

A photograph of a classroom scene. In the foreground, the back of a young girl with dark hair in a ponytail, wearing a red shirt, is visible. Her right hand is raised high. To her left, another student's hand is raised. In the background, several other students have their hands raised, some pointing upwards. The background is a chalkboard with faint, illegible writing. The overall atmosphere is one of active participation in a lesson.

Florida Specifications for Science Instructional Materials 2010-11

**Florida Department of Education
Dr. Eric J. Smith,
Commissioner**

Science Instructional Materials Specifications

Next Generation Sunshine State Standards for Science

- Adopted in February 2008
- Provide the focus and foundation for teaching and learning science in Florida
- Reflect the importance of scientific literacy for *all* students
- How are these standards different?
 - Grade-level specific benchmarks for grades K-8
 - Provide clearer, more concise learning targets
 - Emphasize the development of a deeper understanding of a smaller number of learning targets

Science Instructional Materials Specifications

Critical Components of K-12 Science Teaching and Learning in Florida

- Standards-based Instruction
 - Learning progressions through 18 Big Ideas
 - Introduction of concepts at appropriate grade level
- Integration of Science Content and Science Process
 - Instructional materials should support the integration of the Nature of Science benchmarks within science content
- Dynamic Data-based Instruction
- Language and History of Science

Science Instructional Materials Specifications

Critical Components of K-12 Science Teaching and Learning in Florida

- Early Development of Science Knowledge and Skills
- Focus on Understanding Concepts
- Focus on Big Ideas
- Targeting Misconceptions
- Integration of Technology Skills and Tools

Science Instructional Materials Specifications

Science Course Descriptions

- Approved by State Board of Education on September 15, 2009
- All middle school and high school science courses have a laboratory component
- What's new or different?
 - Grade level elementary science courses with grade-specific benchmarks from the NGSSS
 - Middle school and high school course descriptions were revised to reflect the NGSSS

Science Instructional Materials Specifications

Science Course Requirements

- Middle Grades Course Requirements (F.S. 1003.4156)
 - 3 middle school or higher courses in science
 - Life Science, Earth/Space Science, and Physical Science or Comprehensive Science series
- High School Graduation Requirements (F.S. 1003.428)
 - 3 years of science; 2 of which must have lab component
 - Any combination of science courses or Integrated Science Series

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Science Course Requirements

- State legislature is working to increase science graduation requirements:
 - Begin with Biology I
 - Phase in other science course requirements
- This will mean a need for rigorous high-quality instructional materials in these “core” science courses

Top 10 High School Science Courses 2007-2008

Most Total Enrollment	Offered in Most Districts
Biology I	Biology I
Integrated Science I	Biology I Honors
Biology I Honors	Earth/Space Science
Earth/Space Science	Chemistry I
Chemistry I	Chemistry I Honors
Chemistry I Honors	Integrated Science I
Physical Science	Physical Science
Marine Science I	Environmental Science
Physics I Honors	Marine Science I
Earth/Space Science Honors	Physics I Honors

Science Instructional Materials Specifications

Other Issues

- Low proficiency among English Language Learners statewide indicates a need for instructional materials that provide strong support in science literacy for ELLs, including targeted strategies
- Low numbers of students scoring at the highest proficiency level in science (for all 3 assessed grade levels) indicates a need for rigorous instructional materials in science, including the Integrated Science series

Science Instructional Materials Specifications

Other Issues

- Science courses with highest failure rates indicate need for high-quality instructional materials for those courses:
 - Marine Science 1 and Integrated Science II (10%)
 - Physical Science Honors (8%)
 - Biology (7%)
- Science instructional materials should provide frequent opportunities for teachers to use valid and reliable formative assessment tools to measure student understanding

A photograph of a classroom where several students are raising their hands. In the foreground, a young girl with dark hair in pigtails, wearing a red shirt, has her right hand raised. To her left, another student in a blue shirt has their hand raised. In the background, a student in an orange shirt also has their hand raised. The background is a chalkboard filled with faint, illegible mathematical equations and text. The word "Questions?" is overlaid in the center of the image.

Questions?