EarthComm Correlations to Illinois Early High School Earth Science Standards

Correlation Key:
"X" = Coverage
Secondary concept of the activity or problem. Students gain a basic understanding or introduction of the concept.
"XX" = In-depth Coverage
Primary concept that is the focus of the activity or problem. Students gain thorough understanding of the concept. Coverage in student edition and/or Teacher Edition supports the development of the concept

	Earth's Dynamic Geosphere			Understanding Your Environment			Earth's Fluid Spheres			Earth's Natural Resources			Earth System Evolution		
	V	**PT**	**E**	**BG**	**RS**	**LU**	**O**	**SW**	**C**	**ER**	**MR**	**WR**	**AST**	**CC**	**CL**
Goal 11: Understanding the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.															
Learning Standard 11A: Know and apply the concept, principles and processes of scientific inquiry.															
11.A.4a Formulate hypotheses referencing prior research and knowledge.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
11.A.4b Conduct controlled experiments or simulations to test hypotheses.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
11.A.4c Collect, organize and analyze data accurately and precisely.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
11.A.4d Apply statistical methods to the data to reach and support conclusions.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
11.A.4e Formulate alternative hypotheses to explain unexpected results.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
11.A.4f Using available technology, report, display and defend to an audience conclusions drawn from investigations.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
Learning Standard 11B: Know and apply the concepts, principles and processes of technological design.															
11.B.4a Identify a technological design problem inherent in a commonly used product.	X		XX			XX	X	X	XX	XX	XX	XX			
11.B.4b Propose and compare different solution designs to the design problem based upon given constraints including available tools, materials and time.	X		XX			XX	X	X	XX	XX	XX	XX			
11.B.4c Develop working visualizations of the proposed solution designs (e.g., blueprints, schematics, flowcharts, cad-cam, animations).	X		XX			XX	X	X	XX	XX	XX	XX			
11.B.4d Determine the criteria, upon which the designs will be judged, identify advantages and disadvantages of the designs and select the most promising design.	X		XX			XX	X	X	XX	XX	XX	XX			
11.B.4e Develop and test a prototype or simulation of the solution design using available materials, instruments and technology.	X		XX			XX	X	X	XX	XX	XX	XX			
11.B.4f Evaluate the test results based on established criteria, note sources of error and recommend improvements.	XX		XX			XX	XX	XX	XX	XX	XX	XX			
11.B.4g Using available technology, report to an audience the relative success of the design based on the test results and criteria.	XX		XX			XX	XX	XX	XX	XX	XX	XX			
Goal 12: Understand the fundamental concepts, principles and interconnections of the life, physical and Earth/space sciences.															
Learning Standard 12E: Know and apply concepts that describe the features and processes of the Earth and its resources.															
12.E.4a Explain how external and internal energy sources drive Earth processes (e.g., solar energy drives weather patterns; internal heat drives plate tectonics).	X	XX	X				XX	XX		XX				X	
12.E.4b Describe how rock sequences and fossil remains are used to interpret the age and changes in the Earth.	X	X		XX	X	X			X	X	X			XX	XX

Learning Standard 12F: Know and apply concepts that explain the composition and structure of the universe and Earth's place in it.															
12.F.4a Explain theories, past and present, for changes observed in the universe.													XX		
12.F.4b Describe and compare the chemical and physical characteristics of galaxies and objects within galaxies (e.g., pulsars, nebulae, black holes, dark matter, stars).													XX		
Goal 13: Understand the relationships among science, technology and society in historical and contemporary contexts.															
Learning Standard 13A: Know and apply the accepted practices of science.															
13.A.4a Estimate and suggest ways to reduce the degree of risk involved in science activities.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
13.A.4b Assess the validity of scientific data by analyzing the results, sample set, sample size, similar previous experimentation, possible misrepresentation of data presented and potential sources of error.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
13.A.4c Describe how scientific knowledge, explanations and technological designs may change with new information over time (e.g., the understanding of DNA, the design of computers).	X	XX	X	X	X	X	X	X	X	X	X	X	XX	X	X
13.A.4d Explain how peer review helps to assure the accurate use of data and improves the scientific process.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
Learning Standard 13B: Know and apply concepts that describe the interaction between science, technology and society.															
13.B.4a Compare and contrast scientific inquiry and technological design as pure and applied sciences.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
13.B.4b Analyze a particular occupation to identify decisions that may be influenced by knowledge of science.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
13.B.4c Analyze ways that resource management and technology can be used to accommodate population trends.			XX			XX				XX	XX	XX			
13.B.4d Analyze local examples of resource use, technology use or conservation programs; document findings; and make recommendations for improvements.			XX			X				XX	XX	XX			
13.B.4e Evaluate claims derived from purported scientific studies used in advertising and marketing strategies.			X			X					X				