IES Correlations to Illinois

Middle/Junior 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	**Climate and Weather**	**Dynamic Planet**	**Energy Resources**	**Fossils**	**Materials and Minerals**	**Oceans**	**Rocks and Landforms**	**Soil**	**Water as a Resource**
Goal 11: Understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.									
Learning Standard 11A: Know and apply the concepts, principles and processes of scientific inquiry.									
11.A.3a Formulate hypotheses that can be tested by collecting data.	XX	XX	XX	XX	XX	XX	XX	XX	XX
11.A.3b Conduct scientific experiments that control all but one variable.	XX	XX	XX	XX	XX	XX	XX	XX	XX
11.A.3c Collect and record data accurately using consistent measuring and recording techniques and media.	XX	XX	XX	XX	XX	XX	XX	XX	XX
11.A.3d Explain the existence of unexpected results in a data set.	XX	XX	XX	XX	XX	XX	XX	XX	XX
11.A.3e Use data manipulation tools and quantitative (e.g., mean, mode, simple equations) and representational methods (e.g., simulations, image processing) to analyze measurements.	XX	XX	XX	XX	XX	XX	XX	XX	XX
11.A.3f Interpret and represent results of analysis to produce findings.	XX	XX	XX	XX	XX	XX	XX	XX	XX
11.A.3g Report and display the process and results of a scientific investigation.	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.3a Identify an actual design problem and establish criteria for determining the success of a solution.	XX	XX	XX	XX	XX	X	X	XX	XX
11.B.3b Sketch, propose and compare design solutions to the problem considering available materials, tools, cost effectiveness and safety.	X	X	XX	X	XX	X	XX	XX	XX
11.B.3c Select the most appropiate design and build a prototype or simulation.	XX	X	XX	X	XX	X	XX	X	XX
11.B.3d Test the prototype using available materials, instruments and technology and record the data.	XX	X	XX	X	XX	X	XX	X	XX
11.B.3e Evaluate the test results based on established criteria, note sources of error and recommend improvements.	XX	X	XX	X	XX	X	X	XX	XX
11.B.3f Using available technology, report the relative success of the design based on the test results and criteria.	XX	XX	XX	X	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 Earth and its resources.									
12.E.3a Analyze and explain large-scale dynamic forces, events and processes that affect Earth's land, water and atmospheric systems (e.g., jet stream, hurricanes, plate tectonics).	XX	XX	X	X	X	XX	X	X	X
12.E.3b Describe interactions between solid Earth, oceans, atmosphere and organisms that have resulted in ongoing changes of Earth (e.g., erosion, El Niño).	XX	XX	X	X		XX	XX	XX	XX
12.E.3c Evaluate the biodegradability of renewable and nonrenewable natural resources.			XX	X	X			X	
Learning Standard 12F: Know and apply concepts that explain the composition and structure of the universe and Earth's place in it.									
12.F.3a Simulate, analyze and explain the effects of gravitational force in the solar system (e.g., orbital shape and speed, tides, spherical shape of the planets and moons).									
12.F.3b Describe the organization and physical characteristics of the solar system (e.g., Sun, planets, satellites, asteroids, comets).									

12.F.3c Compare and contrast the Sun as a star with other objects in the Milky Way Galaxy (e.g., nebulae, dust clouds, stars, black holes).									
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.3a Identify and reduce potential hazards in science activities (e.g., ventilation, handling chemicals).	**XX**	**XX**	**XX**	**XX**	**XX**	**XX**	**XX**	**XX**	**XX**
13.A.3b Analyze historical and contemporary cases in which the work of science has been affected by both valid and biased scientific practices.	**X**	**XX**		**XX**					
13.A.3c Explain what is similar and different about observational and experimental investigations.	**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.3a Identify and explain ways that scientific knowledge and economics drive technological development.	**XX**	**X**	**XX**		**XX**	**XX**	**XX**		**X**
13.B.3b Identify important contributions to science and technology that have been made by individuals and groups from various cultures.	**X**	**X**	**X**	**X**	**XX**	**X**	**X**	**X**	**X**
13.B.3c Describe how occupations use scientific and technological knowledge and skills.	**XX**	**XX**	**XX**	**XX**	**XX**	**XX**	**X**	**X**	**XX**
13.B.3d Analyze the interaction of resource acquisition, technological development and ecosystem impact (e.g., diamond, coal or gold mining; deforestation).			**XX**		**XX**	**X**		**XX**	**X**
13.B.3e Identify advantages and disadvantages of natural resource conservation and management programs.			**XX**		**XX**	**X**		**XX**	**XX**
13.B 3f Apply classroom-developed criteria to determine the effects of policies on local science and technology issues (e.g., energy consumption, landfills, water quality).	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**