



Alignment Document

State of Florida And Aventa Learning Earth Science

Earth Science 2005-2007 Benchmark Blueprint

| State Standard Number | State Standard Area / Description | Unit Name | Course Topic Description |
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| SC.D | Processes that Shape the Earth | | |
| SC.D.1.4 | The student recognizes that processes in the lithosphere, atmosphere, hydrosphere, and biosphere interact to shape the Earth. | | |
| SC.D.1.4.1 | knows how climatic patterns on Earth result from an interplay of many factors (Earth's topography, its rotation on its axis, solar radiation, the transfer of heat energy where the atmosphere interfaces with lands and oceans, and wind and ocean currents). | | |
| SC.D.1.4.2 | knows that the solid crust of Earth consists of slow-moving, separate plates that float on a denser, molten layer of Earth and that these plates interact with each other, changing the Earth's surface in many ways (e.g., forming mountain ranges and rift valleys, causing earthquake and volcanic activity, and forming undersea mountains that can become ocean islands). | Plate Tectonics, Volcanoes, Earthquakes and Deformation | Internal Structure of the Earth |
| SC.D.1.4.3 | knows that changes in Earth's climate, geological activity, and life forms may be traced and compared. | | |
| SC.D.1.4.4 | knows that Earth's systems and organisms are the result of a long, continuous change over time. | | |

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| SC.D.2.4 | The student understands the need for protection of the natural systems on Earth. | | |
| SC.D.2.4.1 | understands the interconnectedness of the systems on Earth and the quality of life. | | |
| SC.E | Earth and Space | | |
| SC.E.1.4 | The student understands the interaction and organization in the Solar System and the universe and how this affects life on Earth. | | |
| SC.E.1.4.1 | understands the relationships between events on Earth and the movements of the Earth, its moon, the other planets, and the sun. | Earth and Space | Earth and the Moon |
| | | Earth and Space | The Solar System and the Universe |
| SC.E.1.4.2 | knows how the characteristics of other planets and satellites are similar to and different from those of the Earth. | Earth and Space | The Solar System and the Universe |
| SC.E.1.4.3 | knows the various reasons that Earth is the only planet in our Solar System that appears to be capable of supporting life as we know it. | | |
| SC.E.2.4 | The student recognizes the vastness of the universe and the Earth's place in it. | | |
| SC.E.2.4.1 | knows that the stages in the development of three categories of stars are based on mass: stars that have the approximate mass of our sun, stars that are two-to-three-stellar masses and develop into neutron stars, and stars that are five-to-six-stellar masses and develop into black holes. | | |
| SC.E.2.4.2 | identifies the arrangement of bodies found within and outside our galaxy. | | |
| SC.E.2.4.3 | knows astronomical distance and time. | Earth and Space | The Solar System and the Universe |
| SC.E.2.4.4 | understands stellar equilibrium. | | |
| SC.E.2.4.5 | knows various scientific theories on how the universe was formed. | Earth and Space | The Solar System and the Universe |

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| SC.E.2.4.6 | knows the various ways in which scientists collect and generate data about our universe (e.g., X- ray telescopes, computer simulations of gravitational systems, nuclear reactions, space probes, and supercollider simulations). | Earth and Space | The Solar System and the Universe |
| | | Earth and Space | The Universe and Exploring Space |
| SC.E.2.4.7 | knows that mathematical models and computer simulations are used in studying evidence from many sources to form a scientific account of the universe. | | |
| SC.H | The Nature of Science | | |
| SC.H.1.4 | The student uses the scientific processes and habits of mind to solve problems. | | |
| SC.H.1.4.1 | knows that investigations are conducted to explore new phenomena, to check on previous results, to test how well a theory predicts, and to compare different theories. | Planet Earth | Steps of the Scientific Method |
| SC.H.1.4.2 | knows that from time to time, major shifts occur in the scientific view of how the world works, but that more often the changes that take place in the body of scientific knowledge are small modifications of prior knowledge. | Planet Earth | Astronomy |
| SC.H.1.4.3 | understands that no matter how well one theory fits observations, a new theory might fit them as well or better, or might fit a wider range of observations, because in science, the testing, revising, and occasional discarding of theories, new and old, never ends and leads to an increasingly better understanding of how things work in the world, but not to absolute truth. | Planet Earth | Steps of the Scientific Method |
| | | Planet Earth | Astronomy |
| SC.H.1.4.4 | knows that scientists in any one research group tend to see things alike and that therefore scientific teams are expected to seek out the possible sources of bias in the design of their investigations and in their data analysis. | | |

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| SC.H.1.4.5 | understands that new ideas in science are limited by the context in which they are conceived, are often rejected by the scientific establishment, sometimes spring from unexpected findings, and usually grow slowly from many contributors. | Planet Earth | Astronomy |
| SC.H.1.4.6 | understands that, in the short run, new ideas that do not mesh well with mainstream ideas in science often encounter vigorous criticism and that, in the long run, theories are judged by how they fit with other theories, the range of observations they explain, how well they explain observations, and how effective they are in predicting new findings. | Planet Earth | Astronomy |
| SC.H.1.4.7 | understands the importance of a sense of responsibility, a commitment to peer review, truthful reporting of the methods and outcomes of investigations, and making the public aware of the findings. | | |
| SC.H.2.4 | The student understands that most natural events occur in comprehensible, consistent patterns. | | |
| SC.H.2.4.1 | knows that scientists assume that the universe is a vast system in which basic rules exist that may range from very simple to extremely complex, but that scientists operate on the belief that the rules can be discovered by careful, systemic study. | | |
| SC.H.2.4.2 | knows that scientists control conditions in order to obtain evidence, but when that is not possible for practical or ethical reasons, they try to observe a wide range of natural occurrences to discern patterns. | | |
| SC.H.3.4 | The student understands that science, technology, and society are interwoven and interdependent. | | |
| SC.H.3.4.1 | knows that performance testing is often conducted using small-scale models, computer simulations, or analogous systems to reduce the chance of system failure. | | |



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| SC.H.3.4.2 | knows that technological problems often create a demand for new scientific knowledge and that new technologies make it possible for scientists to extend their research in a way that advances science. | | |
| SC.H.3.4.3 | knows that scientists can bring information, insights, and analytical skills to matters of public concern and help people understand the possible causes and effects of events. | | |
| SC.H.3.4.4 | knows that funds for science research come from federal government agencies, industry, and private foundations and that this funding often influences the areas of discovery. | | |
| SC.H.3.4.5 | knows that the value of a technology may differ for different people and at different times. | | |
| SC.H.3.4.6 | knows that scientific knowledge is used by those who engage in design and technology to solve practical problems, taking human values and limitations into account. | | |