

<p><u>FCAT Standard 1</u> SC.8.E.5.1 Recognize that there are enormous distances between objects in space and apply our knowledge of light and space travel to understand this distance.</p>	<p><u>FCAT Standard 2</u> SC.8.L.18.1 Describe and investigate the process of photosynthesis, such as the roles of light, carbon dioxide, water, and chlorophyll; production of food; and release of oxygen</p>
<p><u>FCAT Standard 3</u> SC.7.E.6.2 Identify the patterns within the rock cycle and relate them to surface events (weathering and erosion and deposition) and subsurface events (plate tectonics and mountain building).</p>	<p><u>FCAT Standard 4</u> SC.7.N.1.3 Distinguish between an experiment (which must involve the identification and control of variables) and other forms of scientific investigation, and explain that not all scientific knowledge is derived from experimentation.</p>
<p><u>FCAT Standard 5</u> SC.8.E.5.2 Recognize that the universe contains many billions of galaxies and that each galaxy contains many billions of stars. Also demonstrate the different components of galaxies in addition to stars.</p>	<p><u>FCAT Standard 6</u> SC.7.E.6.3 Identify current methods for measuring the age of Earth and its parts, including the law of superposition and radioactive dating.</p>
<p><u>FCAT Standard 7</u> SC.6.L.14.6 Compare and contrast types of infectious agents that may infect the human body, including viruses, bacteria, fungi, and parasites.</p>	<p><u>FCAT Standard 8</u> Distinguish the hierarchical relationships between planets and other astronomical bodies relative to solar system, galaxy, and universe, including distance, size, and composition</p>
<p><u>FCAT Standard 9</u> SC.7.E.6.4 Explain and give examples of how physical evidence supports scientific theories that Earth has evolved over geologic time due to natural processes. (Theory of Plate Tectonics, Wegener’s hypothesis, etc.)</p>	<p><u>FCAT Standard 10</u> SC.7.N.1.4 Identify test variables (independent variables) and outcome variables (dependent variables) in an experiment.</p>

<p><u>FCAT Standard 11</u> SC.8.E.5.4 Explore the Law of Universal Gravitation by explaining the role that gravity plays in the formation of planets, stars, and solar systems and in determining their motions. Also, explore the Law of Gravity by recognizing that every object exerts gravitational force on every other object and that the force depends on how much mass the objects have and how far apart they are.</p>	<p><u>FCAT Standard 12</u> SC.7.E.6.5 Explore the scientific theory of plate tectonics by describing how the movement of Earth’s crustal plates causes both slow and rapid changes in Earth’s surface, including volcanic eruptions, earthquakes, and mountain building.</p>
<p><u>FCAT Standard 13</u> SC.6.L.15.1 Analyze and describe how and why organisms are classified according to shared characteristics, with emphasis on the Linnaean system combined with the concept of Domains</p>	<p><u>FCAT Standard 14</u> SC.8.E.5.5 Describe and classify specific physical properties of stars: apparent magnitude (brightness), temperature (color), size, and luminosity (absolute brightness).</p>
<p><u>FCAT Standard 15</u> SC.7.E.6.6 Identify the impact that humans have had on Earth, such as deforestation, urbanization, desertification, erosion, air and water quality, and changing the flow of water</p>	<p><u>FCAT Standard 16</u> SC.7.L.16.2 Determine the probabilities for genotype and phenotype combinations using Punnett squares and pedigrees</p>
<p><u>FCAT Standard 17</u> SC.8.E.5.6 Create models of solar properties, including rotation, structure of the Sun, convection, sunspots, solar flares, and prominences</p>	<p><u>FCAT Standard 18</u> SC.7.E.6.7 Recognize that heat flow and movement of material within Earth causes earthquakes and volcanic eruptions and creates mountains and ocean basins</p>
<p><u>FCAT Standard 19</u> SC.6.E.7.1 Differentiate among radiation, conduction, and convection, the three mechanisms by which heat is transferred through Earth’s system.</p>	<p><u>FCAT Standard 20</u> SC.8.L.18.2 Describe and investigate how cellular respiration breaks down food to provide energy and releases carbon dioxide</p>

<p><u>FCAT Standard 21</u> SC.8.E.5.7 Compare and contrast the properties of objects in the Solar System, including the Sun, planets, and moons to those of Earth, such as gravitational force, distance from the Sun, speed, movement, temperature, and atmospheric conditions</p>	<p><u>FCAT Standard 22</u> SC.8.N.1.6 Understand that scientific investigations involve the collection of relevant empirical evidence; the use of logical reasoning; and the application of imagination in devising hypotheses, predictions, explanations, and models to make sense of the collected evidence.</p>
<p><u>FCAT Standard 23</u> SC.6.E.7.2 Investigate and apply how the cycling of water between the atmosphere and hydrosphere has an effect on weather patterns and climate</p>	<p><u>FCAT Standard 24</u> SC.8.E.5.8 Compare various historical models of the Solar System, including geocentric and heliocentric. Make note of the current theory.</p>
<p><u>FCAT Standard 25</u> SC.6.E.7.3 Describe how global patterns such as the jet stream and ocean currents influence local weather in measurable terms such as temperature, air pressure, wind direction and speed, and humidity and precipitation</p>	<p><u>FCAT Standard 26</u> SC.8.E.5.9 Explain the impact of objects in space on each other, including: 1. the Sun on the Earth, including seasons and gravitational attraction; 2. the Moon on the Earth, including phases, tides, and eclipses, and the relative position of each body.</p>
<p><u>FCAT Standard 27</u> SC.7.N.2.1 Identify an instance from the history of science in which scientific knowledge has changed when new evidence or new interpretations are encountered</p>	<p><u>FCAT Standard 28</u> SC.8.E.5.10 Assess how technology is essential to science for such purposes as access to outer space and other remote locations, sample collection, measurement, data collection and storage, computation, and communication of information. Also relate this to the EM Spectrum.</p>
<p><u>FCAT Standard 29</u> SC.6.E.7.4 Differentiate and show interactions among the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere</p>	<p><u>FCAT Standard 30</u> SC.7.N.3.1 Recognize and explain the difference between theories and laws and give several examples of scientific theories and the evidence that supports them. Explain why theories may be modified but are rarely discarded.</p>

<p><u>FCAT Standard 31</u> SC.8.E.5.11 Identify and compare characteristics of the electromagnetic spectrum, such as wavelength, frequency, use, and hazards, and recognize its application to an understanding of planetary images and satellite photographs.</p>	<p><u>FCAT Standard 32</u> SC.7.L.15.2 Explore the scientific theory of evolution by recognizing and explaining ways in which genetic variation and environmental factors contribute to evolution by natural selection and diversity of organisms.</p>
<p><u>FCAT Standard 33</u> SC.7.E.6.1 Describe the layers of the solid Earth, including the lithosphere, the hot convecting mantle, and the dense metallic liquid and solid cores.</p>	<p><u>FCAT Standard 34</u> SC.7.P.11.2 Investigate and describe the transformation of energy from one form to another. Also, relate this to the law of conservation of energy.</p>
<p><u>FCAT Standard 35</u> SC.6.E.6.2 Recognize that there are a variety of different landforms on Earth's surface, such as coastlines, dunes, rivers, mountains, glaciers, deltas, and lakes, and relate these landforms as they apply to Florida.</p>	<p><u>FCAT Standard 36</u> SC.7.P.11.4 Observe and describe that heat flows in predictable ways, moving from warmer objects to cooler ones until they reach the same temperature. Also, relate this to Earth Science AND physical science.</p>
<p><u>FCAT Standard 37</u> SC.6.E.7.9 Describe how the composition and structure of the atmosphere protects life and insulates the planet</p>	<p><u>FCAT Standard 38</u> SC.8.P.8.4 Classify and compare substances on the basis of characteristic physical properties that can be demonstrated or measured: for example, density; thermal or electrical conductivity; solubility; magnetic properties; melting and boiling points; and know that these properties are independent of the amount of the sample.</p>
<p><u>FCAT Standard 39</u> SC.7.L.16.3 Compare and contrast the general processes of sexual reproduction requiring meiosis and asexual reproduction requiring mitosis</p>	<p><u>FCAT Standard 40</u> SC.6.P.12.1 Measure and graph distance versus time for an object moving at a constant speed. Interpret this relationship and explain how to calculate speed by using the formula AND by using the slope on a Distance-Time graph.</p>

<p><u>FCAT Standard 41</u> SC.6.E.7.5 Explain how energy provided by the Sun influences global patterns of atmospheric movement and the temperature differences between air, water, and land.</p>	<p><u>FCAT Standard 42</u> SC.6.P.13.1 Investigate and describe types of forces, including contact forces and forces acting at a distance, such as electrical, magnetic, and gravitational.</p>
<p><u>FCAT Standard 43</u> SC.6.L.14.4 Compare and contrast the structure and function of major organelles of plant and animal cells, including cell wall, cell membrane, nucleus, cytoplasm, chloroplasts, mitochondria, and vacuoles.</p>	<p><u>FCAT Standard 44</u> SC.7.P.10.2 Observe and explain that light can be reflected, refracted, and/or absorbed. AND SC.7.L.17.1 Explain and illustrate the roles of and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web</p>
<p><u>FCAT Standard 45</u> SC.6.P.13.3 Investigate and describe that an unbalanced force acting on an object changes its speed, or direction of motion, or both</p>	<p><u>FCAT Standard 46</u> SC.8.L.18.3 Construct a scientific model of the carbon cycle to show how matter and energy are continuously transferred within and between organisms and their physical environment</p>
<p><u>FCAT Standard 47</u> SC.7.P.10.3 Recognize that light waves, sound waves, and other waves move at different speeds in different materials/ mediums. Also relate this to refraction and the term mirage.</p>	<p><u>FCAT Standard 48</u> SC.6.L.14.1 Describe and identify patterns in the hierarchical organization of organisms from atoms to molecules and cells to tissues to organs to organ systems to organisms. AND SC.6.L.14.2 Investigate and explain the components of the scientific theory of cells (cell theory): all organisms are composed of cells (single-celled or multicellular), all cells come from pre-existing cells, and cells are the basic unit of life.</p>

FCAT Standard 49

SC.6.L.14.5

Identify and investigate the general functions of the major systems of the human body (digestive, respiratory, circulatory, reproductive, excretory, immune, nervous, and musculoskeletal) and describe ways these systems interact with each other to maintain homeostasis.

AND SC.6.L.14.3

Recognize and explore how cells of all organisms undergo similar processes to maintain homeostasis, including extracting energy from food, getting rid of waste, and reproducing.

FCAT Standard 50

SC.6.E.7.6

Differentiate between weather and climate. Also explain related terminology to weather and climate.