



# **Report on the Review of the South Carolina Science Curriculum Standards**

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## **INTRODUCTION**

The South Carolina Education Accountability Act of 1998 establishes an accountability system for public education that focuses on improving teaching and learning so that students are equipped with a strong foundation in the four primary academic disciplines and a strong belief in lifelong learning. Academic standards are used to focus schools and districts toward higher performance by aligning the state assessment to those standards. The implementation of quality standards in classrooms across South Carolina is dependent upon systematic review of adopted standards, focused teacher development, strong instructional practices, and a high level of student engagement. Pursuant to Section 59-18-360 of the Education Accountability Act, the Education Oversight Committee and the State Board of Education are responsible for reviewing South Carolina's standards and assessments to ensure that high expectations for teaching and learning are being maintained.

“The State Board of Education, in consultation with the Education Oversight Committee, shall provide for a cyclical review by academic area of the state standards and assessments to ensure that the standards and assessments are maintaining high expectations for learning and teaching. All academic areas must be initially reviewed by the year 2005. At a minimum, each academic area should be reviewed and updated every four years. After each academic area is reviewed, a report on the recommended revisions must be presented to the Education Oversight Committee for its consideration. After approval by the Education Oversight Committee, the recommendations may be implemented. As a part of the review, a task force of parents, business and industry persons, community leaders, and educators, to include special education teachers, must examine the standards and assessments system to determine rigor and relevancy.”

In the fall of 2004, the cyclical review of the South Carolina Science Curriculum Standards was completed. This document presents recommendations for modifications to the 2000 South Carolina Science Curriculum Standards from the Education Oversight Committee. These recommendations were compiled under the advisement of three review teams: a national review team of science educators who worked with national or other state organizations; a parent, business, and community leaders team drawn from various geographical areas in South Carolina; and, a special educator team drawn from the various school districts in South Carolina. At the same time that these three committees were meeting, the State Department of Education assembled a team of science educators from around the state to also review the standards.

It is important to note that the adopted South Carolina Science Curriculum Standards represent the work of many educators, and that this review of the standards was undertaken to identify ways in which their work could be strengthened and supported. The Education Oversight Committee expresses its appreciation to those educators and commends their utilization of national source documents and their belief in the achievement of all students. The Education Oversight Committee intends to enhance the work of school level educators and, ultimately, to ensure that all students are knowledgeable and capable.

### **I. CYCLICAL REVIEW PROCESS**

The review of the South Carolina Science Curriculum Standards began with focus on the accomplishment of goals articulated in the Education Accountability Act (EAA) of 1998. The

legislation specifies: "The standards must be reflective of the highest level of academic skills with rigor necessary to improve the curriculum and instruction in South Carolina's schools so that students are encouraged to learn at unprecedented levels and must be reflective of the highest level of academic skills at each grade level." (Article 3, 59-18-300)

The Standard Operating Procedures for the Review of Standards (SOP) agreed upon by the State Department of Education (SDE) and the Education Oversight Committee (EOC) during the summer 2003 were followed for this review. A time line established during the summer outlined the time frame in which the required review teams were to review the standards adopted in early 2000 by the end of fall 2004. The SOP also outlines the steps to be taken to revise the current standards should the completion of the reviews indicate that revision is needed. A copy of the SOP is provided in the Appendix.

## **A. CRITERIA DESCRIPTIONS**

The South Carolina Science Curriculum Standards Review Process followed by all four review teams emphasized the application of the criteria addressing comprehensiveness/balance, rigor, measurability, manageability, and organization/communication. SDE representatives, district and university curriculum leaders, and EOC staff collaborated to identify the standards review criteria. Decisions on the criteria to be used were based on a comprehensive review of professional literature, and the goals for the standards review as specified in the Education Accountability Act of 1998. The identified criteria were each applied through the four review panels: (1) leaders in the discipline drawn from across the nation; (2) science educators from South Carolina's education community; (3) special educators from South Carolina's education community; and (4) parents, business representatives, and community leaders.

### **CRITERION ONE: COMPREHENSIVENESS/BALANCE**

The criterion category for Comprehensiveness/Balance is concerned with how helpful the South Carolina Science Curriculum Standards document is to educators in designing a coherent curriculum. The criterion is directed at finding evidence that the standards document clearly communicates what constitutes science content, that is, what all students should know and be able to do in science by the time they graduate. The criterion includes consideration of the following areas:

- The standards address essential content and skills of science.
- The standards are aligned across grades as appropriate for content and skills;
- The standards have an appropriate balance of the content and skills needed for mastery of each area in science; and
- The standards reflect diversity of content as appropriate for the subject area.

### **CRITERION TWO: RIGOR**

This criterion calls for standards that require students to use thinking and problem-solving skills that go beyond knowledge and comprehension. Standards meeting this criterion require students to perform at both national and international benchmark levels.

- Standards should focus on cognitive content and skills (not affect);
- Standards should be developmentally appropriate for the grade level;
- Standards should include a sufficient number of standards that require application of learning (application, analysis, synthesis, and evaluation);

- Standards should be informed by the content and skills in national and international standards; and,
- Standards should be written at a level of specificity that will best inform instruction for each grade level.

#### CRITERION THREE: MEASURABILITY

Knowledge and skills presented in the standards are assessable for school, district and state accountability. The primary element of measurability is:

- The content and skills presented in the standards should be assessable (are observable and demonstrable).

#### CRITERION FOUR: MANAGEABILITY

This criterion applies to instructional feasibility, that is, whether the complete set of science standards at a particular grade level can reasonably be taught and learned in the class time allotted during one year. A format commonly agreed upon is that approximately 80% coverage of the intended curriculum is reasonable, allowing for student mastery of content. The primary element of manageability is:

- The number and scope of the standards for each grade level should be realistic for teaching, learning, and student mastery within the academic year.

#### CRITERION FIVE: ORGANIZATION/COMMUNICATION

The Organization/Communication criterion category stipulates that the expectations for students are to be clearly written and organized in a manner understandable to all audiences and by teachers, curriculum developers, and assessment writers. Organization includes the following components:

- The content and skills in the standards should be organized in a way that is easy for teachers to understand and follow;
- The format and wording should be consistent across grades;
- The expectations for student learning should be clearly and precisely stated for each grade; and,
- The standards should use the appropriate terminology of the field but be as jargon free as possible.

### **B. PANEL MEMBERSHIP**

This cyclical review of the 2000 South Carolina Science Curriculum Standards was conducted by the following four panels during September, October, November and December 2004.

The national review team members consisted of recognized leaders in science education who have participated in the development/writing of national and state science standards. As national leaders on science standards all have reviewed a number of state science standards. Comments and recommendations included in this document are based in part on the *Science for All Americans: Project 2061* (1989), *National Science Education Standards* (1996), *Benchmarks for Science Literacy* (1993), *Atlas of Science Literacy* (2000), classroom experiences, knowledge of students' developmental stages and an understanding of expectations for student learning in the area of science. Members of the team received the materials for the review in November and participated in a telephone conference call that

provided them instruction in the process of the review. After an independent review period, the members of the panel met in Columbia (one participated via conference call) and over a two-day period produced through consensus a set of findings listed later in this document. Members of the National Review Panel included:

- Brenda Evans, North Carolina State University, formerly of the North Carolina Department of Public Instruction
- Linda Jordan, Tennessee Department of Education
- Lawrence Lerner, California State University, Long Beach
- Anne Courtney Miller, educational consultant, late of the University of North Carolina-Charlotte
- Harold Pratt, educational consultant, formerly Director, Division on K-12 Policy and Practice, Center for Science, Mathematics, and Engineering Education

Each school district was invited to recommend members of their respective communities to serve as members of the Science Parent/Business/Community Leader Review Task Force. Sixteen parents, business representatives and community leaders participated in the cyclical review process. Task force members attended a one-day information session in mid-October conducted by Paul Horne of the staff of the EOC and attended by Heyward Hickman, an Education Associate at SDE leading the science standards review process. The task force reconvened two weeks later and through discussion reached consensus on insights and specific recommendations about the 2000 South Carolina Science Curriculum Standards. Members of the task force included:

Horace Alexander, Anderson	Herbert Bynoe, Columbia	Richard Harrington, Florence
Ken Hermon, Camden	Beth Hinson, Dillon	Tom Jones, Myrtle Beach
Elaine Leonard, St. Matthews	Charles Rice, Anderson	Tammy Robinson, Hartsville
Ronald Smith, Winnsboro	Marvin Stevenson, Marion	Michael Svec, Greenville
Barbara Terry, Ridgeland	Lori Walter, Landrum	Beth Watkins, Goose Creek
Earl Wilson, Sumter		

Each school district also was invited to recommend members of their respective special education communities to the Science Special Education Review Task Force. Fifteen special education teachers and specialists participated in the cyclical review process. Task force members also attended a one-day information session in mid-October conducted by Paul Horne of the staff of the EOC. The task force reconvened two weeks later and through consensus provided insights and specific recommendations about the 2000 South Carolina Science Curriculum Standards. Members of the task force included:

Albertha Bannister, Sumter	Anna Barwick, Goose Creek	Jessica Blanton, Pendleton
Mary Bryant, Timmonsville	Barbara Clark, Hardeeville	Ann Cureton, Winnsboro
Rebecca Davis, Darlington	Paige Davis, Columbia	Margaret Demery, New Zion
Mary Ginn, Laurens	Darlene Higginbotham, Boiling Springs	Suzi Knebusch, Greenville
Dianne McLean, Columbia	Charles Pittman, Johnsonville	Pat Willis, Florence

SDE also gathered a group of science educators from around the state. This group consisted of classroom teachers from all grade levels, university professors, curriculum specialists, administrators, and SDE personnel. Meeting in September 2004, the state review team followed the same criteria as the three review teams conducted by the EOC. The summary of the SDE meeting is in preparation and will be made available to the EOC upon its completion.

## **C. THE STANDARDS DOCUMENT**

The 2000 South Carolina Science Curriculum Standards are organized by grade level and within each grade level in four major areas as follows:

Area I	Inquiry;
Area II	Life Science;
Area III	Earth Science; and
Area IV	Physical Science.

These content strands identify what students will learn in each grade, K-12. The standards document integrated several major areas of the national science standards into the four major content areas. The major areas integrated into Inquiry, Life Science, Earth Science and Physical Science were:

- History of Science.
- Nature of Science.
- Science in Social and Personal Perspectives.
- Technology.

Furthermore, the 2000 South Carolina Science Curriculum Standards document contains a bibliography and glossary.

## **II: ISSUES WITH THE STANDARDS PRIOR TO THE REVIEW**

Several issues with the 2000 South Carolina Science Curriculum Standards developed after the adoption of the standards in spring of 2000. The primary issue that developed after the release of the document was the identification of specific courses in which an end of course test would occur. Identification of the courses would have an impact on the standards document because the 2000 South Carolina Science Curriculum Standards presented the 9-12 standards in one section divided into the four major areas, not in concrete or specific courses. After discussion, SDE identified both physical science and biology as high school science courses that would have end of course assessments. Course standards were developed in the fall of 2001 and reviewed in the spring of 2002. The standards were adopted for use in science courses in the fall of 2002 and full implementation of the end of course assessments began during the 2003-2004 school year. The course standards for physical science and biology were included as part of this review.

The physical science course also has been identified as the course that all students must complete by the end of the sophomore year to meet the opportunity to learn aspect of the science portion of the exit exam. This decision has caused some concern as several school districts eliminated the physical science course several years ago in response to a decision by most of the colleges and universities in the state that physical science would not count as one of the laboratory science courses needed for admission. The physical science course developed by SDE is designed to be a laboratory science course, but to date the higher education community has not changed its position on physical science as a laboratory course.

## **III: FINDINGS**

The discussion below summarizes reviews of panel members, and presents consensus findings and examples for each criterion.

## **A: COMMENDATIONS**

1. The document contains standards that are aligned with the National Science Education Standards.
2. The standards are relatively free of jargon or education-eze.
3. The document is well-organized and easy to read.
4. The standards are rigorous and focus on cognitive skills and application of learning.
5. The standards are, for the most part, grade level appropriate.
6. The standards exhibit a clear intent for coherence of content across the grades.
7. The total standards document contains a proper balance between the four major content areas.

## **B: CONCERNS COMMON TO ALL REVIEW PANELS**

1. There are too many standards at each grade level and the presence of such a large number of standards also may lead to unrealistic expectations of students on locally and/or state administered assessments.
2. An introductory section for each grade level is needed to help define the actual focus for learning in each grade.
3. The document contains a number of redundant standards in grades K-8.
4. The organization of the standards suggests that a spiraled curriculum was intended. In some cases that intent is clear (e.g. the life cycles of organisms in grades K-3) and in other cases the intent is not as clear cut (the introduction of habitat in 4<sup>th</sup> grade, then omission of the topic again until 7<sup>th</sup> grade).
5. There are standards that require the information from other disciplines that have not been taught yet (use of perimeter in 3<sup>rd</sup> grade science, not taught in math until 4<sup>th</sup> grade).
6. There is uneven distribution of standards across the grade levels (there are 26 pages of standards in grades K-5, 37 pages of standards in grades 6-8, and 27 pages of standards in grades 9-12), repetition without growth across some content areas, and lack of development of expectations at some grade levels.
7. The reproductive system is omitted from the life science area of the standards. (The South Carolina health curriculum covers the reproductive system but the degree to which the health curriculum presents the scientific nature of the system is unclear).
8. In many cases, the document would more clearly communicate content expectations with greater specificity of the content to be addressed. (Ex. In grades K-3 the statement "properties of materials" is used in the physical science area; the way it is stated does not change across the grade levels. Which "properties" should be presented in which grade?)

## **C: ADDITIONAL FINDINGS OF THE NATIONAL REVIEW TEAM**

1. There are assessable standards at most grade levels, but many of the standards need to be stated more clearly to help the teacher know what will be assessed.
2. The standards need to be “unpacked” in order to provide the specific information the standard is meant to achieve. “Unpacking” involves defining the specific content that a standard is addressing and allows for greater clarity on the purpose of the standard.
3. There should be no more than four units of study in each of the elementary grades. The units of study are the primary topics the grade level will address in the standards. In grades K, 4 and 5 there are more than four units of study. Having only four per year would allow for one per nine weeks and allow for more in-depth coverage of content.
4. The number of topics covered in each grade should be reduced; the topics covered should be covered in greater depth.
5. The development of unifying concepts by grade level to identify the “overall picture” for the science content to be learned would help focus the standards for teachers and parents. The concepts could be presented in a flow chart somewhere in the document.
6. The physical science course standards should be reduced; there is too much material to be covered (essentially they are the physics and chemistry standards from the 9-12 standards). The course should focus on what students need to know and be able to do to move on to biology, chemistry and physics.
7. The standards contain a statement on investigation on each page; the purpose of the statement is unclear and it clutters the presentation of the standards.
8. The standards in grades 6-8 regarding physical science need to be reduced in light of the high school physical science course. The shifting of some material on physical science from middle school to the high school physical science course would reduce the overwhelming amount of content now expected of middle school teachers to cover.
9. The standards are often not age-appropriate in grades K-5. (Examples: the inquiry standards in grades K-2 expect students to understand the relationship between metric and U.S. customary units of measurement; 2nd grade asks students to classify the common physical properties of solids, liquids and gases).
10. There is a lack of understanding of how inquiry relates to the teaching of the content.
11. The role of technology, both as content and as an instructional tool, is unclear.
12. The document should be reviewed for factual and grammatical errors.
13. The ongoing implementation of these revised standards must be accompanied by changes in state assessment and professional development for both pre-service and active teachers.

## **D. ADDITIONAL FINDINGS OF THE PARENT/BUSINESS/COMMUNITY LEADER REVIEW PANEL**



1. The standards are verbose and unrealistic in the amount of material to be covered each year.
2. The standards are comprehensive and rigorous.
3. Teachers should be provided more information on the PACT test and items should be released for both teacher and parent review.
4. More specific detail on content is needed throughout the document in order for the teacher to know exactly what content should be taught in that grade level.
5. There is repetition of standards from grades K-12. The expected rigor of the standards at each grade level should be changed to eliminate duplication.
6. The glossary needs to be expanded.

#### **E. ADDITIONAL FINDINGS OF THE SPECIAL EDUCATION REVIEW PANEL**

1. The number of application standards needs to be increased to address diversity among the student population. Additional application standards could be provided by integrating the inquiry standards in with the content standards or by providing examples of activities to accomplish the inquiry standards in relation to the content.
2. The standards need more specificity, which could be provided through a curriculum document that would identify and perhaps prioritize content to help focus the standards for teachers dealing with multiple levels of students with disabilities.
3. The Office of Early Childhood should be involved in the development of standards for pre-K-3 and the Office of Exceptional Children should be involved in the development of activities to help with the implementation of the standards by teachers dealing with multiple levels of students with disabilities.
4. The relationship of the science standards to other disciplines, such as social studies, mathematics and English/language arts, should be identified.
5. The format of the standards needs to be changed to allow for greater clarity and made more teacher-friendly.
6. The textbooks and other materials used to implement the standards are often not available for parents to use at home.
7. The standards document needs a continuum of content added to clarify topics of instruction for teachers.
8. Teachers, especially special education teachers, need additional professional development on implementation of the standards. Pre-service teachers need the additional professional development as well.

## F: CRITERIA-BASED FINDINGS AND RECOMMENDATIONS

Listed below are the specific findings based on the criteria presented earlier in this report. Findings reached by the National Review Team are marked “N”, those reached by the Parent, Business, Community Leader Task Force are marked “P”, and those reached by the Special Educator Task Force are marked “S”. Findings reached by all three groups are marked “ALL”.

### 1. Comprehensiveness/Balance

Findings	Recommendations
<ul style="list-style-type: none"> <li>The standards, in general, reflect essential science content and skills but lack sufficient specificity to implement. <b>ALL</b></li> <li>There are too many standards. <b>ALL</b></li> <li>There is much repetition of standards across the grades. <b>ALL</b></li> <li>Overall, the document is comprehensive and the unifying concepts are seen as strengths. <b>ALL</b></li> <li>The standards on Life Science lack sufficient specific references to the human reproductive system. <b>ALL</b></li> <li>The standards are often not age appropriate in grades K-5. <b>N</b></li> </ul>	<ul style="list-style-type: none"> <li>Provide specifics for the standards that are too vague, including a curriculum document for each grade. <b>ALL</b></li> <li>Reduce the number of standards and cover identified standards in more depth. <b>ALL</b></li> <li>Spiral the standards to provide for less repetition but increased expectations. <b>ALL</b></li> <li>Look to the <i>Atlas of Science Literacy</i> to help identify the specifics for clarification of the national standards covered. <b>N</b></li> <li>Provide more specific references the human reproductive system, perhaps through use of <i>Atlas of Science Literacy</i>. <b>N</b></li> <li>Rearrange the standards in grades K-5 to address age appropriateness. <b>N</b></li> </ul>

### 2. Rigor

Comments	Recommendations
<ul style="list-style-type: none"> <li>Rigorous, though some standards are written in a manner that makes them not measurable <b>ALL</b></li> <li>There are too many standards for mastery. <b>ALL</b></li> <li>There is a lack of “applications” expectations. <b>ALL</b></li> <li>The standards are vague in many areas and not specific enough. <b>ALL</b></li> <li>Many of the standards are not age appropriate, especially in grades K-5. <b>ALL</b></li> </ul>	<ul style="list-style-type: none"> <li>Look to national standards document and the <i>Atlas of Science Literacy</i> for guidance. <b>N</b></li> <li>Eliminate redundant standards and increase expectations for those covered. <b>ALL</b></li> <li>Spiral standards and make sure all standards are age appropriate. <b>ALL</b></li> <li>Provide specific examples for standards in the form of specific content by using the <i>Atlas of Science Literacy</i>. <b>ALL</b></li> <li>Spiral standards and move inappropriate standards to another grade or delete. <b>ALL</b></li> </ul>

### 3. Measurability

Comments	Recommendations
<ul style="list-style-type: none"><li>As written, most statements are measurable; however, there is concern that many of the standards are not measurable as written because they are too broad or the verbs are not clear. <b>ALL</b></li></ul>	<ul style="list-style-type: none"><li>Ensure that all expectations are measurable. Provide more specificity and reduce the overall number of standards per grade. <b>ALL</b></li><li>Provide teachers with more information on PACT and release PACT items. <b>ALL</b></li></ul>

### 4. Manageability

Comments	Recommendations
<ul style="list-style-type: none"><li>Too many standards and expectations and not enough in-depth. <b>ALL</b></li><li>The four areas, as presented in K-8, are overwhelming, and teachers cannot implement all standards. <b>ALL</b></li><li>Overlap/repetition present from grade to grade. <b>ALL</b></li></ul>	<ul style="list-style-type: none"><li>Reduce number of topics per grade; decide on specific concepts to address in each grade; build on previously introduced concepts and skills instead of repeating earlier standards. <b>ALL</b></li><li>Reduce the number of overall topics per grade. <b>ALL</b></li><li>Eliminate overlap/repetition to allow for depth and streamline document. <b>ALL</b></li></ul>

### 5. Organization and Communication

Comments	Recommendations
<ul style="list-style-type: none"><li>Current organization adequate, but sheer number of standards makes some grade levels overwhelming. <b>ALL</b></li><li>Some standards are verbose, others are vague, still others have grammatical problems. Look closely at repetition. <b>ALL</b></li><li>Basic document needs supporting curriculum guide. <b>ALL</b></li><li>The glossary needs to be more useful. <b>ALL</b></li><li>Found to be jargon free; appropriate use of terminology; consistent wording across document. <b>ALL</b></li></ul>	<ul style="list-style-type: none"><li>Reduce the number of standards and units of study in grades K-8, remove repetition and limit units of study in K-5 to no more than four. <b>ALL</b></li><li>Provide specific examples of content to be covered in standards; edit standards for clarity, grammar and verbosity. <b>ALL</b></li><li>Develop a curriculum guide to accompany the standards and have it ready when the standards are published. <b>ALL</b></li><li>Bold words found in the glossary the first time they are used in the standards; move the glossary to right after the standards in the document. <b>S</b></li></ul>

### III. EOC RECOMMENDATIONS

The recommendations that are listed below are based on the detailed review of the South Carolina Science Curriculum Standards and are supported by the evidence and detailed comments that appear in the criteria-based and individual task force findings included in this report. A conversation with representatives from the SDE Office of Curriculum and Standards was held in early December and there was general agreement about these recommendations.

1. The new science standards document should limit the number of standards to be covered in each grade level, especially in grades K-5. The number of units of study should be limited to four in grades K-5.
2. The new standards in grades 9-12 should be organized by course or course area (Biology, Chemistry, Physical Science, Physics, etc.) rather than across the grade levels.
3. The number of standards for each grade level should be reduced to improve the manageability of the content, resulting in greater student learning.
4. The number of standards in the physical science course should be reduced; the standards in the course should focus on what students need to know and be able to do to move into biology and chemistry.
5. The standards need to be unpacked correctly, following the mapping guides provided in the *Atlas of Science Literacy*.
6. Content on the human reproductive system is omitted from the present document and should be included in the new document to complete the various body systems covered in the Life Science area.
7. There should be thorough development of several specific concepts and skills in each grade rather than superficial treatment of all concepts and skills across all grades.
8. The standards, especially in grades K-5, should be reviewed and rewritten as necessary to make sure the content and skills expected are age appropriate.
9. The revised science standards should include standards on the development of new energy sources.
10. Expand the glossary as needed to define content terms used in the standards.
11. Unifying concepts of the standards should be identified across the grade levels to identify the “big picture” for teachers and parents. The concepts should be presented in a flow chart somewhere in the document.
12. The ongoing implementation of these revised standards must be accompanied by:
  - Changes in state assessment so that what is assessed is aligned and “unpacked” with what is to be taught;
  - An intensive set of professional development activities for both teachers and administrators that broaden both awareness of and capacity to implement these standards;

- Widespread encouragement and support to adopt and purchase by the state, districts and the schools newer curriculum materials that are better aligned with the standards.
- An intensive effort to instruct pre-service teachers based on the contents of the standards.
- Development of supplemental/support documents and materials for use in the classroom to assist teachers in instructing students towards learning the standards; this would include a curriculum guide and an adaptability document for special education teachers.

# **APPENDIX**

# **Standard Operating Procedure for the Cyclical Review of the South Carolina PreK-12 Academic Standards and for the Development of New Academic Standards**

**Prepared by Staff of the South Carolina State Department of Education (SDE)  
and Staff of the South Carolina Education Oversight Committee (EOC)**

**May 2002  
(Revised June 2003)**

*Education Accountability Act of 1998 (EAA)*

## *Article 1 General Provisions*

Section 59-18-120. As used in this chapter:

(6) – ‘**Academic achievement standards**’ means statements of expectations for student learning.

## *Article 3 Academic Standards and Assessments*

**Section 59-18-300 - The State Board of Education is directed to adopt grade specific performance-oriented educational standards in the core academic areas of mathematics, English/language arts, social studies (history, government, economics, and geography) and science for kindergarten through twelfth grade and for grades nine through twelve adopt specific academic standards for benchmark courses in mathematics, English/language arts, social studies, and science...**

**The standards must be reflective of the highest level of academic skills with the rigor necessary to improve the curriculum and instruction in South Carolina’s schools so that students are encouraged to learn at unprecedented levels and must be reflective of the highest level of academic skills at each grade level.**

### **Purpose and Use of State-level Academic Standards\***

- Academic standards define the common knowledge and skills that all children should know and be able to do.
- Academic standards are clear, complete, and comprehensible for all audiences: educators, policy makers, and the general public.
- Academic standards serve as the basis for decision-making and educational policy development.
- Academic standards serve as the basis for an objective and reliable statewide assessment.
- Academic standards provide the foundation for the development of curriculum at the district level.

### **Generic Specifications for Academic Standards\***

- *The content and skills described in the standards reflect the recognized essential concepts*

- and basic knowledge of the discipline.*
- *The standards are rigorous (that is, both demanding and precise) and require students to apply, analyze, synthesize, and evaluate.*
- The standards are clear, jargon free, and appropriate for each grade level.
- *The standards are written at a level of specificity that will best inform instruction, neither so narrow as to be trivial nor so broad as to be meaningless.*
- The standards reflect an appropriate balance of content and skills.
- *The format makes clear how content and skills develop across grades (vertical alignment).*
- The number and scope of the standards for each grade level is manageable for teaching, learning, and student mastery within an academic year.
- The standards are aligned with national and world-class standards.
- The standards provide the basis for the development of statewide assessments.

\*Based on criteria from the Fordham Foundation, American Federation of Teachers, and the EOC for the review and revision of standards.

## **Process for Cyclical Review and Update of K–12 Academic Standards**

**Section 59-18-360\*** - The State Board of Education, in consultation with the Education Oversight Committee, shall provide for a cyclical review by academic area of the state standards and assessments to ensure that the standards and assessments are maintaining high expectations for learning and teaching. All academic areas must be initially reviewed by the year 2005. At a minimum, each academic area should be reviewed and updated every seven years. After each academic area is reviewed, a report on the recommended revisions must be presented to the Education Oversight Committee for its consideration. After approval by the Education Oversight Committee, the recommendations may be implemented. As a part of the review, a task force of parents, business and industry persons, community leaders, and educators, to include special education teachers, must examine the standards and assessment system to determine rigor and relevancy.

\*On June 5, 2003, the General Assembly passed Senate Bill 3361 to amend Section 59-18-360 of the 1976 Code, as added by Act 400 of 1998. Bill 3361 changed the review cycle from four years to seven years.

SDE and EOC staff will determine jointly a cyclical review schedule for preK–12 (current) academic standards in accordance with the South Carolina law. (See suggested review schedule on page 10.) When the time arrives for the cyclical review of a discipline, the following steps will occur.

### **Review of Standards**

1. SDE and EOC staff will establish jointly a schedule of activities.
2. SDE will identify a state panel to review the standards. The panel will consist of state experts in standards, testing, early childhood, special education, and the discipline under review.
3. EOC staff will identify a review panel from national educators and/or education groups to include experts in assessment.
4. EOC staff will identify a review panel from South Carolina parents, community leaders and business leaders.
5. EOC staff will identify a review panel of South Carolina special education teachers.



6. The three EOC panels and the state panel will meet concurrently to review the current standards in question and report recommendations for needed revisions. SDE and EOC staff will be invited to all review team meetings held by the other agency.
7. EOC staff will prepare a report on the review of the standards under review by the three external panels. SDE will prepare a report on the review of the standards by the state panel and submit this report to the EOC.
8. The report, including recommendations for changes to the standards document, will be presented to the Academic Standards and Assessments Subcommittee (ASA) of the EOC for approval.
9. Upon approval by the ASA subcommittee, the report and its recommendations will be presented to the full EOC for approval.
10. Upon approval by the full EOC, the report and its recommendations will be forwarded to the Superintendent of Education.

### **Revision of Standards**

11. SDE staff will identify an external organization (*e.g.*, SREB, SERVE, professional association, etc.) to develop a draft of the standards under review based on the EOC criteria, the State Panel report, and the EOC Cyclical Review Report. SDE staff will develop the pre-kindergarten standards.
12. SDE staff will coordinate review/revision of the draft in consultation with the Offices of Curriculum and Standards, Special Education, Assessment, Technology, Early Childhood, and others, as appropriate.
13. SDE will prepare a field review version of the updated draft to include pre-kindergarten standards.
14. Draft of the standards will be disseminated for a 45–60-day field review period to South Carolina educators. The draft will be disseminated through the SDE Web site and through presentations to discipline-based focus groups, EOC led panels, etc.
15. SDE staff will provide an update on the progress of the review to the ASA subcommittee of the EOC.
16. Upon completion of the field review, SDE staff will coordinate any needed changes to the draft.
17. Revised draft will be edited by the SDE internal editor to meet the guidelines in the *State Department Manual of Style*.

### **Approval of Standards**

18. Revised academic standards will be submitted to the State Board of Education for first reading approval.
19. Revised academic standards will be submitted to the ASA subcommittee of the EOC for approval.
20. Upon approval by the ASA subcommittee, the revised academic standards will be submitted to the full EOC for approval.
21. Upon approval by the full EOC, the revised academic standards will be placed on the SDE Web site and submitted to the SBE for second reading approval.
22. Newly adopted academic standards will be disseminated to South Carolina school personnel and school districts and placed on the SDE Web site.

## Schematic Outline of the Schedule Established by the SDE and EOC for the Cyclical Review and Update of the PreK–12 Academic Standards

