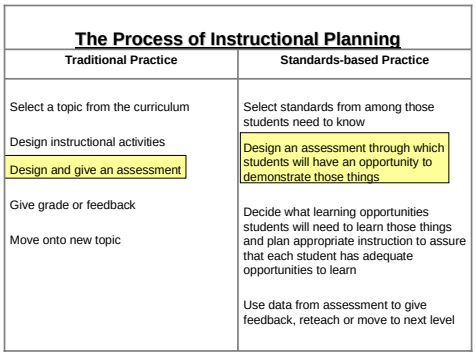
8. Click mouse; then present: **Finally, we developed Essential Questions that directly relate to the Big Ideas and the Enduring Understandings and, consequently, directly relate to the standards. We developed broad, overarching questions as well as more specific and topical questions. We began to examine the different types of knowledge - both Declarative Knowledge (facts, rules, concepts) and Procedural Knowledge (skills, procedures, and processes) that must be acquired for students to achieve deep understanding.**

9. Click mouse; then present: **Today, we will connect the work on Stage 1 of the Standards-Based Education process with Stage 2: designing appropriate, balanced assessment plans that allow students to demonstrate the depth of their understanding of the concepts, skills, and processes inherent in the Georgia Performance Standards.**

10. Present: **Planning assessments this early in the SBE process may be difficult for many of us to grasp because we have traditionally planned our learning experiences and instruction before considering assessment.**

11. Click mouse; then present: **But it is only after we have determined what we want students to know, understand, and be able to do (Stage 1) and what constitutes acceptable evidence of the knowledge, skills, or understanding (Stage 2) that we make decisions about the specific instructional activities, tasks, and/or lessons that we will employ to help our students achieve these desired results (Stage 3).**

Slide 12. Show slide, *The Process of Instructional Planning.*

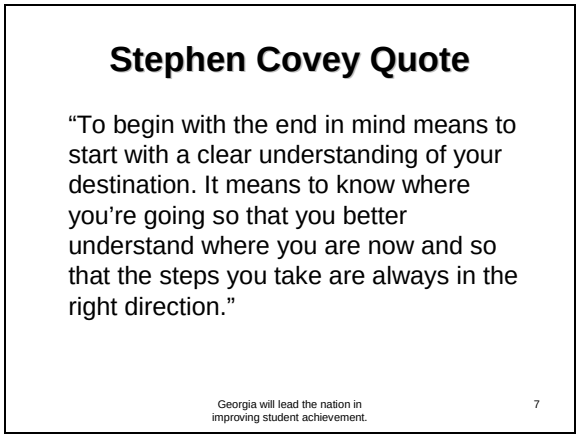


The Process of Instructional Planning

Traditional Practice	Standards-based Practice
Select a topic from the curriculum	Select standards from among those students need to know
Design instructional activities	Design an assessment through which students will have an opportunity to demonstrate those things
Design and give an assessment	Decide what learning opportunities students will need to learn those things and plan appropriate instruction to assure that each student has adequate opportunities to learn
Give grade or feedback	Use data from assessment to give feedback, reteach or move to next level
Move onto new topic	

13. Present: **In standards-based instructional planning, the unpacking of the standard and elements occur first. Then the role of assessment changes from a means of determining grades to an integral, on-going part of the learning process of collecting evidence of the student understanding.**

Slide Show slide, *Stephen Covey Quote*. Present: **This quote summarizes the rationale behind developing assessment prior to instruction.**



Transition: **Now that we have examined the rationale behind designing assessments during Stage 2 of the Standards-Based Education process, we need to reach agreement on assessment terminology in order to establish some common ground for the remainder of our work with assessment today.**

Introduction to Assessment

Overview

In this section, participants will define relevant assessment terminology before coming to terms with the concept of assessment *for* learning.

Objective

- Define common terms related to assessment.
- Explain the concept of assessment *for* learning.

Activities

- Assessment Terminology
- What is assessment for learning?

Materials

- Overhead projector or computer and LCD projector
- Transparencies or PowerPoint presentation

Assessment Terminology

1. Present: **State and other standardized tests provide data on overall school performance and can be valuable program evaluation tools. As Rick Stiggins notes in the *Phi Delta Kappan* (June 2002), preparing some students for such tests can have a positive effect on learning; but this positive effect on learning is not evidenced for all students. For a number of our students, these forms of state and standardized assessments *of* learning may have a detrimental effect because students who lack confidence in their ability to learn become discouraged and give up (Stiggins 2002).**

2. **Currently the state or high-stakes assessments receive most of the media attention; but it is classroom assessments *for* learning that allow teachers to keep the focus on learning, to make continuous instructional decisions that benefit individual learners, and to build students' confidence in their ability to learn.**

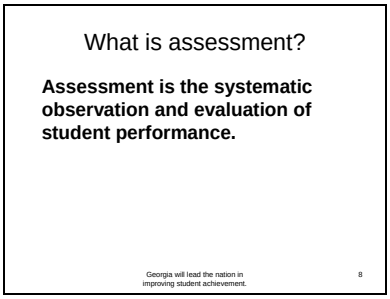
3. **As Stiggins notes, a balanced range of classroom assessments are effective in improving student achievement, not only in individual classrooms, but also on the state or other standardized tests that provide program evaluation data. In fact, Stiggins refers directly to a research review by Paul Black and Dylan William that reports effect sizes of one-half to a full standard deviation for students who experienced "improved formative assessment" in their classrooms. This gain is sufficient to improve student achievement on standardized tests by "*more than 30 percentile points, two grade-equivalents, or 100 points on the SAT scale.*" (Stiggins 2002)**

4. **By gathering evidence of learning through a variety of types of classroom assessments, teachers are able to develop a complete picture of students' progress in meeting identified standards. Teachers, students, parents, and others need timely feedback about students' academic achievement for a number of reasons, but most importantly so that students can experience the learning opportunities they need to succeed.**

5. **Classroom assessments give teachers the kind of data they need to ensure that students meet standards, that they have acquired the requisite knowledge, skills, and understanding, and, consequently, that they are able to demonstrate improved achievement on state and district assessments as well.**

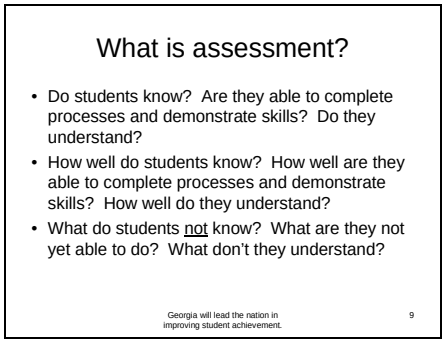
What is Assessment?

Slide 6. Show slide.



Present: **Assessment is the systematic observation and evaluation of student performance.**

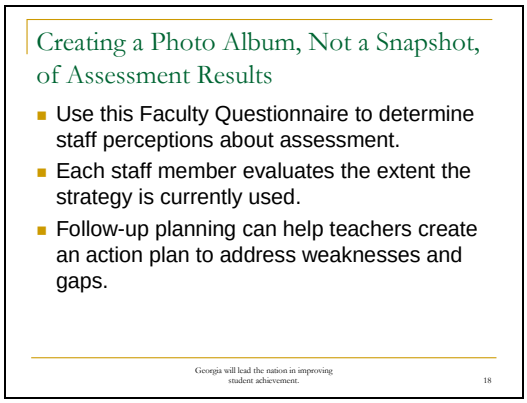
Slide 7. Show slide.



Present: **In simpler words, assessment helps teachers answer these questions:** Review questions on slide.

8. **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 a *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.**
9. **Each staff member uses the rating scale on the next page 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.**

8. Show slide.
9. Present: **A copy of this questionnaire is included on the next page and in the Appendix.**



10. **Use the results to create an action plan or follow-up plan to address weaknesses/omissions and give audience to strengths.**

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

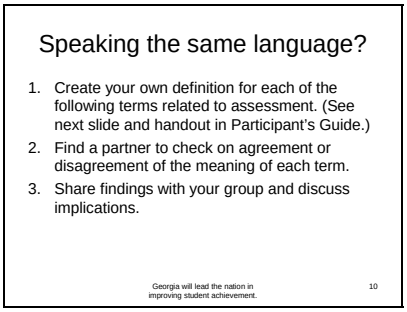
A Faculty Questionnaire

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

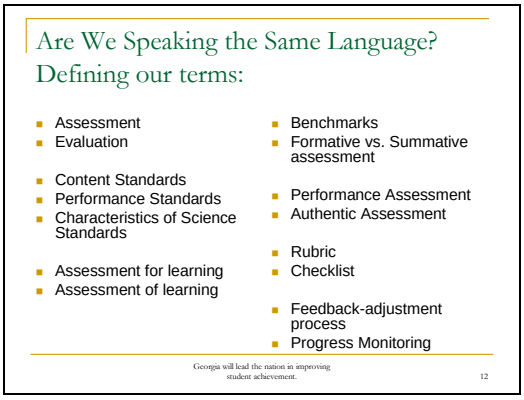
_____ 1. We avoid one-shot or limited assessment approaches.
_____ 2. Our assessment process is based upon multiple forms of evidence, not just tests and quizzes.
_____ 3. We seek to create a varied and comprehensive portrait of students' progress aligned with consensus-driven content and performance 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.

Slide 10. Show slide.



Slide 11. Present: **We will look at a few key terms with which we're probably already familiar; however, a couple may be new. Let's talk about these terms to make sure we all have the same understanding.**

12. **Look at the next slide for the list of terms. The terms are grouped according to similarities and differences. Read over the first two to determine your understanding of the meaning of the terms.**
Trainer's Note: Each term will appear with a click. Choose to discuss one set of terms at a time.



- **Let's look at the first set of terms—Assessment and Evaluation.**
- **What do these two terms mean to you? Are they the same or are they different? Think about it for a minute.**
- **Now turn to a partner and discuss your thinking.**

Give participant's time to discuss.

- **Have a discussion at your table. Are the terms the same or are they different? What does the group think?**
- **Let's discuss as a whole group.**

13. **If we look up these terms, we find the following information:**

    - **Assessment is the <u>collecting of formal or informal data.</u>**
    - **Evaluation is <u>making judgments</u> about the quality of student work or performance.**

14. **Are we speaking the same language?**

Let's look at another set of terms and follow the same process.

Trainer's note: Use your time schedule to determine the sets of terms you wish to have the group discuss and collaborate on meanings. Follow the same procedure as outlined:

- **Find a partner and compare your understanding. See if you agree or disagree about the meaning of each term and each group of terms.**

- **Join with other teams to build a group consensus about the meaning of each term and each group of terms.**

- **Come back together as a whole group.**

- **What did you find out? Are there terms that need further discussion or consensus-building?**

15. Ask participants to work with others at their tables to define and provide concrete examples of each of these terms. Allow 7-10 minutes.

16. As groups conclude this task, ask each group to share their definitions of "screening" until consensus about the meaning is reached. Proceed through the other terms in the same way, reaching consensus on each.

17. Inform participants that the generally accepted definitions for these terms have been included in the Appendix.

18. Emphasize:
    - **There have been some questions regarding the assessment of and expectations for students with the most significant cognitive disabilities in relation to the GPS.**
    - **NCLB and IDEA require the provision of access to a curriculum with challenging academic standards for *all* children, even the 1% with the most significant cognitive disabilities.**
    - **Levels of achievement expectations on the GPS will be established for that 1%. The DOE will revise or redesign the Georgia Alternate Assessment for that 1%.**
    - **To summarize, *all* teachers in our state must go through this training and learn these standards, because the GPS are the framework for *all* students; however, the tasks/measures used to assess the 1% of students who qualify under NCLB may be different.**

Balanced Assessment

Overview In this section participants will examine different assessment formats and frameworks to determine key points, examples, advantages, and disadvantages of each. They will then examine their own assessment practices before evaluating a prepared assessment plan for an instructional unit.

Objective
- Determine characteristics of different assessment formats and frameworks.

Activities
- Balanced Assessments: Frameworks and Formats
- Self-Assessment of Participants' Classroom Practices
- Comparison of Assessment Formats
- Assessment Design

Materials
- Overhead projector or computer and LCD projector
- Transparencies or PowerPoint presentation
- Assessment Format Handout

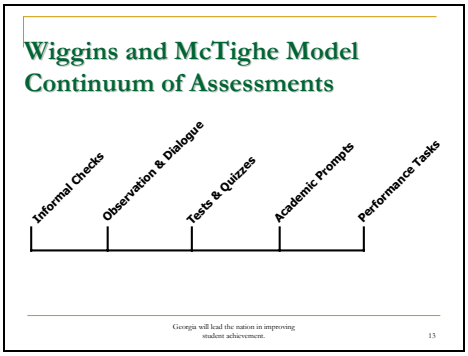
Balanced Assessment: Frameworks and Formats

1. Present: **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.**

Trainer's note: Emphasize that we are not using one particular way of looking at assessment. As the next few slides show, we are using models from research experts such as Wiggins, McTighe, Stiggins and Marzano.

Slide

2. Show slide.

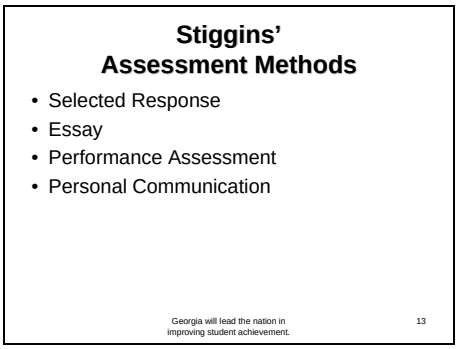


3. Present: **Authors describe and categorize assessment formats in a number of different ways. For example, Wiggins and McTighe describes a continuum of assessments.**

Review information on slide.

Slide

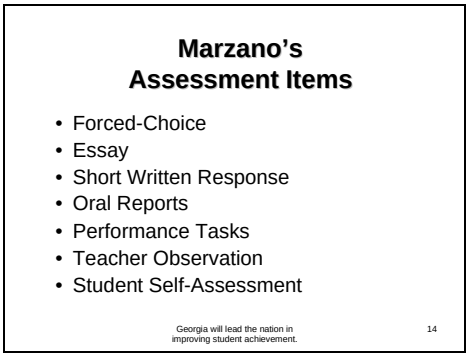
4. Show slide.



5. **Present: Rick Stiggins categorizes assessment formats slightly differently. He refers to four categories of assessments: *Selected Response*, *Constructed Response*, *Performance Assessment*, and *Personal Communication*.**

Slide

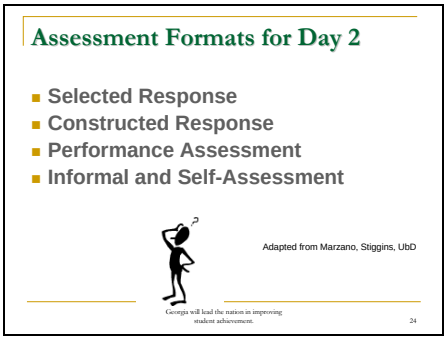
6. Show slide.



➢ Present: **Robert Marzano describes seven assessment items.** Review information on slide.

Slide

7. Show slide.



9. Present: **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*.**

10. **A handout on each of these terms and what they include is in the next section and in the Appendix.**

A. 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.

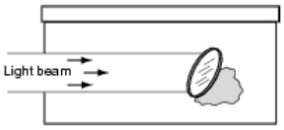
B. Key Points

Familiar assessment formats consisting of simple, content-focused items that

- Assess for factual information, concepts and discrete skill
- Use multiple-choice, true-false, matching, and fill-in-the-blank formats
- Have a single, best answer
- May be easily scored using an answer key or machine
- Items are typically not known in advance

C. Example including Standard and element—S8P4b

Melissa knew that if she shined a light beam directly into a flat mirror, the reflection would bounce straight back at her. She wanted to investigate what would happen if she shined a light into the same mirror at an angle. To investigate this, she built a light box as shown below.



What is the purpose of her experiment?

A. to see if a mirror does reflect light beams
B. to compare the beam hitting the mirror and the beam reflected
C. to compare the widths of the two light beams hitting the mirror
D. to see if the beam is absorbed or reflected by the mirror

Write an example of a Selected Response assessment item matching it to a **Standard** and **Element**:

D. Advantages of using this format

E. Limitations of using this format

A. 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. 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.

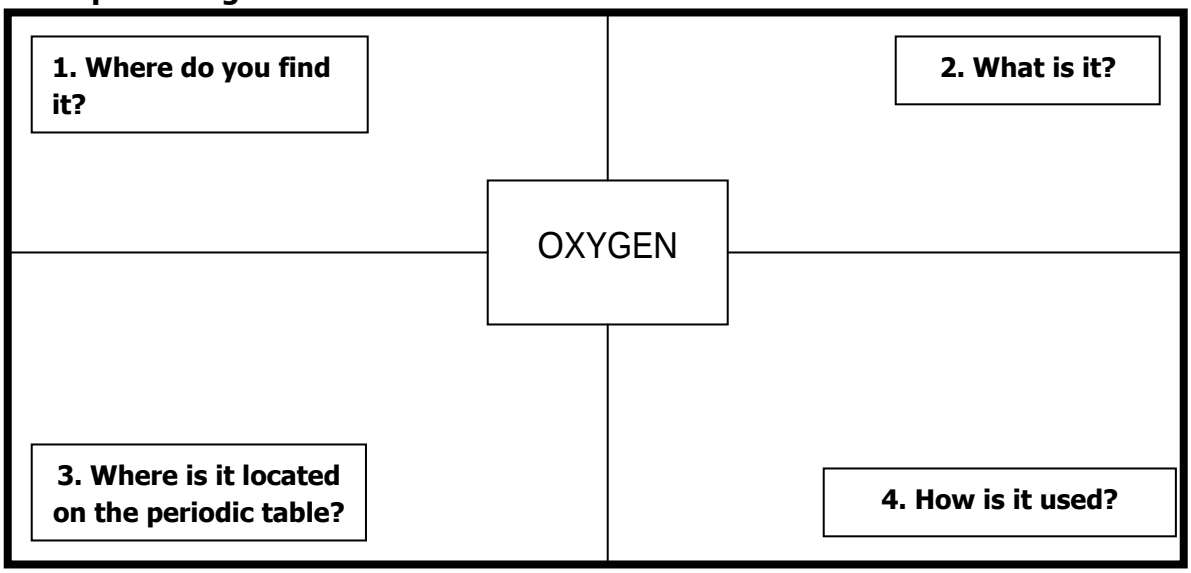
Another example of constructed response is an academic prompt with open-ended questions or problems that require that the student think critically, not just recall knowledge, and to prepare a specific response, product or performance such as an essay.

Drawings, charts, tables, and diagrams that students make also fit as constructed responses. Constructed response formats require the student to construct the response with a prompt.

B. Key Points

- Require constructed responses to specific prompts under school and exam conditions
- Are "open," with no single best answer or strategy expected for solving them
- Often require the development of a strategy
- Involve analysis, synthesis, and evaluation
- Typically require an explanation or defense of the answer given and the methods used
- Require judgment-based scoring based on criteria and performance standards
- May or may not be secure
- Involve questions typically only asked of students in school

C. Examples using Standard and element—S8P1f



Write an example of a Selected Response assessment item matching it to a **Standard** and **Element**:

D. Advantages of using this format

E. Limitations of using this format

A. Performance Tasks

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).

B. Key Points

- The setting is real or simulated and involves the kind of constraints, background "noise, incentives, and opportunities an adult would find in a similar situation (i.e., they are authentic)
- Are based on a specific purpose that relates to the audience
- Allow students greater opportunity to personalize the task
- Are not secure: the task, evaluative criteria, and performance standards are known in advance and guide student work

C. Examples using Standard and element—S8P5c

You are an electrician reporting to the CEO of a large firm. You must show him the advantages and disadvantages of how to wire the new product. Use two batteries, two bulbs, and copper wires. Connect them in various ways demonstrating how to light both bulbs. Sketch each as you connect them. Observe the brightness of the bulbs. Rank your sketches in order of bright to dim. Are series circuits or parallel circuits brighter? What are the advantages and disadvantages of each method?

Write an example of a Selected Response assessment item matching it to a **Standard** and **Element**:

D. Advantages of using this format

E. Limitations of using this format

A. Informal and 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.

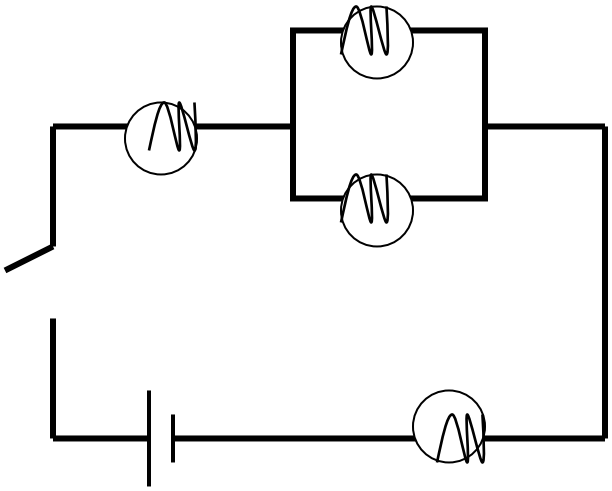
Self-assessment represents another type of informal assessment. Students or teachers might use checklists to assess informally or to self-assess. Students self-assess as they become constructive critics of their own work or assess their growth or progress toward their learning goals. Assessing one's 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.

B. Key Points

- On-going assessments as part of the instructional process
- Teacher questioning
- Observations
- Examining student work
- Think aloud
- Reflective journals
- Provide feedback to the teacher and the student
- Are not typically scored or graded

C. Examples using Standard and element—S8P5c

Think aloud process: Place a circuit diagram transparency on the overhead. Have students predict whether all four light bulbs will shine with the same brightness. Allow students three minutes to process (or think) about their answer before sharing with the group.



Write an example of a Selected Response assessment item matching it to a **Standard** and **Element**:

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E. Limitations of using this format

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C. Example including Standard and element—S1E1a

Match the word with the picture.

Sunny
Rainy
Cloudy

Write an example of a Selected Response assessment item matching it to a **Standard** and **Element**:

D. Advantages of using this format

E. Limitations of using this format

A. Constructed Response

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Another example of constructed response is an academic prompt with open-ended questions or problems that require that the student think critically, not just recall knowledge, and to prepare a specific response, product or performance such as an essay.

Drawings, charts, tables, and diagrams that students make also fit as constructed responses. Constructed response formats require the student to construct the response with a prompt.

B. Key Points

- Require constructed responses to specific prompts under school and exam conditions
- Are "open," with no single best answer or strategy expected for solving them
- Often require the development of a strategy
- Involve analysis, synthesis, and evaluation
- Typically require an explanation or defense of the answer given and the methods used
- Require judgment-based scoring based on criteria and performance standards
- May or may not be secure
- Involve questions typically only asked of students in school

C. Examples using Standard and element: SKE1b

1. Draw at least two things you see in the sky during the day.
2. Draw at least two things you see in the sky at night.

Write an example of a Selected Response assessment item matching it to a **Standard** and **Element**:

D. Advantages of using this format

E. Limitations of using this format

A. Performance Tasks

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.

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B. Key Points

- The setting is real or simulated and involves the kind of constraints, background "noise, incentives, and opportunities an adult would find in a similar situation (i.e., they are authentic)
- Are based on a specific purpose that relates to the audience
- Allow students greater opportunity to personalize the task
- Are not secure: the task, evaluative criteria, and performance standards are known in advance and guide student work

C. Examples using Standard and element—SKL1a

You are making a collection of living and nonliving things to display in the media center. Listed below are examples of living (which includes once-living) and nonliving things. Sort these for the collections. Be ready to tell your thinking.

Tree	Rock	Fire	Boy	Wind
Rabbit	Cloud	Feather	Grass	Seed
Egg	Sun	Mushroom	Potato	Leaf
Butterfly	River	Flower	Ant	Water

Write an example of a Selected Response assessment item matching it to a **Standard** and **Element**:

D. Advantages of using this format

E. Limitations of using this format

A. Informal and Self-Assessment

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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.

B. Key Points

- On-going assessments as part of the instructional process
- Teacher questioning
- Observations
- Examining student work
- Think aloud
- Reflective journals
- Provide feedback to the teacher and the student
- Are not typically scored or graded

C. Examples using Standard and element- S2L1a

"What have you noticed lately about our caterpillars?"
SP1b: "Where have you seen shadows?"

Here are six science journal prompts:

- Today I discovered that…. I also learned that…. The most interesting part of the experiment was…. I am still wondering ….
- Today I observed…. I predict that…. I also measured…. I concluded that….
- Today I learned about (vocabulary word). I discovered that (vocabulary word) ….
- Today I observed (topic). I now know what happened to …. I am still unsure about ….
- Today I conducted a science activity about (topic). I predicted that … I think that…. Another question that I have is….
- Today I experimented with…. I guessed that…. I figured out…. My next experiment will be about ….

Write an example of a Selected Response assessment item matching it to a **Standard** and **Element**:

D. Advantages of using this format

E. Limitations of using this format

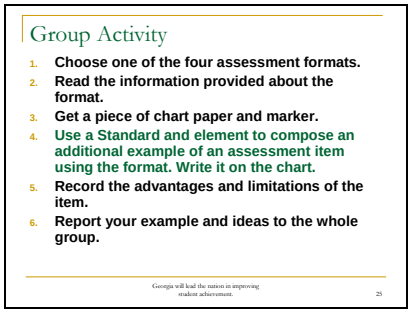
8. **Present:**

Chart Paper

Markers

Tape

Slide

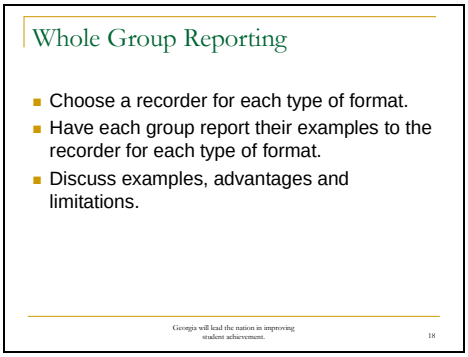


9. Allow participants time to locate the appropriate pages, then assign the formats to different table groups. Assign all four assessment formats. If there are more than four groups, have two groups work separately on the same format.

10. Present: **At your table, review and discuss the information describing your format. Then generate an example of your chosen format. Tell the advantages and limitations of this example.**

Slide

11. Show slide.



12. Present: **Choose a recorder for each format. Give the recorder chart paper and a marker.**

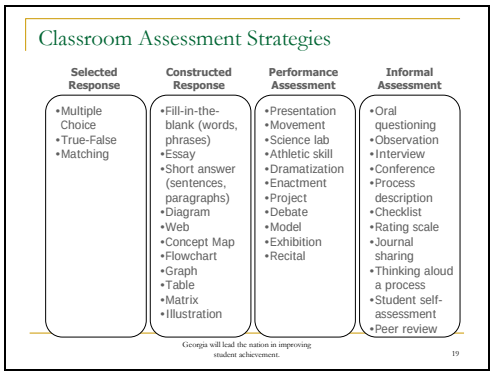
13. **On the chart paper, write the name of the assessment format. List the examples of this assessment type generated by the group. You will have 5-7 minutes to complete this task.**

- In whole group discuss the examples on each chart and the advantages and limitations of the assessment format.
- Continue until each assessment format has been discussed.

14. Show slide.

15. **Let's review the formats and strategies for each one of them.**

Slide



Classroom Assessment Strategies

Selected Response	Constructed Response	Performance Assessment	Informal Assessment
•Multiple Choice •True-False •Matching	•Fill-in-the-blank (words, phrases) •Essay •Short answer (sentences, paragraphs) •Diagram •Web •Concept Map •Flowchart •Graph •Table •Matrix •Illustration	•Presentation •Movement •Science lab •Athletic skill •Dramatization •Enactment •Project •Debate •Model •Exhibition •Recital	•Oral questioning •Observation •Interview •Conference •Process description •Checklist •Rating scale •Journal sharing •Thinking aloud a process •Student self-assessment •Peer review

Self-Assessment of Participants' Classroom Practices

1. **Present: Now that we are more familiar with assessment formats and specific types of assessments in each category, let's examine our own classroom assessment practices.**

2. Refer participants to the handout on the next page, **"*Balanced Assessment: A Self-Assessment Inventory.*"** Ask each individual to read the directions and then to complete the self-assessment, rating their level of use of each of the assessments listed, using the scale in the box shown on the first page. Ask participants to respond honestly.

3. Allow about 5 minutes for participants to complete the self-assessment inventory; then say:

4. **After you complete the self-assessment, transfer your scores to the tally chart, look over your results, and reflect on the questions listed below the chart.**

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*

Self-Assessment Score Sheet

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:	
Average		Average		Average		Average	

1. **Average each column.**

2. **Compare and contrast your totals for the various assessment formats.**

3. **Does your classroom practice reflect a balance of assessment types?**

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

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

5. Allow an additional 5 minutes or until you see that most of the participants have completed the assignment. Use the following questions to briefly discuss the results they found:

   - **What do the survey results suggest?**
   - **What patterns do you notice?**
   - **Are you using one format more that others?**
   - **Are there types of assessment you use less frequently or not at all?**
   - **Are you collecting appropriate evidence for all the desired results?**
   - **Do you rely too heavily on those that are easiest to test and grade?**
   - **How might you modify your classroom practice to better assess student learning?**

6. Present: **Just as you might use this self-assessment to modify your classroom practices, students can use self-assessment for modify their learning. This is an example of assessment *for* learning.**

Comparison of Assessment Formats

1. Present: **Performance assessments and informal & self-assessments are not meant to totally replace selected or constructed response assessments.**
2. **Each type of assessment has its own advantages and disadvantages, strengths and uses.**
3. **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.**
4. **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.**

Matching Assessments to Standards

Overview

Participants will examine in depth the kinds of knowledge and skills students will need to provide evidence of in order to meet the Georgia Performance Standards. They will then determine which types of assessment are best for particular kinds of knowledge and skills.

Objective

- Determine the best type of assessment to obtain evidence of learning for specific kinds of knowledge and skills.

Activities

- Translating Standards into Achievement Targets
- Applying What We've Learned
- Small Group Practice
- Planning for Assessment

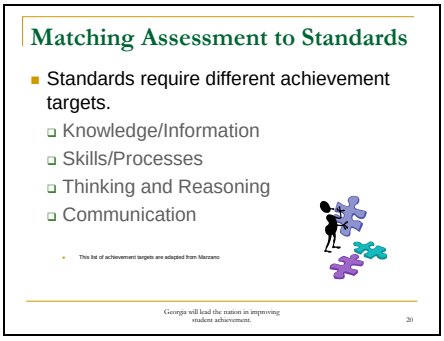
Materials

- Overhead projector or computer and LCD projector
- Transparencies or PowerPoint presentation
- Assessment Plan

Translating Standards into Achievement Targets

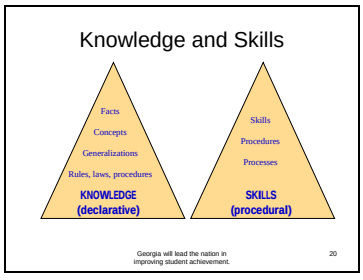
1. Present: **To assess effectively, we need to match the appropriate type or format of assessment to the kind of evidence that will provide the best indicators of the desired results we have predetermined for the standard. If the goal is for students to learn basic facts, then paper-and-pencil tests 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 2. Show slide.



Present: **In Day 1 when we looked at knowledge, we considered facts, concepts, generalizations, rules, laws, procedures (here procedures refers to steps we need to follow in a process); in other words, the basic content knowledge we need to acquire before we can truly understand. Likewise, skills included those skills, procedures, and processes that we use to apply our knowledge in order to achieve understanding. Knowledge and Skills are two achievement targets.**

Slide 3. Show slide and refer to handout in Appendix for more information about Knowledge and Skills.



Present: **Today we're going to extend our understanding of knowledge and skills to include the achievement targets of "Thinking and Reasoning" and "Communication." These skills include additional ways of applying knowledge and skills in order to provide evidence of learning. Let's look briefly at what each achievement target means.**

4. Present: **Knowledge/Informational targets refer to a student's complete and detailed understanding of the information important to a topic, unit of instruction, or course—the <u>content knowledge</u>. What are some examples of Knowledge/Informational targets in the standards?**

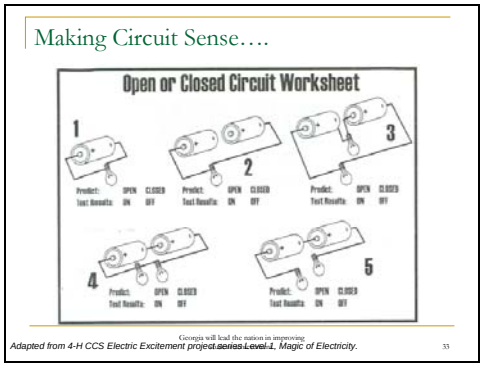
   Allow time for participants to look over standards and contribute suggestions.

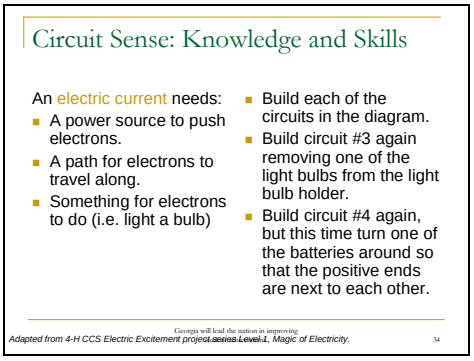
5. Present: **Skill/Process targets refer to a student's success in performing a skill or process important to the topic, unit, or course. The student must demonstrate that s/he understands the key features of the skill or process. What are some examples of Skill/Process targets from the standards?**

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

8th gr. slide

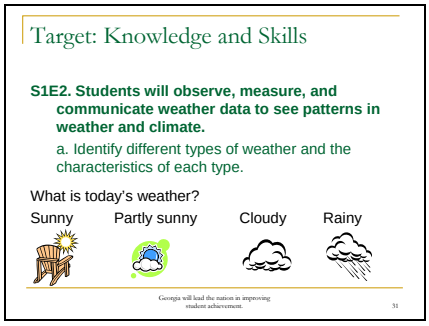
6. Eighth Grade Example of a Skill

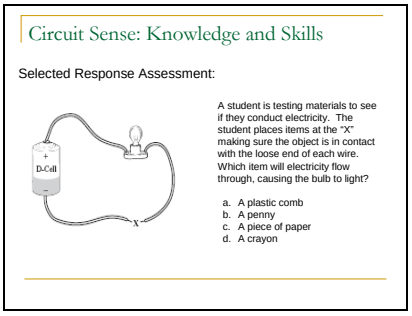




In the left hand column, you have what the students need to know about electric currents in order to recognize open and closed circuits. The right hand column list what students should be able to do. In this example, students will build five different circuits.

Slide 7. Show slides.





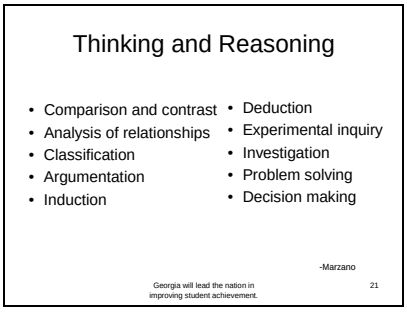
First Grade Example Eighth Grade Example of Knowledge

These are examples of knowledge and skills, selected response assessments.

The eighth grade item will assess if students are able to recognize an open or closed circuit as well as the type of path needed for electrons to flow.

8. Present: **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. Here's a list of "Thinking and Reasoning" skills generated by Robert Marzano.**

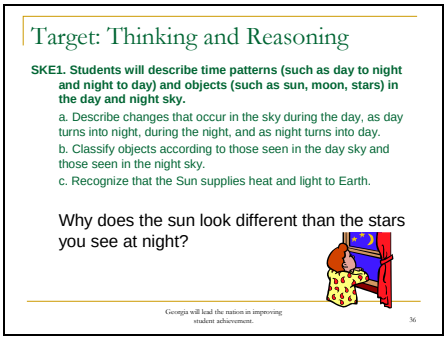
Slide 9. Show slide.



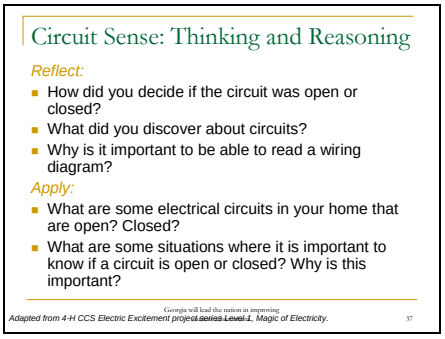
Present: **Can you think of others that we might add? What are some specific examples of "Thinking and Reasoning" targets that are specified in the standards?**

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

Slides



Kindergarten Example



Eighth Grade Example

These are examples of constructed response assessments. They allow students to express their experiences (understandings) about the topic.

Present: **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.**

Applying What We've Learned

Chart paper
Markers

5. Ask table groups to reconsider the assessment formats they discussed earlier (Selected Response, Constructed Response, Performance Assessment, Informal & Self-Assessment).

Facilitator's note: On the next page is a chart that they can use to fill out their responses.

6. Present: **Examine each item listed in each section to determine whether this concern is addressed satisfactorily by each of the assessment formats listed across the top.**

7. **For example, is there an opportunity for a student to explain his/her response on a**
   - **Selected Response type of assessment? (no)**
   - **Constructed Response assessment? (yes)**
   - **Performance Assessment (yes)**
   - **Informal & Self-Assessment (yes)**

8. Present: **As you reach consensus in your group, record your response to each item for each assessment type. Not all items may result in a simple yes or no. Some may require additional explanation.**

9. **Allow groups about 8-10 minutes to discuss and complete their sections of the table. Ask if there are any items that individuals would like to discuss with the group as a whole.**

10. Present: **When we examine assessment in this manner, we see not only those different types of assessments meet different needs, but also that at times those different needs may appear to be in conflict. An assessment that allows a student the opportunity to provide the best evidence of understanding may not be the most objective, the most time efficient, etc.**

11. **We need to work together and with school leaders to design a number of different assessments that will meet everyone's needs: those of students, teachers, parents, and administrators.**

12. **Remember, too, what we said at the beginning of the day: State and other standardized tests provide data on overall school performance and can be valuable program evaluation tools; but it is classroom assessments *for* learning that allow teachers to keep the focus on learning, to make continuous instructional decisions that benefit individual learners, and to build students' confidence in their ability to learn.**

Matching Assessments with Standards

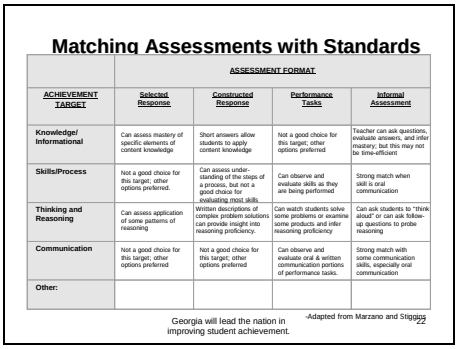
	ASSESSMENT FORMAT			
ACHIEVEMENT TARGET	**Selected Response**	**Constructed Response**	**Performance Tasks**	**Informal Assessment**
Informational (Knowledge)				
Process (Skills)				
Thinking and Reasoning				
Communication				
Other:				

13. **There are some suggestions for how each strategy matches the different kinds of assessment.**
14. Transition: **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. 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.**

Assessment Design

1. Present: **Now let's pull all that we have discussed so far today together. You will need the page you have just completed on the comprehension standard.**

Slide 2. Show slide.



Matching Assessments with Standards

ACHIEVEMENT TARGET	ASSESSMENT FORMAT			
	Selected Response	Constructed Response	Performance Tasks	Informal Assessment
Knowledge/ Informational	Can assess mastery of specific elements of content knowledge	Short answers allow students to apply content knowledge	Not a good choice for this target; other options preferred	Teacher can ask questions, evaluate answers, and infer mastery; but this may not be time-efficient
Skills/Process	Not a good choice for this target; other options preferred.	Can assess understanding of the steps of a process, but not a good choice for evaluating most skills	Can observe and evaluate skills as they are being performed	Strong match when skill is oral communication
Thinking and Reasoning	Can assess application of some patterns of reasoning	Written descriptions of complex problem solutions can provide insight into reasoning proficiency.	Can watch students solve some problems or examine some products and infer reasoning proficiency	Can ask students to "think aloud" or can ask follow-up questions to probe reasoning
Communication	Not a good choice for this target; other options preferred	Not a good choice for this target; other options preferred	Can observe and evaluate oral & written communication portions of performance tasks.	Strong match with some communication skills, especially oral communication
Other:				

Georgia will lead the nation in improving student achievement.

-Adapted from Marzano and Stiggins

22

This chart with suggestions is in the appendix.

3. Present: **Let's compare your thinking with <u>one perspective</u> on the links between achievement targets and assessment types.**

4. Present: **Some of your responses may differ from those on the chart. Our responses can be influenced by our individual experiences, the children with whom we work, the particular assessment instrument we have pictured in our mind, etc.**
5. **Because students do not all learn in the same way or demonstrate learning in the same way, many achievement targets can and should be assessed with more than one assessment format to provide every student with the opportunity to provide evidence in multiple formats.**

Matching Assessments with Standards

	ASSESSMENT FORMAT			
ACHIEVEMENT TARGET	**Selected Response**	**Constructed Response**	**Performance Assessment**	**Informal Assessment**
Informational (Knowledge)	Can sample mastery of elements of knowledge	Essays can tap understanding of relationships among elements of knowledge	Not a good choice for this target; other options preferred	Teacher can ask questions, evaluate answers, and infer mastery; but time-consuming
Process (Skills)	Can assess mastery of the knowledge prerequisites to skillful performance, but cannot rely on these to tap the skill itself.		Can observe and evaluate skills as they are being performed	Strong match when skill is oral communication
Thinking and Reasoning	Can assess application of some patterns of reasoning	Written descriptions of complex problem solutions can provide insight into reasoning proficiency.	Can watch students solve some problems or examine some products and infer about reasoning proficiency	Can ask students to "think aloud" or can ask follow-up questions to probe reasoning
Communication	Not a good choice for this target; other options preferred	Not a good choice for this target; other options preferred	Can observe and evaluate some skills, such as oral communication	Strong match with some communication skills
Other:				

-Adapted from Marzano and Stiggins

Georgia will lead the nation in improving student achievement.

Planning for Assessment

1. Present: **To ensure that assessments provide detailed information about students' understanding and proficiency, teachers should strive for a balance of assessments in each instructional unit. To plan and track the intended achievement goals associated with the standards addressed in each unit and the assessments used, teachers might create an assessment matrix.**

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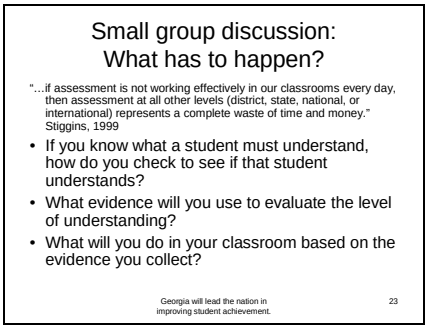
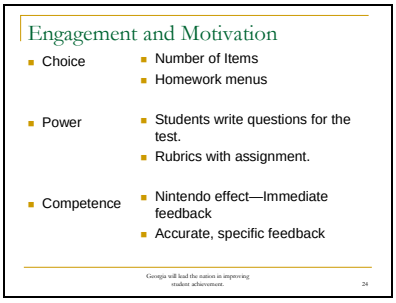


3. Present: **Read over the points presented in the previous slide. Turn to a partner and discuss what must happen in Georgia to address these points.**

4. Ask for volunteers to present their ideas to the whole group.

Slide 5. Show slide and discuss ways to motivate and engage students.



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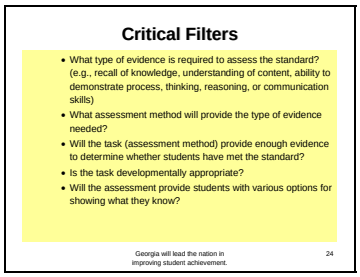


7. Present: **As we begin to develop unit assessment plans, considering "Critical Filters" such as these can help us decide on appropriate assessments.**

   Review and discuss contents of slide.

8. Transition: **We have worked thus far through a process of planning for balanced assessments in our classroom. This process includes matching the appropriate type of assessment with the different types of knowledge and skills required in the standards. We now need to learn how to construct and use appropriate performance assessments and rubrics.**

Performance Assessments and Rubrics

Overview

This section will provide some basic information for developing performance assessments and rubrics.

Objective

- Understand how and when to use performance assessments
- Understand basics of good rubric construction

Activities

- Defining Performance Assessment
- Guidelines for Performance Assessment
- Components of Rubric Design

Materials

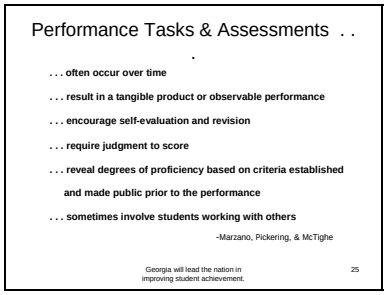
- Overhead projector or computer and LCD projector
- Transparencies or PowerPoint presentation
- Assessment Plan

Defining Performance Assessment

1. Present

- **Rick Stiggins states that "performance assessments involve students in activities that require them actually to demonstrate performance of certain skills or to create products that meet certain standards of quality." (2005)**
- **Performance assessments are designed to assess deep understanding rather than surface knowledge or discrete facts.**

Slide 2. Show slide.



3. Present: **Marzano, Pickering, and McTighe (1993) offer the following characteristics of performance assessment:**

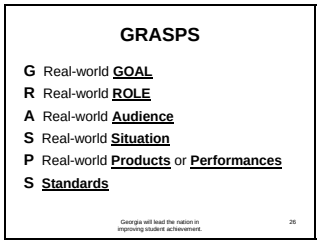
- **Performance assessments often occur over time.**
- **Performance assessments result in a tangible product or observable performance.**
- **Performance assessments encourage self-evaluation and revision.**
- **Performance assessments require judgment to score.**
- **Performance assessments reveal degrees of proficiency based on criteria established and made public prior to the performance.**
- **Performance tasks sometimes involve students working with others.**

Guidelines for Performance Assessment

1. Present: **Now let's look at a way of constructing a performance assessment. Wiggins and McTighe suggest constructing performance assessments using the acronym GRASPS.**

Slide

2. Show slide. A handout on GRASPS is included on the next page.



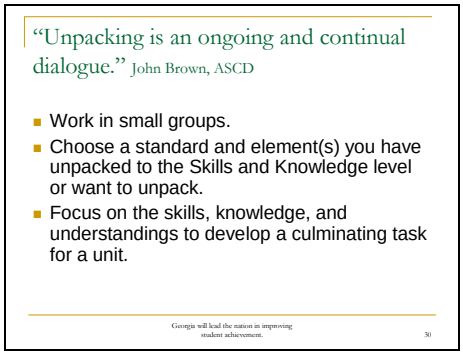
3. Present: **Let's apply the GRASPS acronym to a performance assessment in the assessment plan. Can we improve this performance assessment by employing this simple acronym?**

4. Transition**: Performance assessments should be a part of a balanced assessment plan along with constructed response and informal & self-assessments. While performance assessment takes longer for teachers to plan, they provide students with essential opportunities to apply what they know, are able to do, and understand to meaningful situations.**

5. Remind participants that some students do not realize that there are standards, let alone understand how to reach them.

Slide

6. Show slide.



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**

Example

Goal: The goal (within the scenario) is to minimize costs for shipping bulk quantities of M&Ms.

Role: You are an engineer in the packaging department of the M&Ms candy company.

Audience: The target audience is non-engineer company executives.

Situation: You need to convince penny-pinching company officers that your container design will provide cost-effective use of the given materials, maximize shipping volume of bulk quantities of M&Ms, and be safe to transport.

Product: You need to design a shipping container from given materials for the safe and cost-effective shipping of the M&Ms. Then you will prepare a written proposal in which you include a diagram and show mathematically how your container design provides effective use of the materials and maximizes the shipping volume of the M&Ms.

Standards: Your container proposal should: (a) provide cost-effective use of the given materials, (b) maximize shipping volume of bulk quantities of M&Ms, and (c) be safe to transport. Your models must make the mathematical case.

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

Possible Student Roles and Audiences

actor
advertiser
artist/illustrator
author
biographer
board member
boss
Boy/Girl Scout
businessperson
candidate
carpenter
cartoon character
cartoonist
caterer
celebrity
carpenter
CEO
chairperson
chef
choreographer
coach
community member
composer
client/customer
construction worker
dancer
designer
detective
editor
elected official
embassy staff
engineer
expert (in _____)
eyewitness
family member
farmer
filmmaker
firefighter
forest ranger
friend
geologist
government official
historian
historical figure
illustrator
intern
interviewer
inventor
judge
jury
lawyer
library patron
literary critic
lobbyist
meteorologist
museum director/curator
museum visitor
neighbor
newscaster
novelist
nutritionist
observer
panelist
character
parent
park ranger
pen pal
photographer
pilot
playwright
poet
police officer
pollster
radio listener
reader
reporter
researcher
reviewer
sailor
school official
scientist
ship's captain
social scientist
social worker
statistician
storyteller
student
taxi driver
teacher
tour guide
trainer
travel agent
traveler
tutor
TV viewer
TV or movie
visitor
Web site designer
zookeeper

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

Possible Products and Performances

What student products and performances will provide appropriate evidence of understanding and proficiency? The following lists offer possibilities. (Remember that student products and performances should be framed by an explicit purpose or goal and an identified audience.)

Written
advertisement
biography
book report or review
brochure
collection
crossword puzzle
editorial
essay
experiment record
historical fiction
journal
lab report
letter
log
magazine article
memo
newscast
newspaper article
play
poem
position paper
proposal
research report
script
story
test
Web site

Oral
audiotape
conversation
debate
discussion
dramatic reading
dramatization
interview
oral presentation
oral report
poetry reading
puppet show
radio script
rap
skit
song
speech
teach a lesson

Other:

_____

_____

Visual
advertisement
banner
cartoon
collage
computer graphic
data display
design
diagram
diorama
display
drawing
filmstrip
flyer
game
graph
map
model
painting
photograph
poster
PowerPoint show
questionnaire
scrapbook
sculpture
slideshow
storyboard
videotape
Web site

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

Generating Ideas for Performance Tasks, Part 1

Students show they understand that

when they can: *why/how/that/the/of. . .*

Explain

- ☐ connect
- ☐ describe
- ☐ explain
- ☐ inform
- ☐ prove
- ☐ persuade
- ☐ teach
- ☐ show
- ☐ justify

Interpret

- ☐ analyze
- ☐ illustrate
- ☐ interpret
- ☐ make sense of
- ☐ reveal
- ☐ represent
- ☐ show

Apply

- ☐ create
- ☐ construct
- ☐ de-bug
- ☐ decide
- ☐ design
- ☐ demonstrate
- ☐ guide
- ☐ use
- ☐ perform
- ☐ propose
- ☐ design
- ☐ solve

Shift Perspective

- ☐ compare
- ☐ critique
- ☐ debate
- ☐ evaluate
- ☐ shift perspective
- ☐ test
- ☐ consider the various views

Empathize

- ☐ empathize with
- ☐ imagine
- ☐ walk in the shoes of
- ☐ entertain the possibility that

Self-Assess

- ☐ adjust
- ☐ reflect upon
- ☐ revise
- ☐ self- assess
- ☐ recognize their habit

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

Generating Ideas for Performance Tasks, Part 3

Performance Task Ideas

meet the following criteria

☐ accurate	☐ appropriate	☐ apt	☐ clear	☐ convincing
☐ defensible	☐ effective	☐ efficient	☐ elegant	☐ empathetic
☐ informative	☐ insightful	☐ justified	☐ novel	☐ organized
☐ persuasive	☐ polished	☐ precise	☐ proficient	☐ reflective
☐ revealing	☐ sensitive	☐ skilled	☐ sophisticated	☐ supported
☐ understandable	☐ unique	☐ valid	☐ verified	☐ crafted
☐ creative	☐ correct	☐ well	☐ perceptive	☐ thorough
☐ responsive	☐ entertaining			

other: _____

so that

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

Constructing a Performance Task Scenario Using GRASPS

Consider the following set of stem statements as you construct a scenario for a performance task. Refer to the previous idea sheets to help you brainstorm possible scenarios. (Note: These are idea starters. Resist the urge to fill in all of the blanks.)

Goal:

- Your task is _____
- Your goal is to _____
- The problem or challenge is _____
- The obstacle to overcome is _____

Role:

- You are _____
- You have been asked to _____
- Your job is _____

Audience

- Your clients are _____
- The target audience is _____
- You need to convince _____

Situation:

- The context you find yourself in is _____
- The challenge involves dealing with _____

Product, Performance, and Purpose:

- You will create a _____

  in order to _____
- You need to develop _____

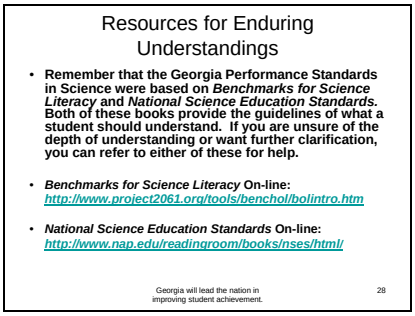
  so that _____

Standards and Criteria for Success:

- Your performance needs to _____
- Your work will be judged by _____
- Your product must meet the following standard (quality) _____
- A successful result will _____

Slide

6. Show slide.



7. Present: **We will work in small groups. Please choose a group with similar grade levels and needs.**

- **Choose a standard and element (or elements if you see the connections) you have unpacked to the Skills and Knowledge level.**
- **Use the template on Alignment on the next page.**
- **Work together to fill out the template to share with other groups.**

Remember that the Georgia Performance Standards in Science were based on *Benchmarks for Science Literacy* and *National Science Education Standards.* Both of these books provide the guidelines of what a student should understand. If you are unsure of the depth of understanding or want further clarification, you can refer to either of these for help.

- ***Benchmarks for Science Literacy* On-line: *http://www.project2061.org/tools/benchol/bolintro.htm***
- ***National Science Education Standards* On-line: *http://www.nap.edu/readingroom/books/nses/html/***

8. You may use an example of a unit plan to review the steps in the process.
9. Present: **We will use the same strategy of the Gallery Walk that we used in Day 1. Write any questions, suggestions or comments for talking points to discuss.**

Note: A template to guide Participants through the unpacking process to the Stage 2 of Balanced Assessment for Learning is included on the next page.

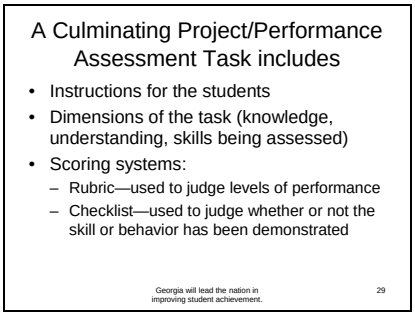
Alignment: The Logic **Standard _____ Element(s) _____**

What do the understandings imply for assessment?

Stage 1	Stage 2	Stage 2
If the desired result is for learners to….	**Then, you need evidence of the student's ability to….**	**So, the assessments need to include some things like….**
Understand that:	APPLY:	
And thoughtfully consider the questions….	EXPLAIN:	

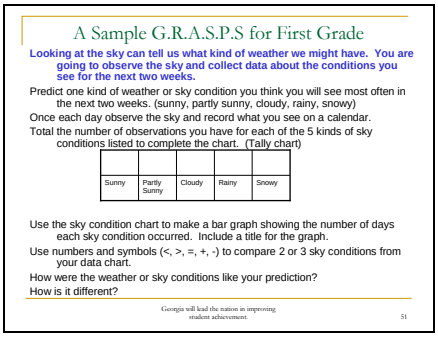
Understanding by Design Professional Development Workbook page 142

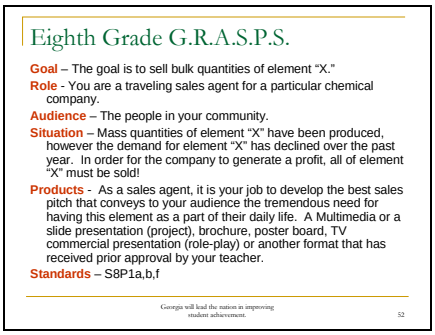
Slide 10. Show slide.



Present: **Students need assessment opportunities that will allow them to demonstrate independent understanding via explanation, application, interpretation, and self-knowledge. Culminating Project/Performance Assessment Tasks are used at least once a grading period for students to provide evidence of their understanding.**

Slide 11. Here are examples to give participants a resource of what a performance task (GRASPS) looks like.

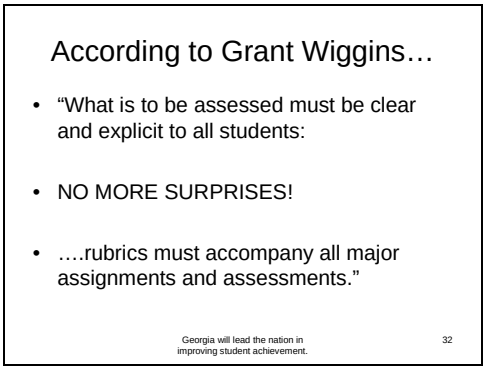




Components of Rubric Design

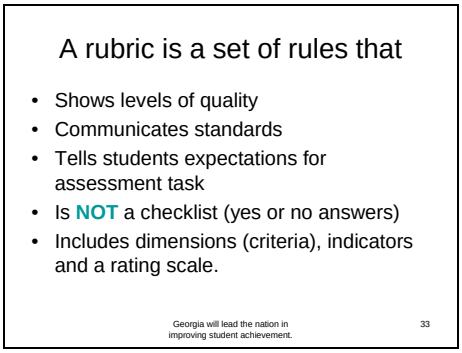
Slide

12. Show slide and talk about assessment of projects/performances and the tools for assessing.
13. **Why and how do we assess projects and performances? How do we determine "how good is good enough?"**
14. **Students and teachers must have clear guidelines of what meets the standard.**
15. **Quality rubrics can help guide teachers and students in matching criteria and indicators to lead to better evidence.**



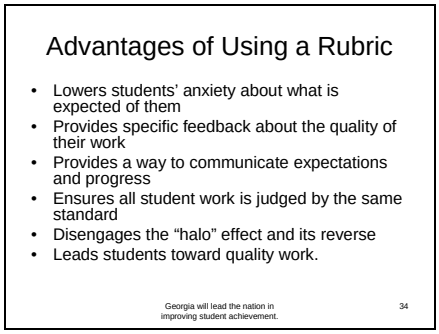
Slide

16. Show slide explaining what a rubric is and is not.

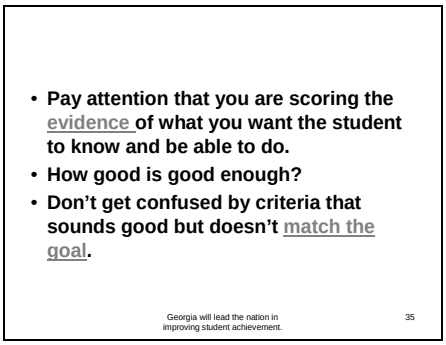


Use pages in the Appendix to provide participants with information about templates, writing rubrics, terminology, and types of rubrics.

Slide 17. Show slide and discuss the advantages of using rubrics for assessment of evidence.



Slide 18. Caution participants about the importance of matching the goal of the project/performance to the criteria you are using to score the evidence of the student's understanding.



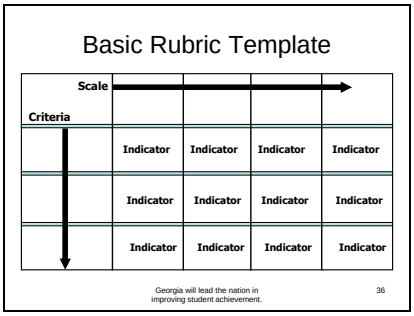
20. Present:
    - **When we assess for learning in our classrooms, students need to know the criteria on which that assessment is based prior at the beginning of the learning process for a unit or course of instruction.**
    - **Rubrics are guidelines for assessing, evaluating, and/or scoring student work and performance.**
    - **Rubrics show levels of quality and communicate expectations.**
    - **Rubrics allow students as well as teachers to "begin with the end in mind."**

Rubrics are not used for all assessments. They score performance and products.

1. Present:
   - **To construct a rubric, we need to consider three factors called *Dimensions*, *Indicators*, and *Rating Scale*.**
   - ***Dimensions*, sometimes referred to as criteria, encompass the knowledge, skills, and understanding to be assessed.**
   - ***Indicators* specify the evidence used to judge the degree to which the dimension is mastered.**
   - ***Rating Scales* discriminate among the various levels of performance.**

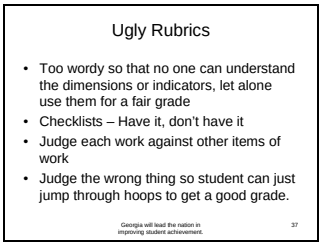
Slide

2. Present:
   - **Let's look at a template for a basic rubric design.**
3. Show slide.



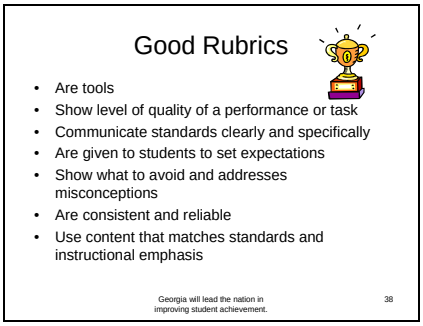
Slide

4. Present:
   - **There are rubrics that have problems with clarity and format.**
   - **Use caution with descriptors and criteria that contain too many words. Break them down into different areas of scoring.**
   - **Checklists are not rubrics. They determine if something is there or isn't there.**
   - **Rubrics declare the standard of "how good is good enough" before the work is scored. You may have only a few or no top scores if the work does not exemplify the criteria stated. The work is judged against the criteria, not against other pieces of work.**
   - **Pay attention to what you are assessing. Don't score the work on criteria that doesn't match the evidence needed for understanding.**
   - **Set clear expectations of work with a checklist for things such as name on paper, legibility, turned in on time, etc.**



Slide 7. Present:

- **Good rubrics have similarities.**
- **Rubrics are tools and have a place in assessing performance and projects. They are not the tool for all assessments.**
- **They show the level of performance against a level of criteria.**
- **Students receive the rubric when the task is given to them so they know the expectations for scoring.**
- **Good rubrics have criteria listing what to avoid.**
- **Rubrics should be consistent and reliable and scoring should be as objective as possible.**
- **The content judged matches the standards and instructional emphasis of the task.**



Transition:

- **While there's no single correct way of constructing a rubric, keep in mind that the goal is to design rubrics that communicate to students, teachers, and parents, meaningful information concerning the extent to which a student's product or performance shows evidence of meeting the Georgia Performance Standards.**
- **The web resources listed in this module include several sites devoted to rubric construction and grading with rubrics.**

We still need to discuss, however, the roles of assessment and accountability.

What is a Rubric? (And why would I use one?)

Performance tasks do not have a single correct answer. There are a variety of ways to successfully complete them. How will I know what they know? Rubrics can promote learning by offering clear performance targets to students for agreed-upon standards.

A rubric is just a tool. It is not a checklist. Rubrics show the level of quality of a performance or task. Checklists answer yes or no. Both a checklist and a rubric can guide instruction and determine levels of performance. They answer "how good is good enough."

Rubrics communicate standards. Students should get the rubric or help develop the scoring rubric when they get the assessment task so they understand the level of quality expected of them.

There are good rubrics, and there are ugly rubrics. Rubrics can become so wordy that no one can understand the dimensions or indicators, let alone use them for a fair justification of a grade. The dimensions should be clear and specific and free of extraneous factors.

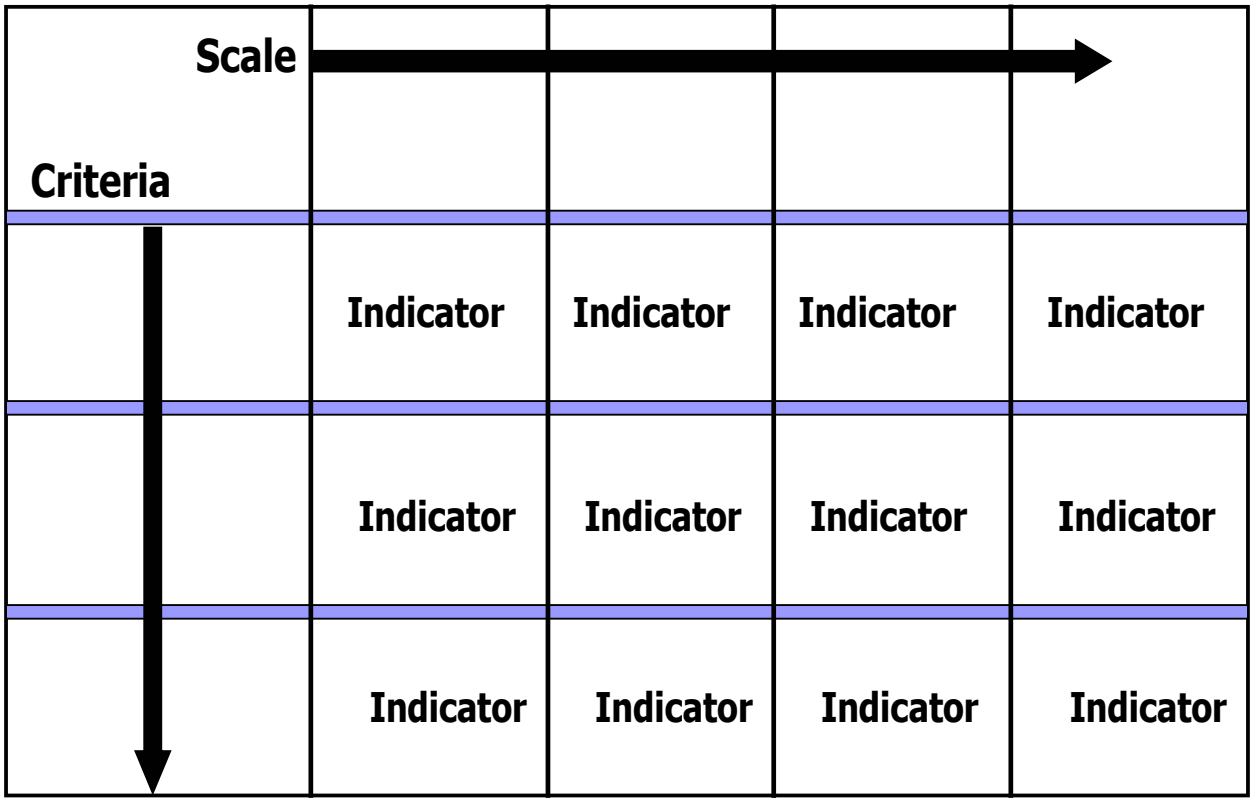
A rubric does not put student work into stacks of good, okay, poor. Each item of work is judged against the criteria, not against other items of work.

Rubrics can judge the wrong things so that a student can achieve a high level of quality by "jumping through hoops" of the rubric, but not achieving the content knowledge.

Rubrics require more time to develop and require a shift in teaching practices. They require new methods of aggregating and reporting data. A big question is, "How do I turn this into a grade for my grade book?" Without a practical understanding of the rubric grading tool, a teacher will not use one consistently.

Standards and levels can be noted with descriptive words, numbers, or even pictures. The more levels you have, the more you may be "splitting hairs." The scoring criteria should rely on descriptive language, not evaluative such as "excellent" or "fair" or rely too much on quantitative terms. Quantity is not always quality.

Basic Rubric Template



Sample Behavior Rubric adapted from Kagan, Spencer. Cooperative Learning, 1990
Behavior is not part of a content standard. Do not grade behaviors when assessing and evaluating academic knowledge and understanding.

Name Date of Observation Activity/Project

	1	2	3	4
Engagement of Learner (Participation)	Refused/did not join in task	Watched others work on task	Worked on task part of the time	Stayed on task until completion
Cooperation	Would not share with or listen to others (caused a disturbance)	Did not participate	Shared/listened part of the time	Listened and shared with others
Science Knowledge	Did not show any concept of understanding	Tried but did not show correct understanding	Showed partial understanding of concept	Demonstrated an understanding of concept
Science Language	Did not use any science vocabulary	Used vocabulary incorrectly	Used some of the vocabulary correctly	Used all vocabulary correctly
Productivity	Did not accomplish goal	Barely accomplished task	Just did what he had to do	Was highly productive
Effective Use of Time	Time without purpose	Got off track frequently	Did well once ideas were clear	No wasted effort—stayed on target

COMMENTS:

Strengths:

Weaknesses

NEXT STEPS:

RUBRIC RUBRIC

	3	2	1
Format	Chart form with criteria and indicators. Rating scale (if used) adds up.	Criteria or indicators are in the chart. Points do not add up, but the chart is clear.	Chart is based on a number system without indicators. Points are given for no reason.
Wording—Defines quality	Precise and specific. Not too wordy. Objective	Too many words and indicators are general containing too much. Could be subjective.	Wording has no other purpose other than to be cute. Wording is missing or uses unclear language.
Matches goal. Measures what counts.	Checks for evidence of student understanding	Measures some evidence of understanding but contains several criteria about behavior.	Measures behavior, not evidence of understanding.
Indicators and Criteria	Shows levels of quality. Make it easy to use.	Shows levels of quality but is not easy to distinguish levels.	Levels of quality are not present. Checklist only. Negative wording.

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				

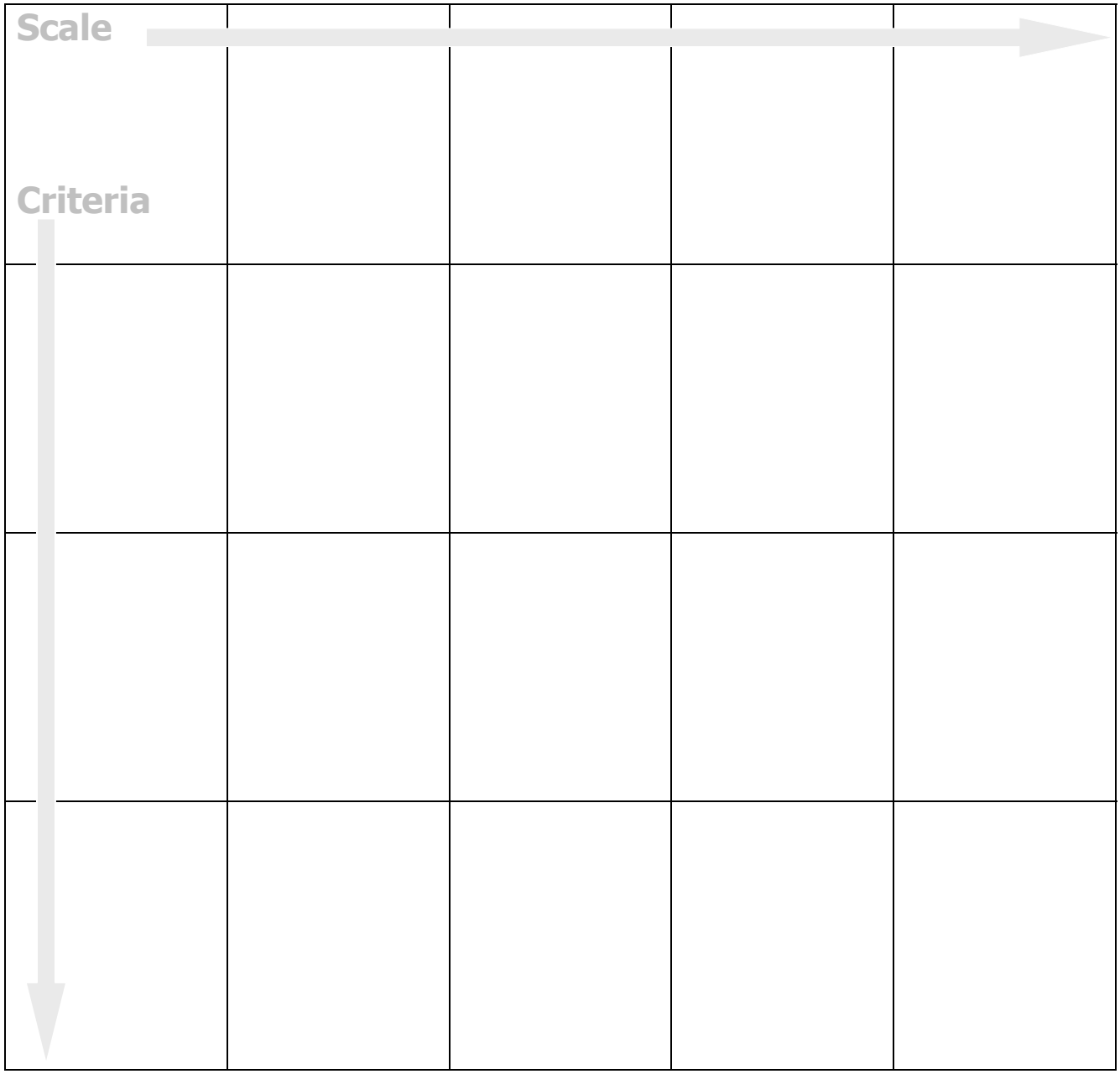
HOLISTIC

- **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.

Rubric Template



Example of a checklist to avoid the Worst Activity Syndrome (WAS)

Source: McArthur, Julia. "Taking the Good from the Bad," Science and Children, October, 1999

- ☐ Is the activity safe?
- ☐ Is the activity appropriate for the grade level? (Grade level agrees.)
- ☐ Does the activity contain hands-on experiences?
- ☐ Does the activity encourage discovery, exploration, and problem solving?
- ☐ Are students engaged in science?
- ☐ Does the activity provide extensions?
- ☐ Does the activity provide opportunities for group and individual learning?
- ☐ Is the activity challenging?
- ☐ Is a scientific connection present and is necessary background information provided?
- ☐ Is the activity relevant to the child's world? Is it child centered?
- ☐ Is the activity "do-able"?
- ☐ Are the materials readily available?
- ☐ Is the activity developmentally appropriate?
- ☐ Are students offered choices?
- ☐ Is it possible to integrate the activity into other content areas?
- ☐ Are the directions clear?

Accountability: Testing

Overview

In this section, participants will get information about the Georgia Testing Program.

Objective

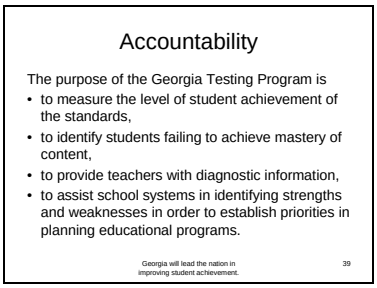
- Understand the purpose of the Georgia Testing Program and the resources available.

Materials

- Overhead projector or computer and LCD projector
- Transparencies or PowerPoint presentation

Accountability: Testing

Slide 1. Show slide.



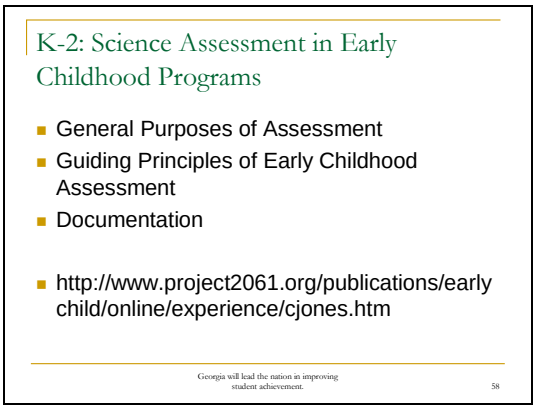
2. Present:

- **"The purpose of the Georgia Testing Program is to measure the level of student achievement of the Quality Core Curriculum (QCC) standards (and according to the implementation phase-in plan, the Georgia Performance Standards).**
- **to identify students failing to achieve mastery of content,**
- **to provide teachers with diagnostic information, and**
- **to assist school systems in identifying strengths and weaknesses in order to establish priorities in planning educational programs.**
- **In order to fulfill the purpose and maintain the integrity of the statewide testing program, test security must be established. Occurrences that violate test security risk damage to test integrity and could result in the invalidation of a system's test scores."**

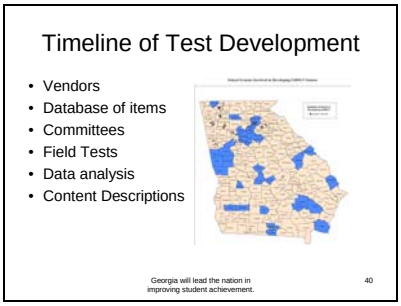
You may wish to substitute this handout and slide for K-2 and continue with the testing information for eighth grade.

Slide
Handout

3. **Grades Kindergarten, First, and Second are not assessed in science. They are assessed in Reading and Math. Assessment in the classroom takes precedence over the standardized form of testing.**
4. Show slide and refer to handout, "Dialogue on Early Childhood Science, Mathematics, and Technology Education."



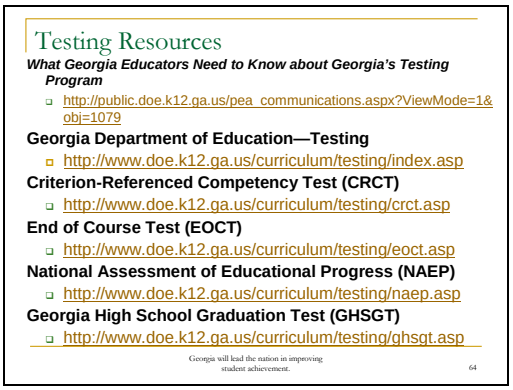
Slide 5. Show slide.



6. Present:

- **Each test is developed under contract by a national vendor. Committees of teachers from all over Georgia work with the database of items. Some committees screen items. Other committees approve/reject items. Additional committees review the items for alignment.**
- **The map of Georgia is color-keyed. The counties in blue had teacher representatives on the committee for the blueprint for the Georgia High School Graduation Test.**
- **Items approved by all stages of the process are then used as field test items on tests to check for statistical validity before becoming actual items for scoring on future assessments.**
- **The middle grades Criterion-Referenced Competency Test (CRCT) will contain field test items for future tests.**
- **There will be field test items included on several forms of the same test.**
- **Have students write their names on the front of the testing booklet as well as the scoring sheet. Make sure teachers know to match names on the scoring sheets to the testing booklets so that students are scored according to the correct form.**

Slide 7. Show slide.



8. Present:

- **There are several testing resources provided on the Georgia State Department website under Student Testing.**
- **Teachers received a copy of the newsletter, "What Every Georgia Educator Needs To Know about Georgia's Testing Program." This explained the process of standardized test development at a state level.**

What Georgia Educators Need to Know about Georgia's Testing Program

- http://public.doe.k12.ga.us/pea_communications.aspx?ViewMode=1&obj=1079

Putting It All Together

Overview In this section, we will apply all the knowledge and skills acquired in Day 2 of training to the design of an assessment plan.

Objective

- Design a balanced assessment plan

Activities

- Designing an Assessment Plan: Small Group Work
- Follow-Up Assignment

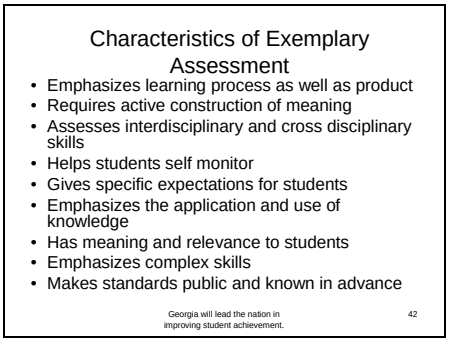
Materials

- Overhead projector or computer and LCD projector
- Transparencies or PowerPoint presentation

Designing an Assessment Plan: Small Group Work

1. Present**:**
   - **As you work on your assessment plans here and in your local systems, keep in mind the characteristics of exemplary assessment.**

Slide 2. Show slide.

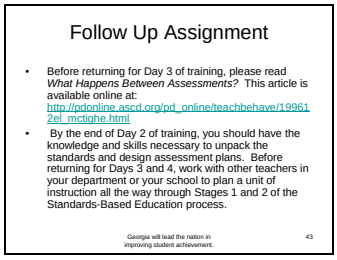


3. Present: **We will spend whatever time we have remaining today working on an assessment plan. Between now and Days 3 and 4 of training, work on the follow-up assignments and continue collaborating within your departments and systems on Stages 1 and 2 of the Standards-Based Education process.**

4. As participants work in small groups walk around, observe, and provide feedback.

Slide **Follow-Up Assignment**

Show slide.



1. Before returning for Day 3 of training, please read *What Happens Between Assessments?* This article is available online at: http://pdonline.ascd.org/pd_online/teachbehave/199612el_mctighe.html

2. By the end of Day 2 of training, teachers should have the knowledge and skills necessary to unpack the standards and design assessment plans. Before returning for Days 3 and 4, work with other teachers in your department or your school to plan a unit of instruction all the way through Stages 1 and 2 of the Standards-Based Education process.

Appendix

A Glossary of Assessment Terms

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.

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

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.).

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

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).

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.

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).

Authentic assessment: performance-based assessment that requires students to demonstrate their ability to perform in situations and settings that parallel "authentic," real-world professionals (e.g., comparing and contrasting primary source documents in history to draw conclusions about an historical event).

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.

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

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.

A. 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.

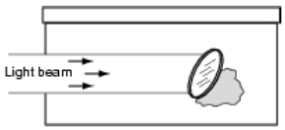
B. Key Points

Familiar assessment formats consisting of simple, content-focused items that

- Assess for factual information, concepts and discrete skill
- Use multiple-choice, true-false, matching, and fill-in-the-blank formats
- Have a single, best answer
- May be easily scored using an answer key or machine
- Items are typically not known in advance

C. Example including Standard and element—S8P4b

Melissa knew that if she shined a light beam directly into a flat mirror, the reflection would bounce straight back at her. She wanted to investigate what would happen if she shined a light into the same mirror at an angle. To investigate this, she built a light box as shown below.



What is the purpose of her experiment?

A. to see if a mirror does reflect light beams
B. to compare the beam hitting the mirror and the beam reflected
C. to compare the widths of the two light beams hitting the mirror
D. to see if the beam is absorbed or reflected by the mirror

Write an example of a Selected Response assessment item matching it to a **Standard** and **Element**:

D. Advantages of using this format

E. Limitations of using this format

A. 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. 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.

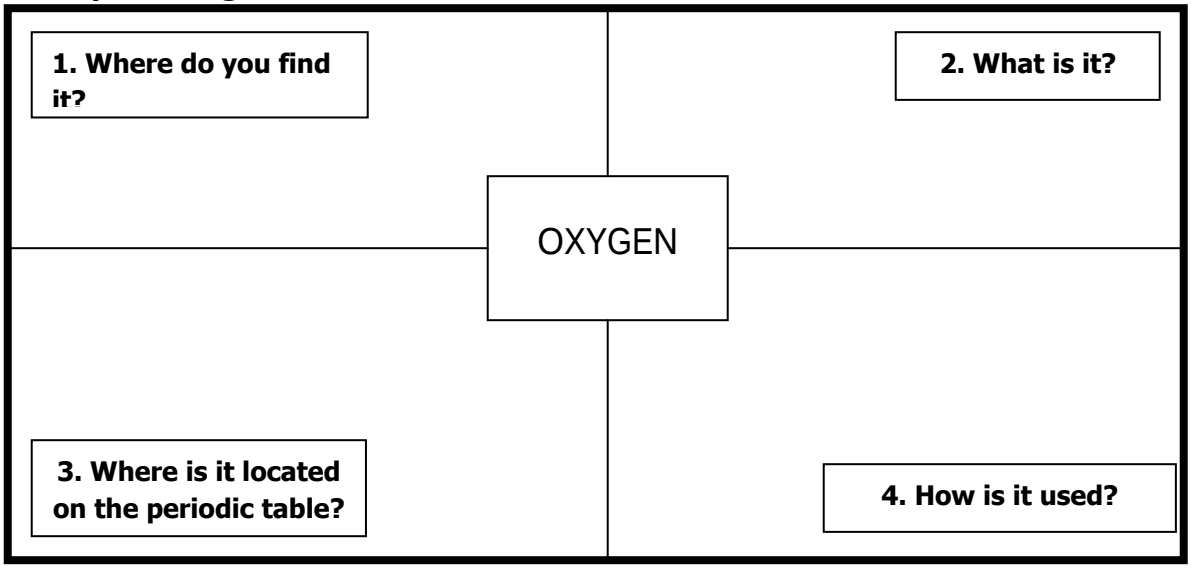
Another example of constructed response is an academic prompt with open-ended questions or problems that require that the student think critically, not just recall knowledge, and to prepare a specific response, product or performance such as an essay.

Drawings, charts, tables, and diagrams that students make also fit as constructed responses. Constructed response formats require the student to construct the response with a prompt.

B. Key Points

- Require constructed responses to specific prompts under school and exam conditions
- Are "open," with no single best answer or strategy expected for solving them
- Often require the development of a strategy
- Involve analysis, synthesis, and evaluation
- Typically require an explanation or defense of the answer given and the methods used
- Require judgment-based scoring based on criteria and performance standards
- May or may not be secure
- Involve questions typically only asked of students in school

C. Examples using Standard and element—S8P1f



Write an example of a Selected Response assessment item matching it to a **Standard** and **Element**:

D. Advantages of using this format

E. Limitations of using this format

A. Performance Tasks

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).

B. Key Points

- The setting is real or simulated and involves the kind of constraints, background "noise, incentives, and opportunities an adult would find in a similar situation (i.e., they are authentic)
- Are based on a specific purpose that relates to the audience
- Allow students greater opportunity to personalize the task
- Are not secure: the task, evaluative criteria, and performance standards are known in advance and guide student work

C. Examples using Standard and element—S8P5c

You are an electrician reporting to the CEO of a large firm. You must show him the advantages and disadvantages of how to wire the new product. Use two batteries, two bulbs, and copper wires. Connect them in various ways demonstrating how to light both bulbs. Sketch each as you connect them. Observe the brightness of the bulbs. Rank your sketches in order of bright to dim. Are series circuits or parallel circuits brighter? What are the advantages and disadvantages of each method?

Write an example of a Selected Response assessment item matching it to a **Standard** and **Element**:

D. Advantages of using this format

E. Limitations of using this format

A. Informal and 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.

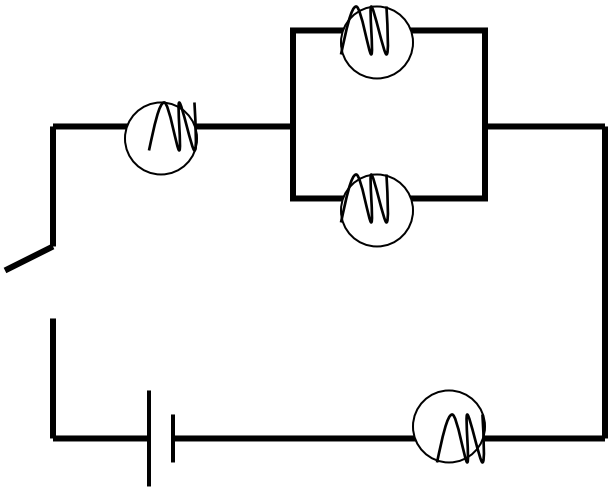
Self-assessment represents another type of informal assessment. Students or teachers might use checklists to assess informally or to self-assess. Students self-assess as they become constructive critics of their own work or assess their growth or progress toward their learning goals. Assessing one's 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.

B. Key Points

- On-going assessments as part of the instructional process
- Teacher questioning
- Observations
- Examining student work
- Think aloud
- Reflective journals
- Provide feedback to the teacher and the student
- Are not typically scored or graded

C. Examples using Standard and element—S8P5c

Think aloud process: Place a circuit diagram transparency on the overhead. Have students predict whether all four light bulbs will shine with the same brightness. Allow students three minutes to process (or think) about their answer before sharing with the group.



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C. Example including Standard and element—S1E1a

Match the word with the picture.

Sunny
Rainy
Cloudy

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E. Limitations of using this format

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C. Examples using Standard and element: SKE1b

1. Draw at least two things you see in the sky during the day.
2. Draw at least two things you see in the sky at night.

Write an example of a Selected Response assessment item matching it to a **Standard** and **Element**:

D. Advantages of using this format

E. Limitations of using this format

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C. Examples using Standard and element—SKL1a

You are making a collection of living and nonliving things to display in the media center. Listed below are examples of living (which includes once-living) and nonliving things. Sort these for the collections. Be ready to tell your thinking.

Tree	Rock	Fire	Boy	Wind
Rabbit	Cloud	Feather	Grass	Seed
Egg	Sun	Mushroom	Potato	Leaf
Butterfly	River	Flower	Ant	Water

Write an example of a Selected Response assessment item matching it to a **Standard** and **Element**:

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- Reflective journals
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C. Examples using Standard and element—S2L1a

"What have you noticed lately about our caterpillars?"
SP1b: "Where have you seen shadows?"

Here are six science journal prompts:

- Today I discovered that…. I also learned that…. The most interesting part of the experiment was…. I am still wondering ….
- Today I observed…. I predict that…. I also measured…. I concluded that….
- Today I learned about (vocabulary word). I discovered that (vocabulary word) ….
- Today I observed (topic). I now know what happened to …. I am still unsure about ….
- Today I conducted a science activity about (topic). I predicted that … I think that…. Another question that I have is….
- Today I experimented with…. I guessed that…. I figured out…. My next experiment will be about ….

Write an example of a Selected Response assessment item matching it to a **Standard** and **Element**:

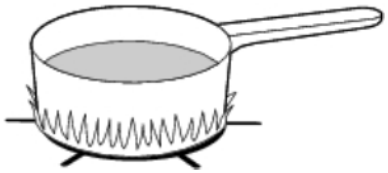
D. Advantages of using this format

E. Limitations of using this format

Eighth Grade: These are the Standards and elements that are aligned to the assessment items. You can paste these with the items so teachers can simulate item review.

1) **S8P1: Nature of Matter** d. Distinguish between physical and chemical properties of matter as physical or chemical.	2) **S8P1: Nature of Matter** f. Recognize that there are more than 100 elements and some have similar properties as shown on the Periodic Table of Elements.	3) **S8P4: Wave nature of sound and electromagnetic radiation** b. Describe how the behavior of light waves is manipulated causing reflection, refraction, diffraction, and absorption.
4) **S8P2: Transformations of energy** c. Compare and contrast the different forms of energy and their characteristics.	5) **S8P2: Transformations of energy** d. Describe how heat can be transferred through matter by the collisions of atoms or through space. In a liquid or gas, currents will facilitate the transfer of heat.	6) **S8P1: Nature of Matter** f. Recognize that there are more than 100 elements and some have similar properties as shown on the Periodic Table of Elements.
7) **S8P3: Force, mass, and the motion of objects.** c. Demonstrate the effect of simple machines (lever, inclined plane, pulley, wedge, screw, and wheel and axle) on work.	8) **S8P1: Nature of Matter** a. Distinguish between atoms and molecules.	9) **S8P5: Gravity, electricity and magnetism** c. Investigate and explain that electric currents and magnets can exert force on each other.
10) **S8P3: Force, mass, and the motion of objects.** b. Demonstrate the effect of balanced and unbalanced forces on an object in terms of gravity, inertia, and friction	11) **S8P2:Transformations of energy** b. Explain the relationship between potential and kinetic energy.	12) **S8P1: Nature of Matter** d. Distinguish between physical and chemical properties of matter as physical or chemical.

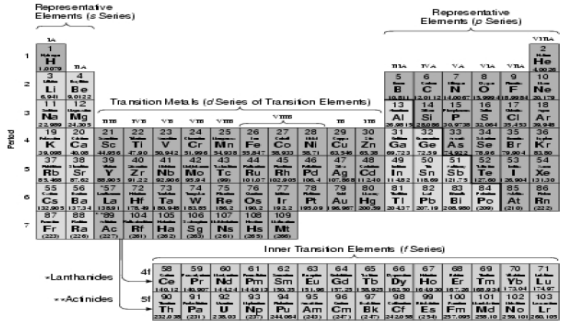
1. The picture below shows a pot containing cocoa and milk being heated.



How are heat and temperature related?

a. The temperature and heat work together, causing a chemical change.
b. An increase in temperature raises the heat of the substances.
c. Heat has no effect on the temperature, causing a physical change.
d. An increase in heat raises the temperature of the substances.

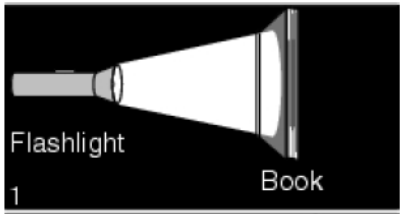
2. The symbol for the element mercury is Hg.

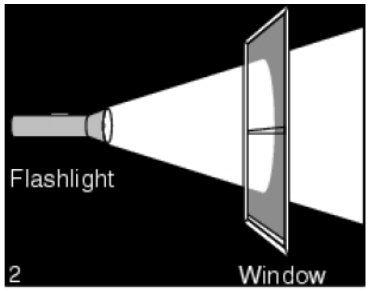


What is the approximate atomic mass of Hg?

a. 80.0
b. 197.0
c. 200.6
d. 280.6

3. Ken was conducting an investigation to see if different substances would absorb, transmit, or reflect light. He shined a flashlight at a book (diagram 1). Then he shined a flashlight through a window (diagram 2). The light did not pass through the book, but it passed through the window.

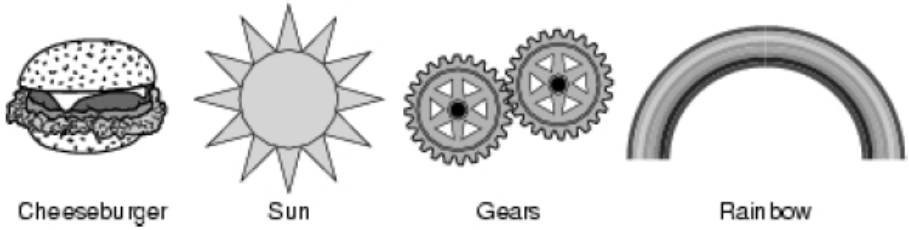




Which of these explains why?

a. The book is translucent, and the window is transparent.
b. The book is transparent, and the window is translucent.
c. The book is transparent, and the window is opaque.
d. The book is opaque, and the window is transparent.

4. Each of these substances represents a form of energy.



Identify each form of energy associated with each picture in the order represented.

a. chemical, solar, mechanical, electromagnetic
b. mechanical, solar, chemical, electromagnetic
c. chemical, electromagnetic, mechanical, solar
d. solar, chemical, mechanical, electromagnetic

5. A violinist plays a violin and makes the strings of the violin vibrate. Why can we hear the violin?

a. The strings give off electrical energy.
b. The strings give energy to each other.
c. The strings give off mechanical energy.
d. The strings give energy to air molecules.

6. There are many kinds of chemical compounds. One of them is sodium chloride, which is table salt. Which of these is the chemical formula for sodium chloride?

a. $SnCl_2$
b. NaBr
c. $SiBr_4$
d. NaCl

7. The only way the moving men could get the piano into the apartment was through the window. They wrapped strong ropes around the piano. The ropes were attached to a simple machine to help lift the piano.

Which kind of machine did the men use to lift the piano?

a. a pulley
b. a ladder
c. a lever
d. a wedge

8. Elements are made up of atoms. Atoms contain electrons, neutrons, and protons. Where are the electrons located?

a. in the nucleus
b. next to the protons
c. *outside the nucleus*
d. next to the neutrons

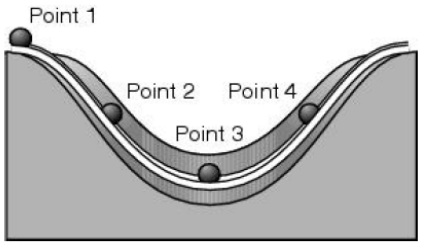
9. A nail has wire wrapped around it. When electricity is passed through the wire, the nail acts as a magnet. When the electricity is turned off, the nail is not a magnet. What can you conclude?

a. The nail is a permanent magnet.
b. The nail is a temporary magnet.
c. The wire becomes a permanent magnet.
d. The electricity becomes a temporary magnet.

10. To get into space, rockets must have huge engines and a lot of fuel to

a. Overcome the force due to gravity.
b. Avoid running out of fuel before they return.
c. Move through space very quickly.
d. Stay in orbit.

11. Cari and Elijah were playing with marbles on a track. They wondered if the marble had the same amount of kinetic and potential energy at different points on the track.



Where does the marble have the MOST potential energy?

a. Point 1
b. Point 2
c. Point 3
d. Point 4

12. A piece of gold has a volume of 10 cm^3 and a mass of 190 g. What is the density of the gold block?

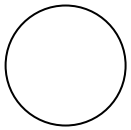
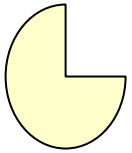
a. .05 cm^3/g
b. 10 cm^3
c. 19 g/cm^3
d. 190 g

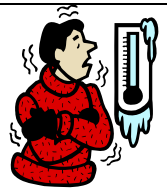
K-2 Alignment—Standards and element

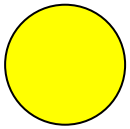
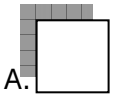
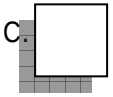
1. **S2E1. Students will investigate the position of sun and moon to show patterns throughout the year.** c. Relate the length of the day and night to the change in seasons (for example: Days are longer than the night in the summer.).	2. **S2E1. Students will investigate the position of sun and moon to show patterns throughout the year.** c. Relate the length of the day and night to the change in seasons (for example: Days are longer than the night in the summer.).	3. **S2E1. Students will investigate the position of sun and moon to show patterns throughout the year.** c. Relate the length of the day and night to the change in seasons (for example: Days are longer than the night in the summer.).
4. **S2E1. Students will investigate the position of sun and moon to show patterns throughout the year.** c. Relate the length of the day and night to the change in seasons (for example: Days are longer than the night in the summer.).	5. **S1E1. Students will observe, measure, and communicate weather data to see patterns in weather and climate.** c. Correlate weather data (temperature, precipitation, sky conditions, and weather events) to seasonal changes.	6. **S2E1. Students will investigate the position of sun and moon to show patterns throughout the year.** c. Relate the length of the day and night to the change in seasons (for example: Days are longer than the night in the summer.).
7. **S2E2. Students will investigate the position of sun and moon to show patterns throughout the year.** d. Use observations and charts to record the shape of the moon for a period of time.	8. **SKE1. Students will describe the physical attributes of rocks and soils.** a. Use senses to observe and group rocks by physical attributes such as large/small, heavy/light, smooth/rough, dark/light, etc.	9. **S2L1. Students will investigate the life cycles of different living organisms.** a. Determine the sequence of the life cycle of common animals in your area: a mammal such as a cat or dog or classroom pet, a bird such as a chicken, an amphibian such as a frog, and an insect such as a butterfly.

10. **S1P2. Students will demonstrate effects of magnets on other magnets and other objects.** a. Demonstrate how magnets attract and repel.	11. **S1E2. Students will observe, measure, and communicate weather data to see patterns in weather and climate.** c. Correlate weather data (temperature, precipitation, sky conditions, and weather events) to seasonal changes.	12. **SKE2. Students will describe time patterns (such as day to night and night to day) and objects (such as sun, moon, stars) in the day and night sky.** b. Classify objects according to those seen in the day sky and those seen in the night sky.
13. **S2E3. Students will understand that stars have different sizes, brightness, and patterns.** a. Describe the physical attributes of stars—size, brightness, and patterns.	14. **S1P1. Students will investigate light and sound.** a. Recognize sources of light. b. Explain how shadows are made.	15. **S1L1. Students will investigate the characteristics and basic needs of plants and animals.** b. Identify the basic needs of an animal. 1. Air 2. Water 3. Food 4. Shelter
16. **S1P2. Students will investigate light and sound.** c. Recognize sources of light. d. Explain how shadows are made.	17. **SKE3. Students will describe the physical attributes of rocks and soils.** a. Use senses to observe and group rocks by physical attributes such as large/small, heavy/light, smooth/rough, dark/light, etc.	18. **S1E3. Students will observe, measure, and communicate weather data to see patterns in weather and climate.** a. Identify different types of weather and the characteristics of each type.

K-2 Assessment Items:

1. Fall is the season between summer and winter. The weather becomes cool. The green leaves on the trees turn many beautiful colors. The ____ on trees turn many different colors. A. weather B. leaves C. season	2. In the fall the nights become shorter. A. True B. False	3. The season after ____ is fall. A. summer B. winter C. spring
4. Fall is the season between summer and winter. A. True B. False	5. The weather during autumn becomes warmer. A. True B. False	6. The moon gives us four seasons. A. TrueB. False
7. What shape does the Moon never look like? A.  B.  C. 	8. What color are rocks? A. Most are black. B. Most are brown. C. Most have many colors.	9. A caterpillar grows up to be a A. grasshopper B. butterfly C. earthworm

10. If you move the ends of the magnet closer to each other, what would happen?   A. Nothing B. The magnets would pull toward each other. C. The magnets would push away from each other.	11.  What season is it? A. Winter B. Spring C. Fall	12. If you look up in the sky in the daytime, what would you NOT see? A. Stars B. Sun C. Moon

13. When you look up in the night sky and see stars, what do you see? A. Points of light scattered around the sky B. Star shapes in several patterns. C. Lines of light that look like animals.	14. What would be a good day to see shadows? A. Rainy B. Cloudy C. Sunny	15. Greg got a puppy as a pet. What will the puppy need to be healthy? A. water, food, shelter B. toys, chew bones, collar C. bed, bath, vitamins
16. Choose the one that would most closely match the shadow you would see. Light  A.  B.  C. 	17. When yo  you can t A. if it is dull or shiny B. if it is heavy or light C. if it is round or square	18. Macy looked up and saw lots of dark clouds and felt warm wind blowing hard. What weather is coming? A. Rainy B. Snowy C. Sunny