Mississippi Science Framework

Facts to know:

1. The Science Test in 2010 will cover the 2001 Science Frameworks. Your curriculum maps match the 2001 frameworks. Do not forget that the test covers objectives from the 3rd, 4th and 5th grades.
   5th grade: Use your 2001 Frameworks and the Inquiry objectives from 2010
   4th grade: Use the 2010 Frameworks
2. PLD's and Test Item Specifications should be finalized (Winter 2009).
3. Teaching strategies/resources will be developed using the Understanding by Design format (2009-2010).
4. Textbooks will be adopted (2009).
5. New assessment items will be field tested randomly throughout the state (Spring 2010).
6. Practice test will be developed (Summer 2010)
7. During the 2010-2011 school year all grade levels will use the 2010 Frameworks. The new Science test will only cover one year of objectives. (5th grade only)

Understanding the 2010 Frameworks:

1. Consist of four Content Strands (Inquiry, Physical Science, Life Science and Earth Science)
2. Process Strands: Science as Inquiry, Unifying Concepts and Processes, Science and Technology, Science in Personal and Social Perspectives, and History of Nature and Science.
   a. Integrate the process strands throughout instruction
   b. Integrate throughout all science units
3. The Framework is "Spiraled."
   "A spiral approach develops curriculum around recurring, ever deepening inquires into big ideas and important tasks, helping students come to understand in a way that is both effective and developmentally wise…causing knowledge to increase in depth and breadth." –Dr Grant Wiggins, Understanding by Design
4. When reading the objectives take note of the following:
   a. parenthesis with e.g.- this is there only for better explanation of the objective
   b. parenthesis without e.g.- must be taught using exact wording
5. DOK
   a. Instruction and classroom assessments must reflect the DOK level of the objective or intended learning outcome.
   b. State assessments will be designed so that minimally fifty percent of the test items match the DOK of the corresponding objectives.
   c. Instruction may need to be scaffold for students in order to reach the target DOK level.
6. Classroom Assessments
   a. Teachers must change from "Tell me what I told you" assessments to "Demonstrate and apply what you have learned."
   b. Assessment item cognitive demand should = objective cognitive demand.

i. DOK 2 objectives require DOK 2 assessment items.
    - Example: A student makes a passing grade of 70% on your weekly science test.
    - The objective is DOK 2.
    - If all or most of the assessment items are DOK 1, has the student really mastered the objective?
    - Do you know if the student really understands at the DOK 2 level?

c. Assessment of Multiple Objectives
    i. Many objectives are interrelated within and across content strands.
    ii. Objectives are not meant to be taught in isolated units of instruction.
    iii. Each objective should have a minimum of five items.
    iv. Plan for majority of the items to be at the DOK level of that objective.
    v. Determine your passing score.

7. Selecting Instructional Strategies
    a. Look at the DOK level of the objective.
    b. What are the students suppose to be able to do? e.g. Compare, identify, investigate.
    c. What content do they have to know or learn?
    d. What instructional strategies are needed to meet the different DOK levels of objectives?
    e. What instructional strategies have been proven by research to be effective?
8. Effective Instructional Strategies
    a. Identifying similarities and differences
    b. Summarizing and note-taking
    c. Reinforcing effort and providing recognition
    d. Homework and practice
    e. Nonlinguistic representations
    f. Cooperative learning
    g. Setting goals and providing feedback
    h. Generating and testing hypotheses
    i. Activating prior knowledge: cues, questions, and advanced organizers