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# A Guide for Parents and Families About What Your EIGHTH GRADER Should Be Learning In School This Year

SC EDUCATION OVERSIGHT COMMITTEE

This guide shares important information about the South Carolina Academic Standards. These standards outline state requirements for your child's learning program and what students across the state should be able to do in certain subjects.

A good educational system provides many tools that help children learn. Academic standards are useful for making sure:

- teachers know what is to be taught;
- children know what is to be learned; and
- parents and the public can determine how well the concepts are being learned.

The following pages provide information about the South Carolina Academic Standards for mathematics, English language arts, science and social studies for Eighth Grade. The information can help you become familiar with what your child is learning at school and may include activities to reinforce and support your child's learning, selected book titles for additional reading, and Web site addresses for extended learning. Because sites change, please preview before students begin work. This version does not include every standard taught in Eighth Grade. The complete South Carolina Academic Standards for each subject area can be found at www.ed.sc.gov.

The state-developed test, Palmetto Assessment of State Standards (PASS), is based on the South Carolina Academic Standards. Sample PASS Test items can be viewed online at www.eoc.sc.gov/informationforeducators/TestItems.htm.

## South Carolina Academic Standards

Here are seven key reasons parents should be in the know about the academic standards:

1. Standards set clear, high expectations for student achievement. Standards tell what students need to do in order to progress through school on grade level.
2. Standards guide efforts to measure student achievement. Results of tests (PASS) on grade-level academic standards show if students have learned and teachers have taught for mastery.
3. Standards promote educational equity for all. Instruction in every school in the state will be based on the same academic standards.
4. Standards help parents determine if children in South Carolina are taught the same subject content as children across the nation. South Carolina Academic Standards have been compared with and matched to national standards as well as standards of other states to make sure that they are challenging.
5. Standards inform parents about the academic expectations for their child. Standards give parents more specific information for helping their child at home. Parents no longer have to guess the type of help their child needs to do better in school.
6. Standards enable parents to participate more actively in parent/teacher conferences. Knowledge of the academic standards helps parents understand more about what their child is learning and what they can do at each grade level. Parents are able to have conversations with teachers about student progress in specific areas and understand more completely the progress of their child.
7. Standards help parents see how the current grade level expectations are related to successive years' expectations. Parents are able to see how their child's knowledge is growing from one year to the next.

### WEB RESOURCES

South Carolina Department of Education (SCDE):
www.ed.sc.gov

South Carolina Education Oversight Committee (EOC):
www.eoc.sc.gov

South Carolina Education Television (SCETV):
www.knowitall.org

Sample PASS Test Items:
www.eoc.sc.gov/informationforeducators/TestItems.htm

# ENGLISH LANGUAGE ARTS

Students should be able to:

## Reading

- Explain how a paradox is a statement that makes a contradiction, but has a bit of truth in it
- Understand the effect of allusion on the meaning of a story
- Write, act, and make presentations in response to reading
- Make inferences and draw conclusions by comparing and contrasting information from one or more texts
- Discuss how an author can reveal a preference about a subject through word choice or the inclusion or exclusion of relevant information
- Understand the use of propaganda techniques
- Read independently for various reasons
- Understand that subtle meanings of words can affect the meaning of text
- Determine the meaning of words by using knowledge of their Greek or Latin parts

## Writing

- Use planning strategies to organize writing
- Use a variety of sentence types and lengths to make writing interesting
- Use correct grammar, punctuation, and spelling in writing
- Improve writing by editing and revising
- Create reports and letters of request, inquiry, or complaint
- Write stories (for example, memoirs), about important personal relationships
- Create persuasive pieces (for example, editorials, essays, or speeches) that support a clearly stated opinion

## Research

- Use direct quotations, paraphrases, or summaries to incorporate information from multiple sources into writing or speaking
- Use organizational strategies to prepare information for written or oral presentations
- Select graphics to enhance written or oral presentations from print or electronic sources
- Create research projects

## Activities

- Read and discuss the same book your child is reading
- Take your child to a movie or play and draw conclusions about it
- Discuss movies, plays, or books by comparing and contrasting them
- Have your child read editorials in the newspaper and determine the writer's bias or slant
- Have your child select a topic he/she is interested in learning more about. Read a fiction and nonfiction book about the topic. After reading both books, discuss how the information is the same or different.
- Identify paradoxes when watching television, movies or when listening to the radio
- Challenge your child. See who can identify more paradoxical statements in reading—you or your child.
- Look for allusions when watching television or a movie
- Encourage your child to write a letter to the manufacturer of something he/she owns to complain, ask a question, or gather more information
- Discuss controversial issues with your child. Ask questions that make him/her defend his position.
- Read memoirs of great people's lives with your child. Evaluate the relationships described in the book to better understand the person.
- Have your child write a memoir
- When your child asks your permission for something, ask him to create a short persuasive speech that supports his/her request

## Books

- Bauer, Joan. *Rules of the Road*
- Draper, Sharon. *Tears of a Tiger*
- Ewing, Lynne. *Drive-By*
- Fletcher, Susan. *Shadow Spinner*
- Hesse, Karen. *Out of the Dust*
- Ingold, Jeanette. *Pictures, 1918*
- Mikaelsen, Ben. *Touching Spirit Bear*
- Myers, Walter Dean. *Slam*
- Philbrick, Rodman. *Freak the Mighty*
- Spinelli, Jerry. *Stargirl*

## Web Sites

- Surfing The Net with Kids – http://www.surfnetkids.com
- United States Department of Education – http://www2.ed.gov/parents
- Internet Public Library – http://www.ipl.org/div/kidspace/
- The Write Source – http://www.thewritesource.com

# MATHEMATICS

Students should be able to:

## Numbers and Operations

- Apply an algorithm (method to solve a problem) to add, subtract, multiply, and divide integers (the set of whole numbers and their opposites)
- Understand the concept of irrational numbers (numbers that cannot be written as fractions, for example, the square root of two is a decimal that never ends nor repeats)
- Apply procedures to approximate square and cube roots (see last bullet under "Activities")

## Algebra

- Apply procedures to solve multi-step equations
- Classify relationships between two variables as either linear or nonlinear
- Identify the coordinates of the x- and y-intercepts of a linear equation
- Understand slope (the measure of the steepness of a line as you look at it from left to right) as a constant rate of change

## Geometry

- Apply the Pythagorean theorem
- Use ordered pairs, equations, intercepts, and intersections to locate points and lines in a coordinate plane
- Apply dilation (magnification) on a square, rectangle, or right triangle in a coordinate plane and analyze the effect

## Measurement

- Apply strategies and formulas to determine volume of three-dimensional shapes
- Use multi-step unit analysis to convert between and with the U.S. Customary System and the metric system

## Data Analysis and Probability

- Apply procedures to compute the odds (the ratio of favorable outcomes to unfavorable outcomes) of a given event

## Activities:

Have your child:

- Use sales papers to determine the cost for a different number of items than those listed in the ad. For example, if the item is on sale at 5 items for $6.97, what would the cost of 12 items be?
- Draw a shape such as a square, triangle, or trapezoid on grid paper. You should magnify the shape by some amount (2 times as large, 3 times as large, etc.). Have them draw the magnified shape and compare the perimeter and area of the two shapes.
- Pretend to be in the following situation: locked out of a house with an open window 25 feet above the ground. A ladder must be used, but there's a flowerbed along the edge of the house, so the ladder must be placed 9 feet from the house. Use the Pythagorean Theorem to determine how long the ladder must be to reach the window.
- Record the speed in miles per hour of a car traveling on the highway using the speedometer. Convert the miles per hour into feet per second.
- Approximate $\sqrt{66}$ between two whole numbers using the following strategy. Recall the nearest perfect square root less than and the nearest perfect square root greater than the number $\sqrt{64}$ and $\sqrt{81}$. Since $\sqrt{64} = 8$ and $\sqrt{81} = 9$, then must equal a little bit more than 8. Repeat with different numbers.

## Books:

- *Algebra To Go.* (Published by Great Source Education Group; 1-800-289-4490)
- Blatner, David. *The Joy of* $\pi$
- DiSpezio, Michael A. *Critical Thinking Puzzles*
- Gavin, M. Katherine, Carole E. Greenes, Carol R. Findell and Linda Jensen. *Awesome Math Problems for Creative Thinking*
- Peterson, Ivars and Nancy Henderson. *Math Trek: Adventures in the MathZone*
- Stickels, Terry. *Are You As Smart As You Think?*

## Web Sites:

- www.figurethis.org – Challenging and engaging activities for middle school students
- www.math.com – Site has on-line calculators, games, and tutoring assistance

# SCIENCE

Students should be able to:

## Inquiry

- Design a controlled scientific investigation
- Recognize the importance of a systematic process for safely and accurately conducting investigations
- Construct explanations and conclusions from interpretations of data obtained during a controlled scientific investigation
- Generate questions for further study on the basis of prior investigations
- Explain the importance of and requirements for replication of scientific investigations
- Use appropriate tools and instruments (including convex lenses, plane mirrors, color filters, prisms, and slinky springs) safely and accurately when conducting a controlled scientific investigation
- Use appropriate safety procedures when conducting investigations

## Earth's Biological History

- Explain how biological adaptations of populations enhance their survival in a particular environment
- Summarize how scientists study Earth's past environment and diverse life-forms by examining different types of fossils
- Explain how Earth's history has been influenced by catastrophes that have affected the conditions on Earth and the diversity of its life-forms
- Recognize the relationship among the units —era, epoch, and period— into which the geologic time scale is divided
- Illustrate the vast diversity of life that has been present on Earth over time by using the geologic time scale
- Infer the relative age of rocks and fossils from index fossils and the ordering of the rock layers
- Summarize the factors, both natural and man-made, that can contribute to the extinction of a species

## Earth's Structure and Processes in Earth System

- Summarize the three layers of Earth —crust, mantle, and core— on the basis of relative position, density, and composition
- Explain how scientists use seismic waves —primary, secondary, and surface waves— and Earth's magnetic fields to determine the internal structure of Earth
- Infer an earthquake's epicenter from seismographic data
- Explain how igneous, metamorphic, and sedimentary rocks are interrelated in the rock cycle
- Summarize the importance of minerals, ores, and fossil fuels as Earth resources on the basis of their physical and chemical properties
- Explain how the theory of plate tectonics accounts for the motion of the lithospheric plates, the geologic activities at the plate boundaries, and the changes in landform areas over geologic time
- Illustrate the creation and changing of landforms that have occurred through geologic processes
- Explain how earthquakes result from forces inside Earth
- Identify and illustrate geologic features of South Carolina and other regions of the world through the use of imagery and topographic maps

## Astronomy-Earth and Space Systems

- Summarize the characteristics and movements of objects in the solar system
- Summarize the characteristics of the surface features of the Sun: photosphere, corona, sunspots, prominences, and solar flares
- Explain how the surface features of the Sun may affect Earth
- Explain the motions of Earth and the Moon and the effects of these motions as they orbit the Sun
- Explain how the tilt of Earth's axis affects the length of the day and the amount of heating on Earth's surface, thus causing the seasons of the year
- Explain how gravitational forces are influenced by mass and distance
- Explain the effects of gravity on tides and planetary orbits
- Explain the difference between mass and weight by using the concept of gravitational force
- Recall the Sun's position in the universe, the shapes and composition of galaxies, and the distance measurement unit (light year) needed to identify star and galaxy locations
- Compare the purposes of the tools and the technology that scientists use to study space

## Forces and Motion

- Use measurement and time-distance graphs to represent the motion of an object in terms of its position, direction, or speed
- Use the formula for average speed, $v = d/t$, to solve real-world problems
- Analyze the effects of forces on the speed and direction of an object
- Predict how varying the amount of force or mass will affect the motion of an object
- Analyze the resulting effect of balanced and unbalanced forces on an object's motion in terms of magnitude and direction
- Summarize and illustrate the concept of inertia

## Waves

- Recall that waves transmit energy, but not matter
- Distinguish between mechanical and electromagnetic waves
- Summarize factors that influence the basic properties of waves
- Summarize the behaviors of waves
- Explain hearing in terms of the relationship between sound waves and the ear
- Explain sight in terms of the relationship between the eye and the light waves emitted or reflected by an object
- Explain how the absorption and reflection of light waves by various materials result in the human perception of color
- Compare the wavelength and energy of waves in various parts of the electromagnetic spectrum

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# SOCIAL STUDIES

Students should be able to:

## South Carolina: One of the United States

- Summarize the culture, political systems, and daily life of the Native Americans of the Eastern Woodlands
- Categorize events according to the ways they improved or worsened relations between Native Americans and European settlers
- Summarize the history of European settlement in the province of Carolina
- Explain the growth of the African-American population during the colonial period and the significance of African Americans in the developing culture (Gullah for example) and economy of South Carolina
- Summarize the significant changes to South Carolina's government during the colonial period
- Explain how South Carolinians used resources to gain economic prosperity
- Summarize the involvement of South Carolina in the French-British colonial rivalry
- Explain the interests and roles of South Carolinians in the events leading to the American Revolution
- Compare the perspectives and roles of different South Carolinians during the American Revolution
- Summarize the course and key conflicts of the American Revolution in South Carolina and its effects on the state
- Summarize events related to the adoption of South Carolina's first constitution, the role of South Carolina, and its leaders in the Continental Congress and the ratification of the United States Constitution
- Explain the economic and political tensions between the people of the Upcountry and the Lowcountry of South Carolina
- Explain the importance of agriculture in antebellum South Carolina
- Explain the impact of key events leading to South Carolina's secession from the Union
- Draw conclusions about the causes of sectionalism
- Compare the attitudes of the unionists, cooperationists, and secessionists in South Carolina and summarize why the South Carolina secession convention in 1860 voted unanimously to secede from the Union
- Compare the military strategies of the North and South with regard to specific events and geographic locations in South Carolina
- Compare the effects of the Civil War on daily life in South Carolina
- Explain the purposes of Reconstruction with attention to problems facing the South
- Summarize Reconstruction in South Carolina and its effects on daily life in South Carolina
- Summarize the events and the process that led to the ratification of South Carolina's constitution of 1868
- Explain how events during Reconstruction at first improved opportunities for African Americans but created a backlash that, by the end of Reconstruction, negated the gains African Americans had made
- Summarize the successes and failures that occurred in South Carolina during Reconstruction
- Summarize the conditions in South Carolina following the end of Reconstruction
- Compare key aspects of the Populist movement in South Carolina
- Summarize the changes that occurred in South Carolina agriculture and industry during the late nineteenth century
- Compare the migration patterns within South Carolina and in the United States as a whole in the late nineteenth century
- Summarize the costs of natural disasters and wars that occurred in South Carolina or involved South Carolinians in the late nineteenth century
- Explain the significance that the increased immigration into the United States in the late nineteenth century had for the state of South Carolina
- Summarize the progressive reform movement in South Carolina
- Explain the impact of World War I on South Carolina
- Summarize the situation in South Carolina following World War I
- Explain the causes and the effects of changes in South Carolina culture during the 1920s
- Explain the effects of the Great Depression and the lasting impact of New Deal programs on South Carolina
- Summarize the significant aspects of the economic growth experienced by South Carolina during and following World War II
- Provide examples of the expanding role of tourism in South Carolina's economy
- Explain causes and effects of agricultural decline in South Carolina
- Explain the factors that influenced the economic opportunities of African American South Carolinians during the latter twentieth century
- Explain the economic impact of twentieth century events on South Carolina

## Activities:

Have your child:

- Label sites of Native American lands, important settlements, colonies, and battles on a map. Discuss the importance of these sites in South Carolina history.
- Tour the state capital in Columbia to learn about state government, including the adoption of South Carolina's first state constitution
- Visit and interview a state member of Congress or the General Assembly about current issues affecting South Carolina's economic development
- Visit historical museums such as the State Museum to see how South Carolina society developed and changed over the years
- Visit Native American, colonial settlement, Revolutionary War, and Civil War sites and memorials within South Carolina
- Watch historical videos or television programs on Native Americans, colonial settlement, Revolutionary War, and the Civil War. Discuss how content shown in programs are related to historical topics being studied in school
- Read local and state newspapers. Look for articles related to tourism and its role in South Carolina's economy.
- Visit Charleston and the downtown area to see the influence of the English and Irish on its society and architecture

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# SCIENCE Continued

## Activities:

### Have your child:

- Research an extinct plant or animal and why or how it became extinct
- Create a fossil collection. Fossils can often be found on beaches and in quarries.
- Make a model of the solar system, a volcano, or the Earth's layers
- Go sky gazing to observe and discuss the phases of the moon, changes in the position of constellations from season to season and watch for meteors and comets
- Start a rock or mineral collection and create a field guide to identify the samples
- Conduct Internet research or visit the local library and find the various ways that energy waves affect us every day
- Design and launch a model rocket

## Books:

- Carruthers, M. W. *The Moon*
- Downs, Sandra. *Earth's Fiery Fury*
- Fullick, A. *Under Pressure: Forces*
- Grace, K. *Forces of Nature: The Awesome Power of Volcanoes, Earthquakes, and Tornadoes*
- Heinlein, Robert. *Have Spacesuit - Will Travel*
- Kittinger, Jo. *Stories in Stone: The World of Animal Fossils*
- Lafferty, P. *Eyewitness: Force and Motion*
- Maslin, Mark. *Restless Planet Series: Earthquakes*
- Ride, S. and T. O'Shaughnessy. *Exploring Our Solar System*
- Sauvain, P. *Motion (The Way It Works)*
- Spangenburg, R. and K. Moser. *A Look at the Sun*
- Stille, D. *Waves: Energy on the Move*
- Sussman, Art. *Dr. Art's Guide to Planet Earth*

## Web Sites:

- AAAS Science Netlinks - www.sciencenetlinks.com
- Franklin Institute - www.fi.edu
- Force and Motion - www.physics4kids.com
- Virtual Solar System - www.nationalgeographic.com/solarsystem

# SOCIAL STUDIES Continued

## Books:

- King, David C. *First Facts About U.S. History.*
- McKissack, Patricia C. and Fredrick McKissack. *Rebels Against Slavery*
- Patrick, Diane. *The New York Public Library Amazing African-American History*
- Swagert, Christine. *Black Crows and White Cockades*
- Thomas, David Hurst and Lorann Pendleton. *Exploring Native North America*

## Web Sites:

- American Local History Network - www.alhn.org
- The Gilder Lehrman Institute of American History - www.gilderlehrman.org
- Library of Congress American Memory - http://memory.loc.gov/
- National Archives and Records Administration - www.nara.gov
- North by South - www.northbysouth.org
- Public Broadcast System (PBS) - www.pbs.org
- Smithsonian National Museum of American History - www.americanhistory.si.edu

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