

# EarthComm Correlation to Arkansas

## Grade 9-12 Earth/Space Systems Curriculum Framework

<b>Correlation Key:</b> "XX" Indepth Coverage = In depth coverage of concept in student edition. "X" Coverage = Coverage in student edition and/or teacher edition supports the development of the concept	Earth's Dynamic Geosphere			Understanding Your			Earth's Fluid Spheres			Earth's Natural Resources			Earth System Evolution		
	G1	G2	G3	U1	U2	U3	F1	F2	F3	N1	N2	N3	E1	E2	E3
<b>STRAND 3 Earth/Space Systems</b>															
<b>CONTENT STANDARD 1 Students will demonstrate an understanding of the inquiry process through the study of Earth and space systems.</b>															
ES.1.1. Understand that science is a process based on the scientific method which leads to a deeper understanding of real world situations.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
ES.1.2. Follow procedures for a scientific inquiry using step-by-step instructions, mathematical formulas, flow diagrams, and/or sketches.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
ES.1.3. Develop and implement a workable scientific inquiry independently and with a group using standard safety procedures.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
ES.1.4. Evaluate the process that scientists use to construct and validate scientific theory, such as data collection, prediction, experimentation (controls and variables), bias elimination, and	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
ES.1.5. Make objective observations and perform error analysis on collected data.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
ES.1.6. Formulate valid conclusions.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
ES.1.7. Communicate and defend in writing a scientific argument.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
ES.1.8. Critique and interpret scientific data on charts and graphs.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
ES.1.9. Recognize that theories are models and may be revised when new data is introduced.	X	XX	X		X		X	XX	X	X	X	X	X	XX	X
ES.1.10. Understand the criteria for the formation of scientific theory and a scientific law.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<b>CONTENT STANDARD 2: Students will explore, demonstrate, communicate, apply and evaluate knowledge of the properties of Earth and Space Systems</b>															
ES.2.1. Evaluate the historical and multicultural contributions to the scientific body of knowledge in the earth and space sciences. Topics may include expanding universe, plate tectonics, composition of the Earth and stars, and geologic time; and the works of Galileo, Copernicus, Kepler, and	X	XX	X	X	X	X	X	X	X	X	X	X	XX	X	X
ES.2.2. Understand that the sun is the source of energy for the solar system.										X			XX		
ES.2.3. Explain how Earth's energy and materials are conserved, interrelated, and recycled; include ores, and the following cycles--water, oxygen, carbon, and nitrogen.	X	X			XX	X	X	X	X	XX	XX	XX	X	X	
ES.2.4. Explain the features of the Earth's composition and geological phenomena. Utilize the plate tectonics, the continental drift, and the sea-floor spreading theories.	XX	XX	XX	X	X	X	X	X	X	X	X	X		X	
ES.2.5. Analyze the composition and categorize types of rocks and minerals. Use Moh's Hardness Scale and the rock cycle.	XX	X		XX						X	XX				X
ES.2.6. Perform chemical analysis and classification of soil samples (pH or NPK).						XX									
ES.2.7. Examine origins of the natural land divisions of Arkansas in view of the earth formations (soil and rock) peculiar to that division.	X	X		XX		X			X	X	X				X
ES.2.8. Investigate the characteristics of oceans such as composition, features, waves, and energy transfer resulting from the currents.							XX							X	
ES.2.9. Evaluate the physical interactions of water with the Earth (glaciers, erosion, and leaching).	XX			XX	XX	XX	XX	XX	XX			XX		X	
ES.2.10. Evaluate weather and climate, globally and locally, as a result of a complex exchange of heat energy (clouds, solar radiation, ocean currents, gases, Coriolis effect, human activities, jet stream, El Nino, etc.).	X						X	XX						XX	
ES.2.11. Given measurements of weather conditions, relate them to the temperature, pressure, density, ideal gas law, and buoyancy of air.								X							
ES.2.12. Interpret the features on weather maps and predict future conditions.								XX							

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ES.2.13. Compare Earth's sun to other stars in size, mass, temperature, energy source, position on HR diagram, and stages in a star's existence.													XX		
ES.2.14. Locate common constellations.													X		
ES.2.15. Describe the organization of the known universe (solar system, galaxy, cluster,													XX		
ES.2.16. Analyze the impact of modern technology on the study of the Earth and universe (telescopes, space probes, robotic arms, weather satellites, Doppler radar, sonar, seismographs).	XX	XX	XX				X	XX	X	XX	XX	XX	XX	XX	X
<b>CONTENT STANDARD 3: Students will demonstrate an understanding of the connections</b>															
ES.3.1. Analyze the role science plays in every day life and compare different careers in the Earth/space sciences.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
ES.3.2. Evaluate long range plans for resource use and by-product disposal in terms of environmental, economic and political impact (human activities vs. resource quality).						X				XX	XX	XX		XX	
ES.3.3. Assess current world issues applying scientific themes (e.g., global changes in climate, ozone depletion, UV radiation, natural resources, use of technology, and public policy).			XX			XX	XX		X	XX	XX	XX		XX	
ES.3.4. Understand that mathematics is the precise language of communication and problem solving in science.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ES.3.5. Apply technology as appropriate tools for solving problems (electronic balances, computers, digital cameras, pH meters, spectrophotometers, telescopes, barometers, etc.).	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ES.3.6 Assess the connections between pure science and applied science to the world of work by performing labs and activities common to the Earth/space sciences.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
ES.3.7. Understand broad themes of Project 2061. Such themes include systems, patterns of change, interactions, energy equilibrium, models, and scale (relative dimensions such as solar system size).	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX