



Florida's K-12 Science Adoption 2005-2006

Florida Addresses the Curriculum Needs of All Learners

Because Florida will not have a separate Science call for special education students, publishers who submit Science material for consideration will be required to incorporate strategies, materials, activities, etc. that consider the special needs of these students. In providing for students with special needs, Florida evaluators will be guided by the research reported in the document *Universal Design for Curriculum Access*. The following Web sites can be accessed for detailed information on this research:

<http://www.trace.wisc.edu/>

<http://www.cast.org>

<http://www.darkwing.uoregon.edu/~ncite/>

Although Florida is not having a separate call for ESE, that is not to say that all materials will be equally suitable for all children. Florida's State Adoption Committees may, as always, identify some submissions as "especially suitable" for a particular group of students. (Some groups may be reading below grade

level or above grade level, may include reluctant readers or those with specific processing difficulties.) Committee comments appear with adopted titles in the Florida Catalog of Adopted Materials and serve as a guide for teachers or administrators in search of materials. Each State Adoption Committee has at least one member, though usually more than one, who is or has been a certified teacher of ESE students.

Accommodations and Modifications

The following summary of information from the Department of Education guide *Accommodations: Assisting Students with Disabilities* (1999) is of help in addressing the ways that materials may be developed or changed to meet the needs of students of varied abilities:

Accommodations are changes that can be made in HOW students learn to assure that students with disabilities can participate as fully as possible in the general curriculum.

Accommodations:

- do not lessen achievement expectations.
- are a wide range of techniques and support systems that help students with disabilities work around any limitations that result from their disability. Examples include Braille textbooks or books on tape.
- may be needed by one student but frequently can also help other students in a classroom.
- “are made to the way students learn and how they are tested” (page 2).

Accommodations may be provided in five general areas:

- Instructional methods and materials
- Assignments and classroom assessments
- Time demands and scheduling
- Learning environment
- Use of special communication systems (page 2)

“Modifications are changes that can be made to WHAT students are expected to learn” (page 48). They are used primarily for students who cannot meet the Sunshine State Standards for their grade level and require a modified curriculum. Modifications change the goals and expectations for students.

Modifications may include:

- partial completion of program or course requirements
- curriculum expectations below age or grade level

- alternate assessment criteria
- alternate curricular goals (page 48)

ESE COURSES

While it is true that Florida will not have a separate call for ESE, and while it is true that many ESE students are included in our regular education programs, it is still also true that some students cannot meet the Sunshine State Standards for their grade level and require a modified curriculum. For that purpose Florida is also calling for Science: 6-8 and Science: 9-12, which are Exceptional Student Education courses. The course descriptions for these courses are highly detailed and descriptive and can be found on the web at

<http://www.firn.edu/doe/commhome/corguide.htm>.

K-12 Submissions and Reading in the Content Areas

In addition, materials must integrate with other areas of instruction by supporting the notion that students in grades K-2 are learning to read and in grades 3-12 students are reading to learn. Throughout each of these grade levels, student vocabulary development, cognitive reasoning, and reading acquisition are not yet fully developed. Additionally, reading is a complex process and highly utilized in content area assignments. Therefore, all submissions must integrate and carefully scaffold reading and literacy instruction to directly align with the corresponding text within each science lesson. Both reading and writing instruction and assignments must interface with science instruction. Just as reading is a tool for learning and evaluation, writing must also be integrated into any submission, as must mathematics, science, music, and the arts.

Since student use of both text materials and the reading process are expected, the instructional materials must systematically include both content and processes for reading within each of the three instructional stages related to text: the pre-reading, during reading, and post-learning stage of a lesson. In the pre-reading lesson, the instructional materials must provide word exercises and practice that directly align with those words that students will see in the subsequent text passages. To adequately prepare students for learning, reading, and comprehending content area vocabulary, the pre-reading exercises must carefully scaffold prior and new knowledge in at least but not limited to each of the following:

- Structural analysis of content area words
- Morphological approach to vocabulary development
- Explicit and systematic instruction of content area vocabulary
- Content area word mapping
- Meaningful dialogue and writing with new content area vocabulary

Following the pre-reading stage of a lesson, the instructional materials must provide teacher guidance to intersperse questioning techniques and strategies that follow concepts throughout the text passages. Since research indicates that inappropriate or inadequate chunking of text hinders student reading comprehension, the manner in which a teacher interacts with both the student and text during the reading process to construct meaning is extremely important. Therefore, the proposal must include such research-based practices as reciprocal teaching and questioning-the-author to effectively assist the teacher in dialogue that precipitates student construction of meaning.

By the conclusion of a content area lesson, students have been introduced to new word pronunciations and meanings, and they have read these same words in context of the content area passage to construct meaning. As the teacher

interacts with both the student and text in meaningful dialogue, what once was a new word begins to evolve into a concept. In order further clarify and refine this newly developed knowledge, both the content and processes of the post-reading stage of the lesson must align with that of the previous two stages. Without limitation, the post-reading portion of the lesson must provide additional opportunities for students to use what has been introduced in the pre-reading and during text reading stages of the lesson. Post-reading exercises can include the following:

- Graphic organizers such as Venn diagrams
- Semantic feature analysis
- Timeline projects
- Meaningful written responses to reading
- Ideas and available resources for extended reading
- Cooperative projects for further research and investigation
- Technology-based presentations

Development of specific literacy skills through Science requires explicit and systematic instruction in especially vocabulary and cognitive skills. Since the rate of reading development varies significantly between students at all grade levels, all submissions must accommodate variance in students' independent and instructional reading levels with the inclusion of differentiated instruction as part of the instructional plan. Ample opportunities for student practice of integrating new with prior knowledge are essential to the learning process.

Explicit instruction includes successful modeling of the following reading and thinking skills:

1. Listening skills (listening for meaning)
2. Vocabulary
3. Comprehension
 - Questioning strategies and techniques for meaningful student-teacher dialogue with text
 - Prediction
 - Main idea
 - Details
 - Sequence
 - Causal relationships
 - Comparison
 - Conclusions

- Reasoning strategies including deductive search strategies and use of reference materials
- Strategies for writing in response to reading
- Reading for information and pleasure

Brief, frequent practice activities and games must be provided through careful scaffolding to procure mastery of each of the processes and skills listed above. Activities must include alternatives for students with disparity in abilities and backgrounds providing teachers with variation to teach all students the required skills and content. Practice opportunities must reinforce and develop the following student abilities:

- Reading of passages
- Building schemata
- Questioning techniques
- Predicting events/effects within text
- Locating evidence/details within a passage
- Clarifying
- Summarizing
- Comparing
- Inductive thinking
- Deductive thinking
- Analysis
- Abstracting
- Drawing conclusions

Assessment Component

Assessments must be within the context of a course as opposed to a separate activity. They must include essays of appropriate length and follow-up activities that require thought at a higher level of Bloom's Taxonomy. Assessments must require students to find support for answers within expository text.

Publishers must include a variety of assessment tools that include, but are not limited to, multiple-choice and short-answer tests or quizzes, informal assessment checklists, rubrics for projects and activities, authentic applications and opportunities to use support from text in creating responses to questions. Other assessments may include opportunities to assess student knowledge via oral presentations, group projects, and/or visual displays.