

**Appendix A**  
**FCAT Science Topics**  
***Sunshine State Standards, Grades 3-5***

Nature of Matter

Properties of Matter

tools of comparison

states, weights, combinations

organizations

Energy

Forms and Transformation of Energy

Heat

Energy and Uses

Force and Motion

Motion and Wave

Forces of Gravity, Magnetism,  
Electricity

Processes That Shape Earth

Substances and Processes in the  
Lithosphere, Atmosphere, Hydrosphere,  
and Biosphere

Recycling

Interaction and Organization of the  
Solar System

Patterns of Structure and Function of  
Living Things

Process and Importance of Nature  
and Nurture

Interaction of Living Things

Nature of Living Things

Nature of Science

Scientific Process of Solving Problems

**Appendix A**  
**FCAT Science Topics**  
***Sunshine State Standards, Grades 6–8***

Nature of Matter

Properties of Matter

- ways substances differ
- weight and mass
- temperature
- movement of atoms
- difference between physical and chemical change
- volume and mass

Basic Principles of Atomic Theory

- particles and waves
- general properties of the atom

Forms of Energy

- energy as a constant
- forms of energy from the Sun
- energy conversions
- thermal energy
- the properties of waves

Interaction of Matter, Energy, and Force

- reduction in the amount of useful energy
- fossil fuels

Motion

- description of motion of an object
- vibrations in materials

Forces and Effects

- forces at a distance
- ability of forces to reinforce or cancel each other, depending upon direction and magnitude
- machines
- nature of inertia
- ways in which a net force can act upon an object
- gravity

Processes in the Lithosphere, Atmosphere, Hydrosphere, and Biosphere

- erosion
- life process of organisms
- plants and animals reshape the landscape
- concepts of time and size

Protection of the Natural Systems

Consequences of Human Action on Earth's Systems

The Interaction and Organization of the Solar System

Properties of Stars That Appear to Be Made of Similar Elements

Vastness of the Universe and Earth's Role  
comparison of other galaxies to our Solar System

Patterns of Structure and Function

- structural basis of most organisms
- properties of multicellular organisms
  - cells grow and divide
- life functions of organisms
- similar structures of cells with similar functions
- behavioral responses to environment

Process and Importance of Genetic Diversity

- variation is due to genetic information
- survival of organisms because of favorable characteristics
- fossils records

Nature of Living Things

- viruses
- classification as a tool for understanding biodiversity and interrelationships
- interactions of organisms with each other and their environment
- support of life by energy from the Sun and the recycling of living organisms

Consequences of Limited Resources

- renewable resources
- biotic and abiotic factors
- effects of changes on organisms
- humans as a part of an ecosystem

**Appendix A**  
**FCAT Science Topics**  
***Sunshine State Standards, Grades 6-8***

Scientific Process of Solving Problems  
    modification of scientific knowledge  
    the inquiry process  
    differences among science disciplines  
    scientific method

Patterns of Natural Events

Interdependence of Science, Technology, and  
    Society

# Appendix A

## FCAT Science Topics

### *Sunshine State Standards, Grades 9–10*

Nature of Matter	Processes That Shape Earth
Properties of Matter <ul style="list-style-type: none"> <li>electron configuration</li> <li>diversity of materials due to molecular forces</li> <li>energy change in phases of matter</li> <li>atomic and molecular change</li> <li>procedures involved in substance change</li> </ul>	Processes in the Lithosphere, Atmosphere, Hydrosphere, and Biosphere <ul style="list-style-type: none"> <li>climatic patterns</li> <li>the structure of Earth’s crust</li> <li>Earth’s change over time</li> </ul>
Basic Principles of Atomic Theory <ul style="list-style-type: none"> <li>differences between an element, a molecule, and a compound</li> <li>composition of elements</li> <li>nuclear energy</li> <li>different behaviors of different forms of matter</li> </ul>	Protection of the Natural Systems <ul style="list-style-type: none"> <li>interconnectedness of Earth’s systems</li> </ul>
Energy	Interaction and Organization of the Solar System <ul style="list-style-type: none"> <li>relationship between Earth and the Solar System</li> <li>characteristics of planets and satellites</li> </ul>
Forms of Energy <ul style="list-style-type: none"> <li>importance of knowledge of energy to all scientific disciplines</li> <li>conservation of mass and energy</li> <li>temperature</li> <li>electrical charges</li> <li>first law of thermodynamics</li> <li>decrease of usable energy</li> </ul>	Vastness of the Universe and Earth’s Role <ul style="list-style-type: none"> <li>stages in development of three categories of stars</li> <li>bodies within and outside our galaxy</li> <li>astronomical distance and time</li> <li>stellar equilibrium</li> <li>ways scientists collect and generate data about the universe</li> </ul>
Current Theories of the Structure of the Universe	Patterns of Structure and Function <ul style="list-style-type: none"> <li>body structures and functions</li> <li>the function of membranes</li> <li>biological systems</li> <li>complex interactions</li> <li>communication between the separate parts of the body</li> <li>stimulus response</li> </ul>
Motion <ul style="list-style-type: none"> <li>relativity of motion</li> <li>inertia</li> <li>velocity</li> </ul>	Process and Importance of Genetic Diversity <ul style="list-style-type: none"> <li>mechanisms of change</li> </ul>
Forces and Motion	Nature of Living Things <ul style="list-style-type: none"> <li>diversity and interdependence of living things</li> <li>chemical composition of molecules</li> </ul>
Forces and Effects <ul style="list-style-type: none"> <li>gravity</li> <li>electrical force</li> <li>magnetic and electrical force</li> <li>nuclear power</li> <li>forces between atoms and molecules</li> <li>action and reaction</li> </ul>	Consequences of Limited Resources <ul style="list-style-type: none"> <li>fossil fuels</li> <li>equilibrium</li> <li>world ecosystems</li> <li>carrying capacity</li> </ul>

**Appendix A**  
**FCAT Science Topics**  
***Sunshine State Standards, Grades 9–10***

Nature of Science

Scientific Process of Solving Problems  
    scientific investigation  
    development of new ideas in science

Patterns of Natural Events  
    discovery of rules by careful,  
        systematic study

Interdependence of Science, Technology, and  
Society  
    technological problems and the demand for  
        new scientific knowledge  
    possible causes and effects of events  
    influence of funding on the area of  
        discovery  
    social context of the value of a technology  
    uses of scientific knowledge