



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

Mathematics 6th Grade Participant's Guide

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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.

For more information on this or other GPS training modules, please contact Robin Gower at (404) 463-1933 or rogower@doe.k12.ga.us.

Use of This Guide

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

Agenda

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

Introduction 60 minutes

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

Large Group Demonstration 1 hour, 35 minutes

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

Unpacking a Single Standard 1 hour, 30 minutes

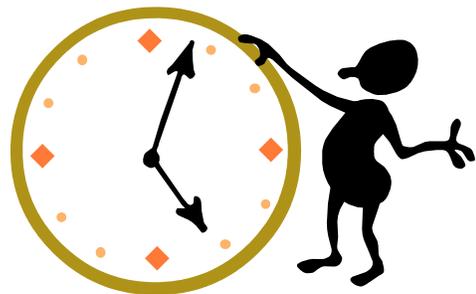
- Small Group Activity
- Large Group Discussion

Unpacking Multiple Standards 1 hour

- Small Group Activity
- Large Group Discussion

Summary and Follow Up Work 20 minutes

- Follow-up Assignment
- Summary



Module Goal

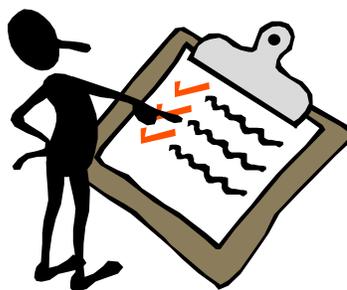
Demonstrate a deep understanding of the new Georgia Performance Standards and mathematics and the standards-based education approach, through thoughtful curriculum planning. Key words from the goal:

- Deep understanding
- Georgia Performance Standards (GPS)
- Standards-based education

Module Objectives

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

1. Define the rationale for and describe the process of 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.



A Big Idea...

...**Provides a “conceptual lens” for organizing content.** A Big Idea refers to core concepts, principles, theories, and processes that should serve as the focal point of the curricula, instruction, and assessment. Big Ideas reflect expert understanding and anchor the discourse, inquiries, discoveries, and arguments in a field of study. They provide a basis for setting curriculum priorities to focus on the most meaningful content.

...**Serves as an organizer for connecting important facts, skills, and actions.** Big Ideas function as the “conceptual Velcro” for a topic of study. They connect discrete knowledge and skills to a larger intellectual frame and provide a bridge for linking specific facts and skills. A focus on these larger ideas helps students to see the purpose and relevance on content.

...**Transfers to other contexts.** Discrete facts do not transfer. Big Ideas are powerful because they embody transferable ideas, applicable to other topics, inquiries, context, issues, and problems. Because we can never cover all the knowledge on a given topic, a focus on the Big Ideas helps to manage information overload. Big Ideas provide the conceptual through lines that anchor a coherent curriculum.

...**Manifests itself in various ways within disciplines.** Big Ideas are typically revealed through one or more of the following forums: a core concept (e.g., adaptation), a focusing theme (e.g., man’s inhumanity to man), an ongoing issue or debate (e.g., liberal vs. conservative), a puzzling paradox (e.g., poverty amidst plenty), an important process (e.g., writing process), an authentic problem or persistent challenge (e.g., illiteracy, voter apathy), an illuminating theory (e.g., Manifest Destiny), an underlying assumption (e.g., the markets are rationale), or differing perspectives (e.g., terrorist vs. freedom fighter).

...**Requires uncoverage because it is an abstraction.** A Big Idea is inherently abstract. Its meaning is not always obvious to students, and simply covering it (i.e., the teacher or textbook defining it) will not ensure student understanding. “Coverage” is unlikely to cause genuine insight; understanding must be earned. Thus, the idea must be uncovered—its meaning discovered, constructed or inferred by the learners, with the aid of the teacher and well-designed learning experiences.

How to identify big ideas: Read the standard thoroughly. Underline the big ideas in the standard. Make additional notes as needed. Note that this is just a stepping stone in the process; once you have turned your Big Ideas into enduring understandings, you do not need to write them down.

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An Enduring Understanding...

...Involves the big ideas that give meaning and importance to facts. Enduring understandings are made up of the concepts, principles, and theories that weave many facts into revealing and useful patterns. They involve the (few) organizing priority ideas that enable us to make sense of past lessons, conduct current inquiry, and create new knowledge.

...Can transfer to other topics, fields, and adult life. Such understandings endure in that they enable us to make vital and informative connections in our learning—as students and as adults. For example, the idea that “might does not make right” applies to both playground disputes and international diplomacy.

...Is usually not obvious, often counter-intuitive, and easily misunderstood. An understanding is an inference, not a fact. It is an insight derived from inquiry. Key understandings in intellectual fields (e.g., in physics: *Objects remain in motion at a constant velocity if no force acts on them*) often violate common sense and conventional wisdom. They are thus often prone to misunderstanding by students. These understanding therefore cannot be covered; they must be uncovered.

...May provide a conceptual foundation for basic skills. The skill-based teaching in mathematics, foreign language, and physical education does not seem to deal with “understanding” in most units, all skills derive their value from the strategic principles that help us know when and how to use the skill. The understandings also justify the use of a skills (e.g., the student who can explain why you should use a bent-arm pull in a swimming free style) and enable the student to extend the use of the skill to new situations (e.g., the use of bent-arm pull in back stroke).

...Is deliberately framed as a generalization—the “moral of the story.” An understanding is a generalization derived from inquiry. It is the specific insight that should be inferred from study of the topic (not just the stating of the topic)—what we want the student leaving the study to realize. Note: The enduring understanding of a unit might be that there is no single agreed-upon understanding, or that people disagree about how the issues, facts, or text should be understood.

How to identify enduring understandings: Frame them as full-sentence generalizations starting with “The student will understand that...” Avoid statements that are vague or trite. It may help to think about common misunderstandings about the topic. Enduring understandings may be overarching (beyond the specifics of the unit) or topical.

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Essential Questions...

...Have no simple “right” answer; they are meant to be argued. Essential questions yield inquiry and argument—a variety of plausible responses, not straightforward facts that end the matter. They should *uncover* rather than cover the subject’s puzzles and perspectives. They should result in conclusions drawn by the learner, not recited facts. Like enduring understandings, they may be topical or overarching.

Examples: Does art reflect culture or help shape it? What makes a great story?

...Are designed to provoke and sustain student inquiry, while focusing learning and final performances. Essential questions work best when they are designed and edited to be thought provoking to students, engaging them in sustained, focused inquiries that culminate in important performance. They involve the counterintuitive, the visceral, the whimsical, the controversial.

Examples: Does food that is good for you have to taste bad? Are censorship and democracy compatible?

...Often address the conceptual or philosophical foundations of a discipline. They reflect the most historically important issues, problems, and debates in a field of study.

Examples: What is a proof? Nature or nurture? Can fiction reveal truth?

...Raise other important questions. Essential questions lead to other important questions within, and sometimes across, subject boundaries.

Example: In nature, only the strong survive? (Leads to questions such as, “What is strength? Are insects strong, since they are survivors?”)

...Naturally and appropriately recur. The same important questions are asked and asked again throughout one’s learning.

Example: What makes a book “great?”

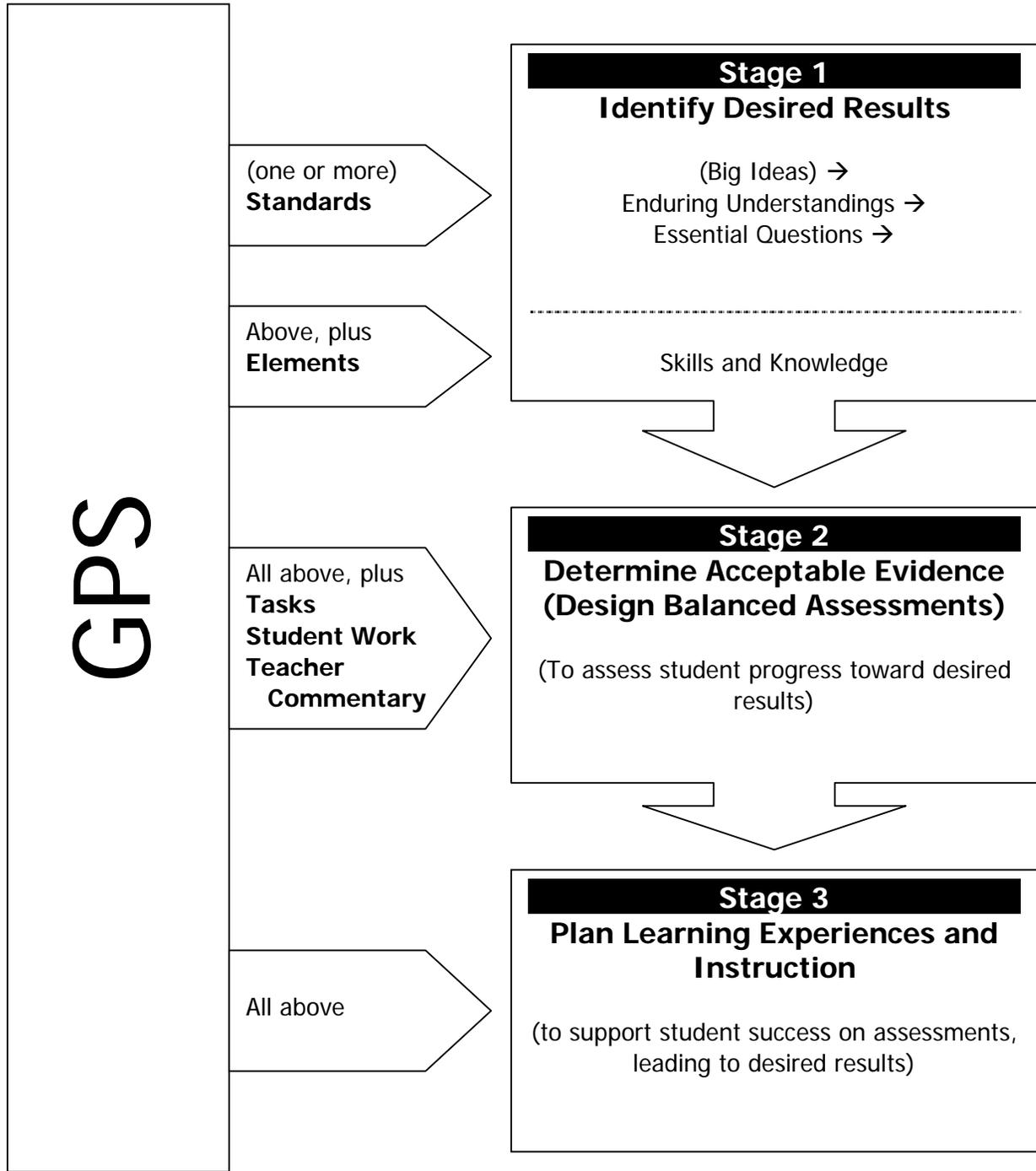
...Stimulate vital, ongoing rethinking of big ideas, assumptions, and prior lessons. They force us to ask deep questions about the nature, origin, and extent of our understanding.

Example: (In light of fractions, place value, irrationals, and negative square roots) what is a number?

How to develop essential questions: Two to five per unit is reasonable. Put them in language appropriate to students. Use them as organizers for the unit, making the “content” answer the questions. Sequence questions so they lead naturally from one to another. Share essential questions with other teachers to ensure curricular coherence.

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GPS and the Backward Design Process



Skills and Knowledge

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

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

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

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

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

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

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

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Unpacking a Standard

| | |
|---|--|
| Standard (underline big ideas, add as needed) | |
| Elements | |
| Enduring understandings | |
| Essential questions | |
| Skills and knowledge | |

Unpacking Multiple Standards

| | |
|--|--|
| Standards (underline big ideas, add as needed) | |
| Elements | |
| Enduring understandings | |
| Essential questions | |
| Skills and knowledge | |

Action Plan

Directions: Complete the following chart to help shape your team's work between this training session and the next one. Your goal is to complete stage one (unpacking the standards) for all the standards, so that you have a very rough outline of the entire year's units of study. Here are some questions to consider:

- How will we find the time to continue this work?
- How can we build and sustain a high level of enthusiasm and commitment?
- What is our timeline?
- How will we ensure accountability?
- How will we celebrate successes?

| Step/Activity | Who | By When | How |
|---------------|-----|---------|-----|
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| | | | |
| | | | |
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Follow Up Assignment

- Read page 142 in the UBD workbook.
- Take the Assessment Inventory on page 143.
- Bring assessment resource materials to the Day 3 training.
- Bring "Bright Ideas" about the redelivery of Day One and/or Day Two Training.



/// Bright Ideas Worksheet-Redelivery

1. What went really well?

2. What changes would I make?

Recommended Readings

Books

Dufour, R., & Eaker, R. (1998). *Professional Learning Communities at Work*. Bloomington, IN: National Educational Service.

The authors use Adlai Stevenson High School as the case study of how principals can create learning communities where student learning and achievement are center stage. The book lays out the school improvement process. No failing schools would exist if every school became a learning community modeled after DuFour's school. The book contains an extensive bibliography.

Hayes Jacobs, Heidi. *Mapping the Big Pictures: Integrating Curriculum and Assessment K-12*. Alexandria, VA: Association for Supervision and Curriculum Development. 1997.

In this step-by-step description of the process for creating and working with curriculum maps from data collection to ongoing curriculum review, Jacobs discusses the importance of "essential questions," as well as assessment design that reflects what teachers know about the students they teach. The benefits of this kind of mapping are obvious for integrating curriculum. Through the development of curriculum maps, educators can see not only where subjects already come together but also any gaps that may be present.

Literacy Across the Curriculum: Setting and Implementing Goals for Grades Six through 12. Southern Regional Education Board, 2004. Publication Orders Department, 592 10th St. N.W., Atlanta, GA 30318-5790, Fax: (404) 872-1477 (03V63, \$10 each/\$6.50 each for 10 or more.) <http://www.sreb.org/main/Publications/catalog/howtoorder.asp>.

This volume is essential for state, district, and school leaders who plan to implement schoolwide literacy programs. It provides concrete, research-based steps not only to raise reading and writing achievement but also to help students learn more in every class by using literacy skills. The guide focuses on five literacy goals: reading 25 books across the curriculum; writing weekly in all classes; using reading and writing strategies; writing research papers; and taking rigorous language-arts classes.

Marzano, Robert J., Debra J. Pickering, and Jane E. Pollock. *Classroom Instruction That Works: Research-Based Strategies for Increasing Student Achievement*. Alexandria, VA: Association for Supervision and Curriculum Development. 2001.

Using a meta-analysis of thousands of research studies, Marzano clearly answer the question, "Which instructional techniques are *proven* to work?" They provide 13 proven strategies that all teachers can use and they explain the research in a clear, practical manner.

Marzano, R., Norford, J., Paynter, D., Pickering, D., & Gaddy, B. (2001). *A Handbook for Classroom Instruction That Works*. Alexandria, VA: Association for Supervision and Curriculum Development.

A perfect resource for self-help or school study groups, this handbook makes it much easier to apply the teaching practices outlined in *Classroom Instruction That Works*. The authors guide the reader through the nine categories of instructional strategies that are most likely to maximize student achievement and provide everything needed to use the strategies quickly in classrooms. The book includes the following: exercises to check understanding; brief questionnaires to reflect on current beliefs and practices; tips and recommendations to implement the strategies; samples, worksheets, and other tools to help plan classroom activities; and rubrics to assess the effectiveness of the strategy with students.

Marzano, Robert J. *Classroom Management That Works: Research-Based Strategies for Every Teacher*. Alexandria, VA: Association for Supervision and Curriculum Development. 2003.

The authors analyze research from more than 100 studies on classroom management to answer the questions, "How does classroom management affect student achievement?" and "What techniques do teachers find most effective?" The authors provide action steps, along with real stories of teachers and students, to guide teachers in implementing the research findings.

Marzano, Robert J. *Transforming Classroom Grading*. Alexandria, VA: Association for Supervision and Curriculum Development. 2000.

Grading has the *potential* for being a valuable learning tool that helps both students and teachers clearly see how they can improve; however, this potential is seldom realized. In this book, Marzano presents viable alternatives to traditional assessment that are grounded in research and practical at the same time.

Strong, R., Silver, H., & Perini, M.. *Teaching What Matters Most: Standards and Strategies for Raising Student Achievement*. Alexandria, VA: Association for Supervision and Curriculum Development. 2001.

This practical book about the responsibility educators have to teach what matters most includes many examples of educators throughout the nation who have been successful in increasing student performance on state and national assessments. The authors also explore three changes that must take place to achieve this goal: responsible standards, responsible strategies, and responsible assessment practices.

Tomlinson, C. *The Differentiated Classroom: Responding to the Needs of All Learners*. Alexandria, VA: Association for Supervision and Curriculum Development. 1999.

Tomlinson explains the elements of differentiated instruction and the importance of differentiated instruction within the classroom. The book also serves as an instructional guide for educational leaders and instructors as differentiated strategies are implemented.

Tomlinson, C. *How to Differentiate Instruction in Mixed-Ability Classrooms*. Alexandria, VA: Association for Supervision and Curriculum Development. 2001.

This excellent resource includes concrete examples of instructional strategies matched to the readiness, interests, and talents of all students. Strategies include learning-centered, hands-on activities; contracts; and investigative projects. The author also offers lesson-planning strategies to provide scaffolding of the content, procedures used in learning, and products of learning.

Wiggins, Grant and Jay McTighe. *Understanding by Design*. Alexandria, VA: Association for Supervision and Curriculum Development. 1998.

This book explains the "backward design" process that is the backbone of standards-based education. The book explains both the underlying principles and the process teachers can use to put them into practice.

Wiggins, Grant and Jay McTighe. *Understanding by Design Study Guide*. Alexandria, VA: Association for Supervision and Curriculum Development. 2000.

This companion book to *Understanding by Design* provides discussion questions, graphic organizers, and summaries to support faculty study groups that are exploring *Understanding by Design*.

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

This companion book to *Understanding by Design* is chock-full of templates and examples to help teachers put the process into place.

Professional Organizations

NCTE - <http://www.ncte.org/>

GCTE - <http://www.gcte.org/>

IRA - <http://www.reading.org/>

GRA - <http://www.georgiareading.org/>

Web Sites

Read-Write-Think. NCTE/IRA. <http://www.readwritethink.org/>.

This site contains lessons, web resources, standards, and student materials. It provides quality practices and resources in reading and language arts instruction.

Illinois School Improvement Division.

http://206.166.105.86/knowledge/standards_resources.asp.

This site provides Illinois Learning Standards Resources, including benchmark indicators, sample learning activities, and sample student work.

Units (incorporating Learning Focused components). Connected Learning.

<http://www.title3.org/>.

BOCES is a cooperative service organization that helps school districts save money by pooling resources and sharing costs.

Special Education Resources

Access, Participation, & Progress in the General K-12 Curriculum. National Center on Accessing the General Curriculum (ncaog.org).

Approximately 70 general and special educators and parents attended the National Capacity Building Institute on Access, Participation, and Progress in the General Curriculum, held on July 10, in Arlington, VA. The article includes the proceedings from the Institute.

Aligning Special Education with NCLB. www.ldonline.org.

The No Child Left Behind Act (NCLB) is a standards-based reform movement. This movement emphasizes standards and the alignment of curriculum and assessment to those standards. States established what is to be taught. The goal of standards is to increase academic achievement levels. A related goal is to close the achievement gap for students who have traditionally been at-risk for academic failure or lack of success. This group includes students with disabilities.

Thompson, S., Thurlow, M., Quenemoen, R.F., & Esler, A. (2001). *Addressing Standards And Assessments On State IEP Forms*, National Center on Educational Outcomes (NCEO Synthesis Report 38)

This article summarizes data on each State's use of standards in developing Individualized Education Programs (IEP) for students with disabilities. All fifty states were asked to send their IEP forms and to indicate whether the forms were required, recommended, or simply sample forms. Out of the 41 states with IEP forms, only 5 states specifically addressed the general curriculum on their forms. Recommendations for IEP forms that provide decision-making guidance involving access to the general curriculum are summarized.

Writing Standards-based IEPs. Colorado Department of Education. www.cde.org.

The Colorado Department of Education provides information for teachers on developing standards-driven IEPs. The summary includes a definition of standards-driven IEPs, characteristics of standards-driven IEPs, and a rationale for standards-driven IEPs.

Resources for Differentiation

Association for Supervision and Curriculum Development. *At Work in the Differentiated Classroom.* Alexandria, VA. Author. (video staff development set). 2001.

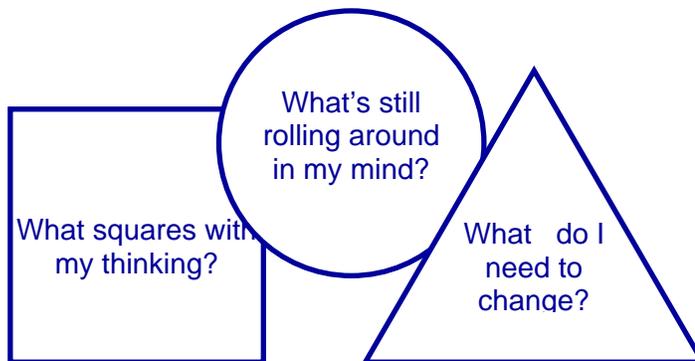
Chapman C. & Gregory, G. *Differentiated Instruction Strategies For Writing In The Content Areas.* Thousand Oaks, CA: Corwin Press. 2003.

Coil, C. *Standards-Based Activities And Assessments For The Differentiated Classroom*. Marion, IL: Pieces of Learning. 2004.

Tomlinson, C. *Fulfilling The Promise Of The Differentiated Classroom: Strategies And Tools For Responsive Teaching*. Alexandria, VA: Association for Supervision and Curriculum Development. 2003.

Winebrenner, S. *Teaching Gifted Kids In The Regular Classroom*. Minneapolis, MN: Free Spirit. 1992.

Learning Journal



Learning Journal

