



*Training for the New Georgia Performance Standards
Day 2: Unpacking Standards for Unit Development*

Content Facilitator's Guide

Table of Contents

Table of Contents	2
Overview	3
Module Rationale.....	3
Module Description.....	3
Module Goal.....	4
Module Two Objectives.....	4
Module Sequence	5
Leader Roles and Responsibilities	5
Module Preparation	5
Module Materials for Day Two of Training	8
Agenda.....	9
Introduction	10
Overview of the Module: Presentation (2 minutes)	12
Review of Day One Content (25 minutes)	14
Discussion of Day One Follow Up Assignment (13 minutes)	16
Large Group Demonstration.....	17
Identifying Big Ideas (10 minutes)	18
Transforming Big Ideas into Enduring Understandings (20 minutes)	21
Developing Essential Questions (25 minutes)	25
Identifying Skills and Knowledge (20 minutes)	28
Summary (15 minutes)	30
Unpacking a Single Standard	31
Small Group Activity (45 minutes)	32
Large Group Discussion (45 minutes)	33
Unpacking Multiple Standards	34
Small Group Activity (40 minutes)	35
Large Group Discussion (20 minutes)	36
Summary and Follow Up Assignments.....	37
Action Planning (15 minutes)	38
Follow Up Assignment (5 minutes)	38
Reflections on the Day	40

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. For 2004-2005, these include:

1. K-3 ELA
2. 4-8 ELA
3. 9-12 ELA
4. 6 Mathematics
5. 6-7 Science
6. 9-12 Life Science
7. 9-12 Physical Science

The second purpose of day one of training was to introduce the standards-based education approach and to assist teachers in using this “backward design” approach to develop assessments and instruction in support of the new curriculum standards. During day one of the training, the emphasis was on the model itself—what it is, why it is important, and how it can be used so that the new GPS have a profound impact at the classroom level.

The purpose of day two of the training is to delve deeper into stage 1 of the unit design process, helping participants to gain proficiency in unpacking standards.

One of the most important principles of professional development is that people seldom gain expertise from a “one shot” workshop. Instead, we need multiple opportunities for practice and feedback with a variety of examples and in a collaborative environment. This is why day two is so essential, even though limited new content is presented. In day one, participants were introduced to unit design and the Georgia Performance Standards, but they had very limited time to apply their new knowledge. In day two, they have multiple opportunities to unpack standards, resulting in deeper knowledge of both the standards and the processes, sharing of ideas, and greater fluency.

Module Description

This module includes preparation (an assignment to unpack a standard 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 quickly, and the follow up serves as a bridge to day three of training.

Module Goal

Demonstrate a deep understanding of the new Georgia Performance Standards and the standards-based education approach, through thoughtful curriculum planning, development of formative and summative assessments, and the design of instruction matched to the standards and research-based best practices. This shall be measured by student performance on progress monitoring and standardized criterion-referenced tests.

Key words from the goal:

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

Note that the goal will not be reached by any single day of training. It will take preparation, eight days of classroom instruction, and follow up to master this goal. Various days of training will deal with different components of the goal, such as curriculum planning, assessment, and instruction.

Module Two Objectives

By the end of day two of training, participants will be able to:

1. Define and describe the rationale for identifying big ideas, enduring understandings, essential questions, and skills and knowledge for a standard.
2. Develop, for a given standard, the big ideas, enduring understandings, essential questions, and skills and knowledge (unpack the standard).
3. Unpack multiple standards to create cohesive units of study.

- Module Sequence** Prior Preparation—Participants (2 hours)
- Unpack an assigned standard (assigned at end of day one)
- Introduction
- Overview of the Module
 - Review of Day One Content
 - Discussion of Day One Follow Up Assignment
- Large Group Demonstration
- Identifying Big Ideas
 - Transforming Big Ideas into Enduring Understandings
 - Developing Essential Questions
 - Identifying Skills and Knowledge
- Unpacking a Single Standard
- Small Group Activity
 - Large Group Discussion
- Balanced Assessment
- Introduction to Balanced Assessment
- Summary and Follow Up Work
- Action Planning
 - Follow-up Assignment
 - Summary
- Leader Roles and Responsibilities** This workshop will require of you a different set of skills than most other instructor-led training programs. There is less presentation and lecture; instead, you will have to use demonstration, questioning, and facilitation skills. This guide includes the basic questions you should ask the participants, but throughout the workshop, you will have to add additional probing questions to get the participants to question their assumptions and continue to refine their understanding of what standards-based teaching is and how it can make a difference.
- Module Preparation** Preparation is critical to a successful training session. Listed below are some tips that will help you prepare for your session.
1. Participate in a Train-the-Trainer session.
 2. Gather all the required articles, texts, and other materials listed in the “Module Materials” list on page 8.

3. Ensure that school administrators understand the preparation and follow up requirements of the course and that the GPS curriculum changes have evolved from a very open public process that included public input from responses sought by the DOE. Current GPS were developed taking into consideration all input from all respondents.
4. Ensure the participants who are enrolled in your training sessions have the preparation materials (also known as the day one follow up assignment) and realize it is a requisite to attending the training. The best way to ensure compliance is to have multiple contacts with the participants and their administrators. During these contacts, whether by mail, phone, or e-mail (preferably a combination), ensure that participants understand the assignment and are committed to arriving prepared. Anything you can do to establish a relationship with participants will help reduce stress and ensure a meaningful and successful training experience. If the participants start the training unprepared, they may never catch up.
5. Identify a date, times, and location for this training. This may vary from one setting to the next, as you work with local schools and districts to arrange a customized delivery schedule. Prepare a handout with this information and photocopy it for the participants. You can use the agenda on page 9 to guide you.
6. Determine how course follow-up will be handled. It is very important that professional development be an on-going, job-embedded process, with the training sessions being part of a cohesive plan to help teachers increase skills and knowledge. Here are some questions you must answer before conducting the workshop:
 - Will there be any follow-up conference calls or a list serve to discuss progress and provide an information-sharing and networking forum? If so, who will lead them? When? How?
 - How will we ensure that participants complete the follow-up assignments? Who will follow up with reminders? How will we make sure this effort is supported locally?
 - Will there be grade level meetings? Department meetings?

7. Gather information about your training site:
 - Mailing address, contact person with phone number (Participant materials need to be shipped to a specific location and someone needs to receive the materials.)
 - Size of room and space to work in small groups
 - Audio visual equipment
 - Projection system
 - Flipcharts with pads
 - Table and chairs: One table for leader (in front), one for materials, enough tables for the number of participants to sit in groups of about four
 - Wall space for your posters and flipcharts
 - Determine plans and payment for refreshments as desired/needed.
 - Set up your training room the night before the training. If you have never seen the room, this is especially important.
 - Test all equipment and make sure you have all of your materials organized for efficient distribution.

8. Go through the entire Content Facilitator's Guide.
 - Prepare an agenda. (You may also want to mark key times with Post-Its put in your guide.)
 - Use margins to note key points you plan to emphasize.
 - Walk through all activities.
 - Prepare any flipcharts.
 - Make sure your materials are organized according to when you will need them.
 - Make any adjustments that are needed to the activities, room layout, audio-visuals, etc., based on the number of participants.

**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)
- Participant's Guide (one per participant and one per leader)

Other materials needed:

- Name tags
- Easel chart paper and stand
- Flipchart paper and stand
- Masking tape to post flipcharts
- Note pads and pens for participants
- Highlighter markers, one per participant
- Flipchart markers in a variety of colors (the ideal would be to give each participant a different color so that one person's ideas could be tracked across easel charts, but if that is impractical, then just use as many colors as possible)

Equipment:

- Overhead projector or computer and LCD projector
- Videotape player

Agenda

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

Introduction..... 45 minutes

- Overview of the Module
- Review of Day One Content
- Discussion of Day One Follow Up Assignment

Large Group Demonstration1 hour, 30 minutes

- Identifying Big Ideas
- Transforming Big Ideas into Enduring Understandings
- Developing Essential Questions
- Identifying Skills and Knowledge

Unpacking a Single Standard1 hour, 30 minutes

- Small Group Activity
- Large Group Discussion

Unpacking Multiple Standards1 hour, 45 minutes

- Small Group Activity
- Large Group Discussion

Summary and Follow Up Work 30 minutes

- Action Planning
- Follow-up Assignment
- Summary

Introduction

- Overview** After a brief presentation of the day's agenda and objectives, participants review day one redelivery and discuss successes and concerns. Finally, they create a graphic organizer representing the Georgia Performance Standards and unit design based on their assignment.
- Activities**
- Overview of the Module
 - Review of Day One Content
 - Discussion of Day One Follow Up Assignment
- Materials**
- Overhead projector or computer and LCD projector
 - Transparencies or PowerPoint presentation
 - Participant's Guide
 - Four easel chart pages, each with one of the following titles: Big Ideas, Enduring Understanding, Essential Questions, and Skills and Knowledge (these should be posted in easily accessible locations around the room)
 - Flipchart markers in a variety of colors (the ideal would be to give each participant a different color so that one person's ideas could be tracked across easel charts, but if that is impractical, then just use as many colors as possible)
 - Extra easel chart pages to supplement above
 - Tape to post easel charts
 - Scratch paper

Slide 1

1. Show slide 1, which is the title slide.



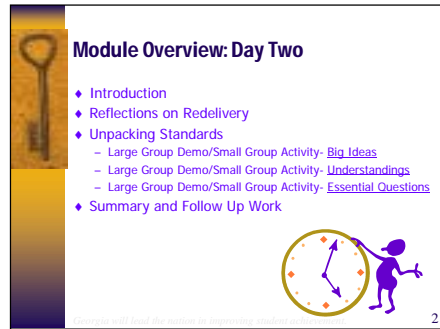
2. Present:

- **One of the most important principles of professional development is that people seldom gain expertise from a “one shot” workshop. Instead, we need multiple opportunities for practice and feedback with a variety of examples and in a collaborative environment.**
- **In day one, you were introduced to unit design and the new standards, but you had very limited time to apply this new knowledge. Today, you will have multiple opportunities to unpack standards, resulting in deeper knowledge of both the standards and the processes, sharing of ideas, and greater fluency.**
- **There will be limited “new content” presented today; we will review the content from day one. However, even though we might not “cover” much new material, you will grow in skill, fluency, and confidence as you work with your colleagues to unpack additional standards. This will serve you well as you work toward implementing the GPS.**

Overview of the Module: Presentation (2 minutes)

Slide 2

1. Show slide 2, *Module Overview: Day Two*.



2. Present:

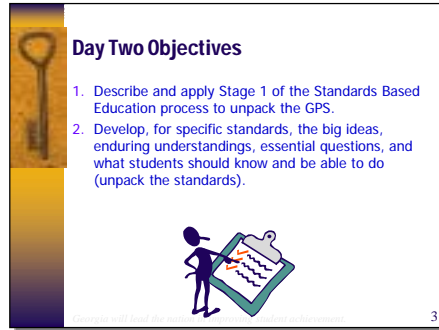
- **The introduction will include a review of day one information and the follow up assignment.**
- **The next three sections are repeated practice opportunities, first working together as a large group and then working in small groups, so that you can unpack multiple standards. In the last of these activities, we will work at unpacking multiple standards that would be involved in a single unit of study.**
- **In the summary, you will create an action plan for unpacking the remainder of the standards, you will get an assignment to complete prior to the next day of training, and you will complete an evaluation of today's training.**

PG-4 and 5

3. Present: **The agenda is presented on page 4 of your Participant's Guide. The goal and today's objectives are listed on page 5 of your Participant's Guide.**

Slide 3

4. Show slide 3, *Day Two Objectives*.



5. Explain:

- **There are only two objectives for today's training, and they are all related.**
- **We will practice, reflect, collaborate, and receive feedback on each of these objectives.**

6. Present: **Because we have only one day together at this time, it might be helpful to talk about some ways that we can all work together.**

Slide 4

7. Show slide 4, *Group Norms and Housekeeping*. Ask participants if they would like to add to or change the group norms. Record any needed changes on a flipchart. Then, ask participants to agree to these norms.

Group Norms and Housekeeping

Group Norms:

- ♦ Participate and share
- ♦ Ask questions
- ♦ Work toward solutions
- ♦ Honor confidentiality
- ♦ Meet commitments or let others know if you are struggling to do so

Housekeeping:

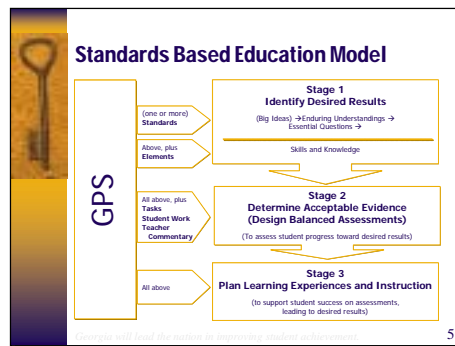
- ♦ Phone calls
- ♦ Rest rooms
- ♦ Breaks
- ♦ Lunch

8. Go over housekeeping rules (phone, breaks, etc.) as appropriate to your schedule and location.
9. Ask: **What questions can I answer about today's agenda before we continue?**

Review of Day One Content

Slide 5

1. Present: **Let's start with a review of content from day one. We'll first refresh our memory of key terms/concepts, discuss the redelivery, and then I'll ask you to construct a graphic organizer that ties all these concepts together.**



Slide 6
Easel chart:
Questions and
Concerns
Marker

1. Give participants time to reflect on the redelivery successes and concerns. Brainstorm a list of items to review/discuss on Day Two that need additional emphasis.

Reflections on Redelivery

- ◆ The Goal for Day One was to become familiar with the Georgia Performance Standards.
- ◆ Discuss redelivery successes and concerns.
- ◆ Brainstorm a list of items to review/discuss on Day Two that need additional emphasis.

6

Trainer's Note: Post the questions/concerns and let participants know that you will address all of them by the end of the day. Throughout the days training, refer to this chart to clear up questions and concerns as appropriate to the topic being discussed.

Slide 7
Paper

2. Give small groups of participants a sheet of paper and list of key terms/concepts. Ask them to create a graphic representation of the unit design process and GPS that they can use in their redelivery. Share their ideas.

Creating a Graphic Representation

- ◆ Choose a graphic organizer to represent the GPS for your redelivery.
- ◆ Use some of the terms from this list or others of your choosing.

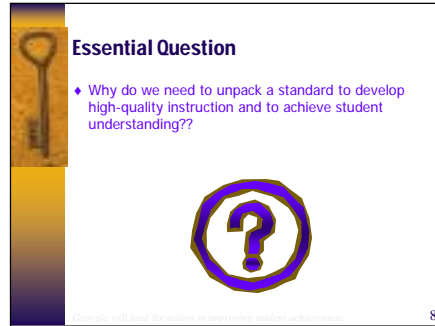
Module I <ul style="list-style-type: none"> ◆ Content Standards ◆ Elements ◆ Performance Standards ◆ Student Work ◆ Tasks ◆ Teacher Commentary 	Module II <ul style="list-style-type: none"> ◆ Big Ideas ◆ Enduring Understandings ◆ Essential Questions ◆ Skills and Knowledge Statements ◆ Stage 1 in Unit Design
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7

Discussion of Day One Follow Up Assignment

Slide 8

1. Show slide 8, *Essential Questions*.



2. Ask participants to work in small groups to answer the question on the slide.
3. Allow a few minutes. Tell participants when two minutes remain.
4. Ask volunteers to share key similarities and differences.
5. Ask each group to report out their questions/concerns. Write these on the easel chart.

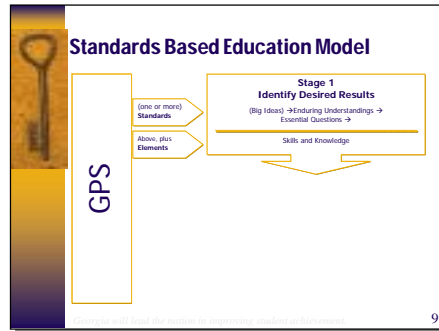
Large Group Demonstration

- Overview** In this section, the trainer leads participants through the process of unpacking a standard, taking time to make sure that participants understand how and why to complete each step.
- Objective**
- Define and describe the rationale for identifying big ideas, enduring understandings, essential questions, and skills and knowledge for a standard.
- Activities**
- Identifying Big Ideas
 - Transforming Big Ideas into Enduring Understandings
 - Developing Essential Questions
 - Identifying Skills and Knowledge
 - Summary
- Materials**
- Copy of standards
 - Chart paper
 - Highlighter markers
 - Participant's Guide
 - Overhead projector or computer and LCD projector
 - Transparencies or PowerPoint presentation
 - Easel chart

Identifying Big Ideas

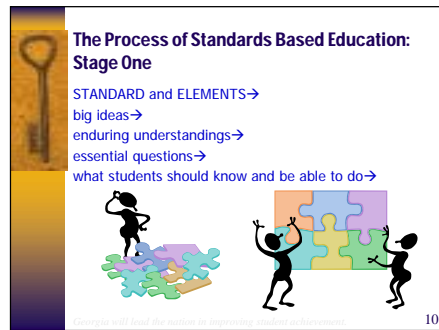
Slide 9

1. Show slide 9, *Stage One of Standards Based Education Model*. Present: **We are going to continue to work with Stage One to unpack the standards we have done as an assignment.**



Slide 10

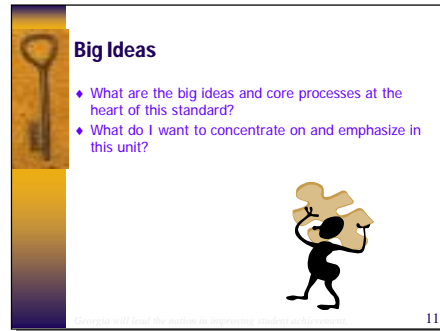
2. Show slide 10, *The Process of Unit Design*. Continue: **Together, we will take one standard and completely unpack it, helping you get a deeper understanding of how each of the elements in this process (big ideas, enduring understandings, essential questions, and skills and knowledge) will help you design better instruction—that will help students master the standards.**



3. Present: **The first thing we will do is identify big ideas.**
4. Ask: **Why are “big ideas” not included in the design template, but are a necessary step in unit design?** (They are just a way to get to enduring understandings, which are on the template; big ideas are an intermediate step.)

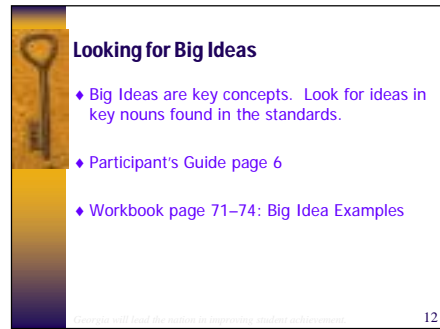
Slide 11

5. Show slide 11, *Big Ideas*. Present: **When you think about big ideas, the question you should ask yourself is, "What are the big ideas and core processes at the heart of this standard? What do I want to concentrate on and emphasize in this unit?"**

PG-6
Highlighter markers

6. Show slide 12, *Looking for Big Ideas.* Refer participants to page 6 in the Participant's Guide and pages 71-74 on Big Idea Examples.

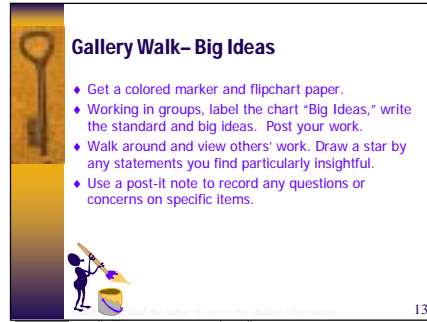
Slide 12



7. Ask participants to read the page in the Participant's Guide silently and then read the material in the workbook.
8. Allow a few minutes for reading and highlighting.

Blank chart paper
Slide 13

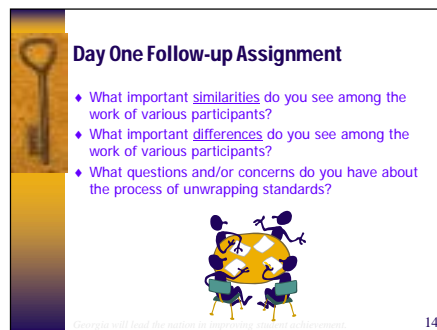
9. Ask participants to work in small groups who chose similar standards. **What do you think we should identify as the big ideas for the standard you chose for homework?**



10. Show slide 13, *Gallery Walk—Big Ideas*. Have them label their chart “Big Ideas,” write the standard and big ideas. Have them post their charts.
11. Conduct a gallery walk so they view others’ work. Have them draw a star by any statements that they find particularly insightful.
12. Ask: **Looking at the big ideas that you identified, are they concepts or processes?**

Slide 14

13. Show slide 14, *Day One Follow-up Assignment*. Discuss the questions.



Easel chart with
standard

14. Discuss: **Do you think it is better to go through this activity as a group or to do it individually (not necessarily here in training, but back at school)?**

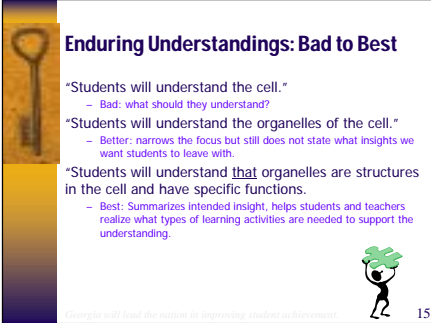
- PG-Learning Journal 15. Refer participants to the learning journal pages at the back of their Participant's Guides and ask them to write down reflections on what they have learned about identifying big ideas.

Transforming Big Ideas into Enduring Understandings

1. Present: **The next step in the process is to transform the big ideas into “enduring understandings.” This can be tricky. Poorly defined enduring understandings are not much better than having none at all. Let’s look at an example.**

Slide 15

2. Show slide 15, *Enduring Understandings: Bad to Best*. Emphasize:



Enduring Understandings: Bad to Best

“Students will understand the cell.”
 – Bad: what should they understand?

“Students will understand the organelles of the cell.”
 – Better: narrows the focus but still does not state what insights we want students to leave with.

“Students will understand that organelles are structures in the cell and have specific functions.”
 – Best: Summarizes intended insight, helps students and teachers realize what types of learning activities are needed to support the understanding.

15

- **Vague statements, such as the first one, do not clarify what the students should understand about the topic.**
- **The middle statement is better in that it narrows the focus of the topic, but it still does not specify exactly what insights into cause and effect the students need for understanding.**
- **The last proposition is best because it is an important generalization and it provides a focus to the study—a sharper target for teaching and assessing.**

3. Ask: **Why are “enduring understandings” part of the unit design process?**
- It is important for students know *why* facts are important; to get the kids to think beyond [facts] to the bigger, more transferable understandings (avoiding the “mile wide, inch deep” approach).
 - It is a tool for teachers to help focus students on deeper understanding (e.g., if you are very clear in your own head about the enduring understandings that you hope students will achieve, then you will be better able to communicate that focus to students).
 - They help build conceptual structures in students’ brains that help them make sense of new, related knowledge (e.g., if you understand that the locations of early civilizations were chosen to facilitate transportation, defense, and farming, then you have a way to approach understanding of any early civilization. Understanding of that concept will grow richer and deeper with the study of each civilization).
 - They help teachers have shared understanding of the standard, to promote vertical and horizontal articulation.

Slide 16

4. Show slide 16, *Enduring Understandings: Format*. Present: **It is recommended that you use the format, “Students will understand that...” because this tends to lead us to better statements of enduring understanding. Simply restating the topic or saying “Students will understand” more often leads us to statements that are vague. Note that “Students will understand that” does not necessarily have to be written out each time—it may be implied, but the statement should read well if that phrase were inserted.**

Enduring Understandings: Format

- ◆ NO: “Students will understand rocks.”
- ◆ NO: “Students will know how to classify rocks.”
- ◆ NO: “Explain how to classify rocks.”
- ◆ YES: “Students will understand that rocks are classified according to properties that you can observe and/or test.”

16

Trainer’s Note: On a blank flipchart, write, “Enduring Understandings” and “Students will understand that...” to emphasize this point.

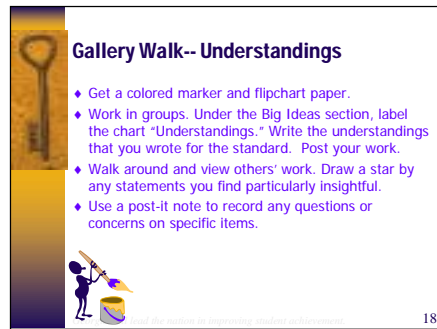
Slide 17

5. Show slide 17, *Enduring Understandings: Overarching and Topical—We Need Both!* Present: **Enduring understandings involve varying levels of abstraction and generalization. Some extend across different units, topics, or subjects; others are the focus of a single unit of study. Neither is better than the other; we need both, as appropriate to the big ideas in the standard.**

The slide features a vertical gradient bar on the left side, transitioning from yellow at the top to dark blue at the bottom. A large, stylized key is positioned vertically within this bar. To the right of the bar, the title "Enduring Understandings: Overarching and Topical—We Need Both!" is displayed in bold black text. Below the title, two bullet points are listed: "◆ Overarching: More abstract and general; relate to many units of study" and "◆ Topical: More specific; related to a single unit". In the bottom right corner, there is a small cartoon character holding a green bush, and the number "17" is printed in the bottom right corner of the slide frame.

PG-7
Gallery
Slide 18

6. Refer participants to *An Enduring Understanding* on page 7 in the Participant's Guide
7. Present: **Let's look at the information on page 7 in your Participant's Guide as we try to self assess and, if possible, improve upon the enduring understandings that you identified as part of your homework.**
8. Show slide 18, Gallery Walk—Understandings.



9. Give small groups time to get their chart and organize their ideas about understandings. Have them label their chart "Understandings," under the standard and big ideas and write their understandings from homework. Have them post their charts.
10. Conduct a gallery walk so they view others' work. Have them draw a star by any statements that they find particularly insightful.
11. Facilitate participants in identifying the strongest enduring understanding statements on the gallery standards, and in improving the statements to meet the criteria that have been discussed. Suggested answers include:

Easel chart with
standard

12. Discuss: **How could this thinking process, and the resulting enduring understandings, help you develop better assessments and instruction?**

PG-Learning Journal

13. Refer participants to the learning journal pages at the back of their Participant's Guides and ask them to write down reflections on what they have learned about identifying enduring understandings.

Developing Essential Questions

1. Ask: **What is the next step after identifying enduring understandings?**
(Developing essential questions)
2. Discuss: **What are essential questions, and why are they important?**
Suggested points to bring out include:
 - When knowledge is developed in the first place, it is often because of someone pondering and exploring a question. What makes a great story? Why were these artifacts found in this location? How might it feel if your home and land were destroyed by people in your country? Can everything be quantified? In what way is the human body a system? Many great theorists, inventors, writers, etc. started with questions such as these.
 - These “essential questions” not only lead to the development of new knowledge, but they can also be used by students and teachers to guide inquiry into existing knowledge.
 - Such questions make a unit design more coherent, make a student’s role more inquisitive, and help focus a teacher’s priorities. An important learning principle is at work here—key ideas must be questioned, played with, and discovered to be useful and deeply understood.
 - As a practical matter, developing essential questions that are strongly rooted in the enduring understandings of the standard creates a guidepost for the development of assessments and instruction. Assessments should test whether students can answer the essential question, and instruction should help them explore the question. Thus, essential questions link teacher and student activities to the standard.

Slide 19

3. Show slide 19, *Developing Essential Questions*. Go over the practical tips on the slide.

Developing Essential Questions

Essential Questions

- ◆ Are open-ended and/or topic-related
- ◆ Examine how (process) and/or why (cause and effect)
- ◆ Consider various levels in Bloom's taxonomy
- ◆ Use language appropriate to students
- ◆ Can be used as organizers for the unit
- ◆ Should be shared with other teachers

19

- Slide 20
- Slide 21
- Slide 22
- Slide 23
- Slide 24

9. Show slide 20, *From Understandings to Questions*. Present: **Let's practice with enduring understandings from the sample standard.** Ask participants to suggest possible essential questions for these understandings. Slides 20-22 include samples of content standards, and Slides 23 and 24 show samples of Characteristic of Science standards. Choose the one(s) that you need. Samples are provided for middle and high school science.
10. Slide 20 works with the overall bold standard. Slides 21 and 22 work with a specific element level of the standard. **Do NOT unpack the element level in isolation without the overall bold standard.**
11. After discussing the example on the slide, have participants work with a partner to write additional essential questions and share their favorites.

From Understandings to Questions

S7L3. Students will recognize how biological traits are passed on to successive generations.

- ♦ Students will understand that genes are the basic unit of heredity. There is a process of inheriting traits or characteristics from parents to offspring through genes.
 - Essential Question: How are characteristics of living things passed on through generations?

ON YOUR OWN:
Standard
 ♦ Students will understand that
 -- Essential Question:

Georgia will lead the nation in improving student achievement. 20

From Understandings to Questions

SPS1. Students will investigate our current understanding of the atom.

- a. Examine the structure of the atom in terms of
 - proton, electron, and neutron locations.
 - atomic mass and atomic number.
 - atoms with different numbers of neutrons (isotopes).
 - atoms with different numbers of protons.

- ♦ Students will understand that...
 - ♦ An atom's structure determines its identity and properties.
- ♦ Essential Question: Why is it important to continue to study atoms and their structure?

ON YOUR OWN:
Standard
 ♦ Students will understand that
 -- Essential Question:

Georgia will lead the nation in improving student achievement. 21

From Understandings to Questions

SB2. Students will analyze how biological traits are passed on to successive generations.

- b. Explain the role of DNA in storing and transmitting cellular information.

- ♦ Students understand that...
 - ♦ DNA is responsible for storing the information needed for cell reproduction and survival.
- ♦ Essential Question: Why is DNA a critical component to modern biology?

ON YOUR OWN:
Standard
 ♦ Students will understand that
 -- Essential Question:

Georgia will lead the nation in improving student achievement. 22

Characteristics of Science standard samples

Co-Requisites -- You can't teach one without the other!

- ♦ Remember to use the Characteristics of Science Standards to learn and apply the Content Standards.
- ♦ **S7CS6. Students will communicate scientific ideas and activities clearly.**
 - a. Organize scientific information using appropriate simple tables, charts, and graphs, and identify relationships they reveal.
- ♦ Students will understand that Punnett Squares are a tool for organizing information to predict inheritance patterns.
 - Essential Question: What couldn't we do if we didn't understand inheritance patterns?

Georgia will lead the nation in improving student achievement. 21

Co-Requisites -- You can't teach one without the other!

Remember to use the Characteristics of Science Standards to learn and apply the Content Standards.

SCSh7. Students will analyze how scientific knowledge is developed. Students recognize that:

- c. From time to time, major shifts occur in the scientific view of how the world works. More often, however, the changes that take place in the body of scientific knowledge are small modifications of prior knowledge. Major shifts in scientific views typically occur after the observation of a new phenomenon or an insightful interpretation of existing data by an individual or research group.
- e. Testing, revising, and occasionally rejecting new and old theories never ends.

Students will understand that...

- ♦ Science changes as new discoveries are accepted by the scientific community. New theories build on prior theories.

-- Essential Question: Why are scientific theories so difficult to change?

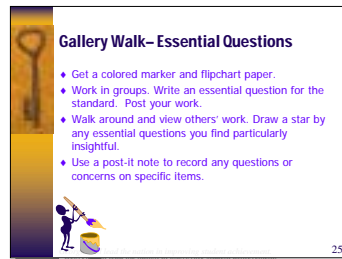
ON YOUR OWN:
Standard
 ♦ Students will understand that
 -- Essential Question:

Georgia will lead the nation in improving student achievement. 24

PG-8
Gallery

Slide 25

4. Refer participants to *Essential Questions* on page 8 in the Participant's Guide.
5. Present: **Let's look at the information on page 8 in your Participant's Guide as we try to self assess and, if possible, improve upon the essential questions that you identified as part of your homework.**
6. Show slide 25, *Gallery Walk—Essential Questions*.



7. Give small groups time to get their chart and organize their ideas about essential questions. Have them label their chart "Questions," under the standard, big ideas, understandings and write their essential questions from homework. Have them post their charts.

Easel chart with
standard

8. Refer participants to the easel chart printed with the new standard to be unpacked during the demonstration. Ask: **What are some appropriate essential questions?** Ask participants first to write down their ideas independently, then to share them. Suggested answers include:
9. Discuss: **How could essential questions help you develop better assessments and instruction?**

PG-Learning Journal

10. Refer participants to the learning journal pages at the back of their Participant's Guides and ask them to write down reflections on what they have learned about developing essential questions.

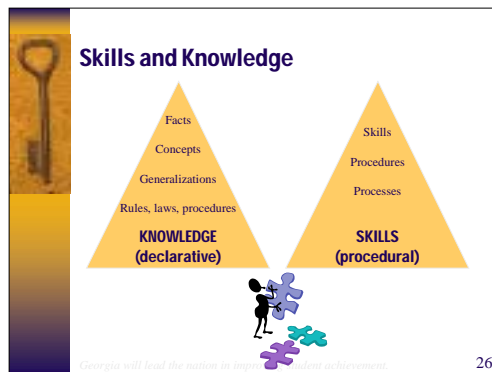
Identifying Skills and Knowledge

PG-9

1. Refer participants to the diagram *GPS and the Unit Design Process* on page 9 in the Participant's Guide. Present:
 - **This diagram is a repeat of the one that you received on day one of the training.**
 - **You can see that we have been working on Stage 1, *Identify Desired Results*. What information from the GPS have we used so far to identify big ideas, enduring understandings, and essential questions?** (The standards and elements)
 - **What additional information do we need to identify skills and knowledge?** (What a student should know and be able to do to reach the understandings)
 - **Why do we look at skills and knowledge only after identifying big ideas, enduring understandings, and essential questions?** (to make sure that the skills and knowledge are directly supporting the enduring understandings of the standard)

Slide 26

2. Show Slide 26, *Skills and Knowledge* and ask participants to define the difference between skills and knowledge. (In a nutshell, knowledge is something you can say; a skill is something you can do.)



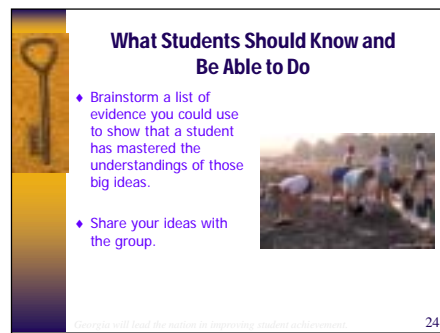
3. Discuss: **Let's take a look at an essential question and develop some skill and knowledge statements.**

PG-10
Gallery

4. Refer participants to *Skills and Knowledge* on page 10 in the Participant's Guide and to the gallery they created during the session.
5. Present: **Let's look at the information on page 10 in your Participant's Guide.**
6. Facilitate participants in identifying the strongest essential skill and knowledge statements on the gallery standard, and in improving the statements so that they cover a wide range of *necessary* skills and knowledge using verbs similar to the ones near the bottom of page 10 in the Participant's Guide.

Easel chart with
standard
Slide 27

7. Refer participants to the easel chart printed with the new standard to be unpacked during the demonstration. Ask: **What are some appropriate skill and knowledge statements?** Ask participants first to write down their ideas independently, then to share them.



8. Discuss: **How could good skills and knowledge statements help you to better choose instructional materials and strategies?**

PG-Learning Journal

9. Refer participants to the learning journal pages at the back of their Participant's Guides and ask them to write down reflections on what they have learned about developing essential questions.

Summary

- Easel chart:
Questions and
Concerns (from
introduction)
10. Refer to the easel chart of "Questions and Concerns" developed at the end of the introduction. Address any questions or concerns related to the content of the demonstration by first asking participants to identify any items that have been addressed and suggesting answers themselves, then by adding any additional information you might add.
- Graphic organizers
11. Ask participants to revisit the graphic organizers that they created during the introduction and work in small groups to enrich them.
12. Transition: **In the next section, we are going to basically repeat this unpacking process, but without all the extra discussion about the unit design process, and without my direct guidance.**

Unpacking a Single Standard (Optional)

Use this section only for a workshop on unpacking standards or needing additional practice! Otherwise skip to Unpacking Multiple Standards.

- Overview** In this section, participants will work in small groups to unpack a single standard, then they will present their work to the large group, which will serve as a “critical friends” group and provide constructive feedback.
- Objective**
- Develop, for a given standard, the big ideas, enduring understandings, essential questions, and skills and knowledge (unpack the standard).
- Activities**
- Small Group Activity
 - Large Group Discussion
- Materials**
- Chart paper
 - Flipchart Markers
 - Participant's Guide
 - Overhead projector or computer and LCD projector
 - Transparencies or PowerPoint presentation

Small Group Activity

1. Choose a sample standard from one of the ones we unpacked as a group.
2. Take participants through each step of identifying the big ideas, agreeing on understandings, and writing essential questions.
3. Ask participants to work in triads (preferably with others who are teaching the same subject/grade level as they are).

Trainer's Note: If necessary, participants may work in pairs or groups of four; try to make sure that everyone has a suitable peer group (one in which they would be interested in looking at the same standards).

4. Present: **Standards and elements should not be taught in isolation; however, we want to make sure that you get more comfortable with unpacking a standard before you tackle more than one. Therefore, you will start by working in small groups to unpack a single standard. In the next section, you'll work on unpacking multiple standards for unit development.**
5. Assign each group to select one standard or set of related standards to analyze.
6. Refer participants to page 11 in their Participant's Guide, *Unpacking a Standard*. Present: **This is a template that you can use for this activity. If you prefer to use scratch paper or another template, that's fine, but it should have all the same components.**
7. Present: **You are going to have 45 minutes to complete this activity, but we are going to take a pause in the middle to share our thinking.**
8. Ask groups to begin working.
9. At a suitable time (about 20 or 25 minutes into the activity), ask participants to pause in their work.

PG-11

Chart paper
Markers

10. Ask each group what work they've accomplished, what insights they've had, and what they're struggling with. Ask other groups to provide constructive feedback.
11. At the end of 40 minutes, ask each group to work on summarizing their work into an easel chart. Also, ask them to create a list of questions based on feedback they'd like from the group, such as, "We are worried that this enduring understanding is too vague and not really targeted to the standard. What do you think?"
12. Allow five minutes for preparation.

Large Group Discussion

1. Post all the easel charts that participants have presented, so that everyone can see everyone else's work.
2. Ask each group to present their unpacked standard. Ask training participants to serve as a peer review group, listening to each other's work and give feedback.
 - One group presents their unpacked standards.
 - Observers from other groups ask clarifying questions.
 - Presenting group asks observers questions about their work, such as, "We'd like your feedback on which of these essential questions you think are most critical for this."
 - Observers provide warm and cool feedback, while presenting group remains silent.
 - Open discussion.
3. Transition: **Now that we've seen each other's work on a single standard, let's work in small groups on multiple standards.**

Unpacking Multiple Standards

- Overview** In this section, participants will work in small groups to unpack multiple standards merging Content and Characteristics of Science standards for a single unit. They will present their work to the large group, which will serve as a peer review group and provide constructive feedback.
- Objective** ➤ Unpack multiple standards to create cohesive units of study.
- Activities** ➤ Small Group Activity
➤ Large Group Discussion
- Materials** ➤ Chart paper
➤ Flipchart Markers
➤ Participant's Guide
➤ Overhead projector or computer and LCD projector
➤ Transparencies or PowerPoint presentation

Small Group Activity (40 minutes)

- Easel charts from previous exercise
1. Ask participants to work in the same groups.
 2. Present:
 - **Around you, on these easel charts, you see several unpacked standards.**
 - **In the next exercise, I'd like you to complete Stage 1 of unit design (as shown on page 9 of your Participant's Guide) for one unit of study. This may be a unit that students complete in one week or six weeks—whatever amount of time is appropriate.**
 - **Choose the Content and Characteristics of Science standards that apply to your unit from those on these charts. (You may also pull additional standards from the GPS as needed, even if they are from other subject areas.)**
 - **Complete the unpacking process for all the standards as a cohesive group. You may pull from work that groups have already done.**
 - **Do not plan assessment and instruction yet; just complete Stage 1.**
- PG-12
3. Refer participants to page 12 in their Participant's Guide, *Unpacking Multiple Standards*. Present: **This is a template that you can use for this activity. If you prefer to use scratch paper or another template, that's fine, but it should have all the same components.**
 4. Present: **You are going to have 40 minutes to complete this activity.**
 5. Ask groups to begin working.
- Chart paper
Markers
6. At the end of 35 minutes, ask each group to work on summarizing their work into an easel chart. Also, ask them to create a list of questions based on feedback they'd like from the group, such as, "We are worried that this enduring understanding is too vague and not really targeted to the standard. What do you think?"
 7. Allow five minutes for preparation.

Large Group Discussion

1. Post all the easel charts that participants have presented, so that everyone can see everyone else's work.
2. Ask each group to present stage 1 of their unit plan. Ask training participants to serve as a peer review group, listening to each other's work and give feedback.
 - One group presents their unpacked standards.
 - Observers from other groups ask clarifying questions.
 - Presenting group asks observers questions about their work, such as, "We'd like your feedback on which of these essential questions you think are most critical for this."
 - Observers provide warm and cool feedback, while presenting group remains silent.
 - Open discussion.

Explain: **The more standards you unpack, the more comfortable you will be with the process. Continue to unpack the standards for the course you will teach in 2005-2006.**

3. Transition: **Now that you have an understanding of Stage One of the Unit Design process, we are going to move on to Stage Two for an overview of designing balanced assessments. Remember that Day 3 of training will focus on designing balanced assessments.**

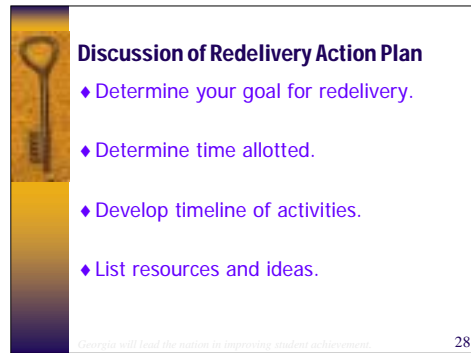
Summary and Follow Up Assignments

- Overview** Participants work on an action plan to unpack all the remaining standards and group them into units.
- Objectives**
- Demonstrate how to lead the Professional Development process in a school.
- Activities**
- Action Planning
 - Follow-up Assignment
 - Summary
- Materials**
- Chart paper
 - Flipchart Markers
 - Participant's Guide
 - Overhead projector or computer and LCD projector
 - Transparencies or PowerPoint presentation
 - Note paper

Action Planning

Slide 28
PG-13

1. Show slide 28, *Discussion on Redelivery Action Plan*.



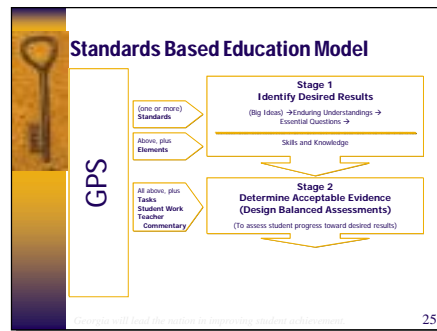
4. Present: **On page 13 of your Participant's Guide, you'll find an Action Plan template. This is for you to plan out your group work for completely unpacking all the standards into logical units. I'm going to allow you about 10 minutes to work on your plan now. Minimally, you should determine when and where you'll meet next and what you hope to accomplish in that first meeting.**
5. Ask groups to present their "next step."

Follow Up Assignment

1. Present: **Your follow-up assignment will help prepare you for the next training session.**

Slide 29

2. Show slide 29, Standards Based Education Model, Stage 1 and Stage 2.



Explain: **Stage 2 determines acceptable evidence to assess student progress toward desired results. It should include a balance of assessments for formative as well as summative information.**

PG-14

3. Refer participants to the follow-up assignment on page 14 in the Participant's Guides.

Slide 30

4. Show slide 30, Day 3 Pework Assignment.

The slide, titled "Day 3 Pework Assignment", features a key icon on the left. The main content consists of three bullet points:

- ◆ Redeliver how to unpack a standard.
- ◆ Day 3 will focus on determining acceptable evidence.
- ◆ Use the standard you unpacked or choose a different one to unpack. Make a list of ways to assess a student's understanding of those big ideas and understandings.

At the bottom, a small note reads "Teachers will lead the session to determine student achievement." and the slide number "30" is in the bottom right corner.

5. Explain: **This follow-up assignment asks you to use the standard you unpacked or choose a different one to unpack.**
6. **Make a list of ways to assess a student's understandings of those big ideas, understandings and essential questions.**
7. **Be ready to discuss: What evidence is necessary? How good is good enough?**
8. Ask one or two participants to state their understanding of the follow-up assignment.



Reflections on the Day

Please take a few minutes and share your thoughts on the following four areas.

Important things I've learned or had reaffirmed. . .

Today's experiences have left me feeling. . .

Questions I want answered now. . .

What I will do when I return to my workplace. . .