

EarthComm Correlations to Illinois Late High School

Earth Science Standards

EarthComm Correlation - Illinois Late High School

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	
STATE GOAL 11: Understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.																
A. Know and apply the concepts, principles and processes of scientific inquiry.																
11.A.5a Formulate hypotheses referencing prior research and knowledge.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	
11.A.5b Design procedures to test the selected hypotheses.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	
11.A.5c Conduct systematic controlled experiments to test the selected hypotheses.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	
11.A.5d Apply statistical methods to make predictions and to test the accuracy of results.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
11.A.5e Report, display and defend the results of investigations to audiences that may include professionals and technical experts.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	
B. Know and apply the concepts, principles, and processes of technological design.																
11.B.5a Identify a design problem that has practical applications and propose possible solutions, considering such constraints as available tools, materials, time and costs.	X		XX				XX	X	X	XX	XX	XX	XX	X		
11.B.5b Select criteria for a successful design solution to the identified problem.	X		XX				XX	X	X	XX	XX	XX	XX	X		
11.B.5c Build and test different models or simulations of the design solution using suitable materials, tools and technology.	X		XX				XX	X	X	XX	XX	XX	XX	X		
11.B.5d Choose a model and refine its design based on the test results.	X		XX				XX	X	X	XX	XX	XX	XX	X		
11.B.5e Apply established criteria to evaluate the suitability, acceptability, benefits, drawbacks and consequences for the tested design solution and recommend modifications and refinements.	XX		XX				XX	XX	XX	XX	XX	XX	XX	X		
11.B.5f Using available technology, prepare and present findings of the tested design solution to an audience that may include professional and technical experts.	XX		XX				XX	XX	XX	XX	XX	XX	XX	X		
STATE GOAL 12: Understand the fundamental concepts, principles and interconnections of the life, physical, and earth/space sciences.																
E. Know and apply concepts that describe the features and processes of the Earth and its resources.																
12.E.5 Analyze the processes involved in naturally occurring short-term and long-term Earth events (e.g., floods, ice ages, temperature, sea-level fluctuations).	XX	XX	XX	X	XX	XX	XX	XX	XX	XX	XX	X	XX	X	XX	X
F. Know and apply concepts that explain the composition and structure of the universe and Earth's place in it.																
12.F.5a Compare the processes involved in the life cycle of stars (e.g., gravitational collapse, thermonuclear fusion, nova) and evaluate the supporting evidence.														XX		
12.F.5b Describe the size and age of the universe and evaluate the supporting evidence (e.g., red-shift, Hubble's constant).														XX		

STATE GOAL 13: Understand the relationships among science, technology, and society in historical and contemporary contexts.

A. Know and apply the accepted practices of science.

13.A.5a Design procedures and policies to eliminate or reduce risk in potentially hazardous science activities.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
13.A.5b Explain criteria that scientists use to evaluate the validity of scientific claims and theories	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
13.A.5c Explain the strengths, weaknesses and uses of research methodologies including observational studies, controlled laboratory experiments, computer modeling and statistical studies.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
13.A.5d Explain, using a practical example (e.g., cold fusion), why experimental replication and peer review are essential to scientific claims.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

B. Know and apply concepts that describe the interaction between science, technology and society.

13.B.5a Analyze challenges created by international competition for increases in scientific knowledge and technological capabilities (e.g., patent issues, industrial espionage, technology obsolescence).			X			X	X		X	X	X	X				
13.B.5b Analyze and describe the processes and effects of scientific and technological breakthroughs.	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
13.B.5c Design and conduct an environmental impact study, analyze findings and justify recommendations.			X		X	XX	X	X	X	X	X	X				X
13.B.5d Analyze the costs, benefits and effects of scientific and technological policies at the local, state, national and global levels (e.g., genetic research, Internet access).			XX			XX	X		X	X	X	X			X	
13.B.5e Assess how scientific and technological progress has affected other fields of study, careers and job markets and aspects of everyday life.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X