Curriculum Standards

Language Arts, Grade 7 through 12

W1 The student will apply a process approach to writing.

W2 The student will write for a variety of purposes.

W3 The student will respond to texts written by others.

W4 The student will create legible texts.

C1 The student will use speaking skills to participate in large and small groups in both formal and informal situations.

C2 The student will use listening skills to comprehend and analyze information he or she receives in both formal and informal situations.

C3 The student will comprehend and analyze information he or she receives from nonprint sources.

R1 The student will integrate various cues and strategies to comprehend what he or she reads.

R3 The student will use a knowledge of semantics, syntax and structural analysis to determine the meaning of unfamiliar words and read texts with understanding.

RS1 The student will select a topic for exploration.

RS2 The student will gather information from a variety of sources.

RS3 The student will use a variety of strategies to prepare and present selected information.

Sciences, Grades 7 and 8

IA7b Create drawings, diagrams, charts, tables, and graphs to communicate data.

IA7c Interpret and describe patterns of data on drawings, diagrams, charts, tables, graphs and maps.

7–**IB2b** / 8–**IC2b** Communicate ideas with drawings and simple models.

7–**IC2a /** 8–**ID2a** Describe examples of contributions people have made to science and technology. (H, N)

7–**IIIA4c** Analyze ways air pollution can be reduced.

7–**IIIA5b** Describe ways that humans may be influencing or contributing to global warming. (P)

7–**IIIA6a** Describe how sunlight, through photosynthesis, is transferred by producers into chemical energy.

7–**IIIA7e** Distinguish between renewable and nonrenewable resources and examine the importance of their conservation. (P)

7–**IIIA7f** Evaluate the effects of human population on air, water and land. (P)

7–**IIIA7g** Analyze the benefits of solid waste management (reduce, reuse, recycle). (T, P)

Physical Science, Grade 9 through 12

I Inquiry

II Physical Science (Chemistry)

- **IIB6a** Demonstrate an understanding of how carbon atoms bond to one another as simple hydrocarbons.
- **IIB6b** Describe the formation of polymers.
- **IIB6d** Determine the uses of polymers in everyday life.
- **IIC1c** Explain the sources and environmental effects of some inorganic and organic toxic substances, such as heavy metals and PCBs. (P)
- **IIC3a3** Explain how acid rain is formed and discuss its effects on the environment. (P)
- **IIC3a4** Demonstrate an understanding of the significance of pH as related to consumer products.
- **IIC4b** Apply reaction rate concepts to real-life applications such as food spoilage, storage of film and batteries, digestive aids, and catalytic converters. (P, T)

III Physical Science (Physics)

- **IIIA4b** Compare and contrast the environmental impact of power plants that use fossil fuels, water or nuclear energy to produce electricity. (P, T)

Science, Grade 9 through 12

I Inquiry

II Life Science

- **IID1a** Analyze how organisms interact with the biosphere as part of the geochemical cycles (carbon, nitrogen, phosphorous, and water cycles).
- **IID2b** Assess the value of the carbon cycle to the flow of energy through the ecosystems.
- **IID3b** Evaluate how interrelationships and interdependencies of living things contribute to the homeostasis of ecosystems.
- **IID4b** Give examples and explain how limiting factors such as water, food, oxygen, and living space play a role in the stability of ecosystems.
- **IID4e** Evaluate dynamic equilibrium as a result of checks and balances within populations, communities and ecosystems.
- **IID5a** Identify events that lead to awareness of environmental concerns such as fish kills, destruction of the ozone layer, global warming, and decline of the bald eagle. (H)
- **IID5d** Assess the consequences of acid rain on ecosystems. (P)
- **IIE4b** Analyze energy in biological systems in terms of transformation, conservation and efficiency.

III Earth Science

- **IIIB1b** Analyze how the use and recovery of fossil fuels impacts the environment. (T, P)

IIIB1c Evaluate the importance of limiting consumption of nonrenewable resources. (T, P)

IV Physical Science (Chemistry)

IVB6b Describe polymers as molecules bonded together.

IVB6c Determine uses of aromatic compounds and polymers in everyday life. (P)

IVC1b Describe how metabolism is an interrelated collection of chemical reactions.

IVC2c Classify reactions as energy-absorbing (endothermic) or energy-releasing (exothermic) based on temperature measurements.

IVC4b Analyze the effects of temperature, particle size, stirring, concentration, and catalysts on reaction rates.

IV Physical Science (Physics)

IVB2a Classify energy types as potential, kinetic or electromagnetic.

IVB4a Compare and contrast the environmental impact of power plants that use fossil fuels, water or nuclear energy to produce electricity. (P, T)

Biology, Grade 9 through 12

I Inquiry

II Biology

IID1a Demonstrate an understanding of how organisms interact with the biosphere as part of the geochemical cycles (e.g., carbon, nitrogen, phosphorous, water cycles).

IID1b Identify important nutrient cycles and evaluate how they affect ecosystems.

IID2a Demonstrate an understanding of the flow of energy, beginning with the sun, through various trophic levels.

IID2b Assess the value of the carbon cycle to the flow of energy through the ecosystems.

IID3a Relate the concepts of cooperation and competition to organisms within an ecosystem.

IID3b Evaluate how interrelationships and interdependencies of living things contribute to the homeostasis of ecosystems.

IID3c Demonstrate an understanding of how living things maintain their high level of order at the expense of increasing the disorder of their physical surroundings.

IID4b Give examples and explain how limiting factors such as water, food, oxygen, and living space play a role in the stability of ecosystems.

IID4e Evaluate dynamic equilibrium as a result of checks and balances within populations, communities and ecosystems.

IID5a Identify events that lead to awareness of environmental concerns such as fish kills, destruction of the ozone layer, global warming, and the decline of the bald eagle. (H)

IID5e Assess the consequences of acid rain on ecosystems. (P)

IIE2a Analyze bond energy as it relates to food molecules.

IIE2b Discuss the importance of ATP and how it is cycled.

IIE4a Demonstrate an understanding of the dynamics of energy and entropy as they apply to biological systems.

IIE4b Analyze energy in biological systems in terms of transformation, conservation and efficiency.

U.S. and South Carolina Studies, Grade 8

IV Production, Distribution and Consumption: Economics

Social Studies — Economics, Grade 9 through 12

ECON-1 The student will demonstrate an understanding of how scarcity and choice impact the economic activity of individuals, families, communities, and nations.

ECON-2 The student will demonstrate an understanding of markets and the role of supply and demand in determining price and resource allocation.

ECON-8 The student will demonstrate an understanding of the principles of trade and economic development.

Standards for Agricultural and Environmental Sciences, Grade 9 through 12

A1 Identify and explain the major areas of agricultural and environmental sciences and career opportunities available to a student preparing for agricultural and environmental sciences occupations.

B4 Explain the impact of soil management on the environment and economy of our state.

E1 Name and explain at least three reasons for man to conserve natural resources.

F11 List the basic steps in problem solving/decision making.

Key:

H=History of Science
N=Nature of Science
P=Science in Social and Personal Perspectives
T=Technology — major categories of the National Science Education Standards that have been integrated in content areas.

Some text contained herein is excerpted directly from the National Science Education Standards.

The term *investigate* is defined as an opportunity for students to explore questions and develop content knowledge by making observations and inferences, collecting and interpreting data, and drawing tentative conclusions through the use of active learning strategies.

All curriculum standards for the state of South Carolina may be viewed online at myscschools.com/offices/cso.