

# IES Correlation for Ohio

## 7TH GRADE SCIENCE

### Correlation Key:

"X" Coverage = Coverage in Student Edition and/or Teacher Edition supports the development of the concept.

"XX" In-depth = In-depth coverage of concept in Student Edition.

Climate and Weather	Dynamic Planet	Energy Resources	Fossils	Materials and Minerals	Oceans	Rocks and Landforms	Soil	Water as a Resource
---------------------	----------------	------------------	---------	------------------------	--------	---------------------	------	---------------------

### Earth and Space Science

#### Earth Systems

1. Explain the biogeochemical cycles which move materials between the lithosphere (land), hydrosphere (water), and atmosphere (air).	XX	X	X	X	X	XX	XX	X	XX
2. Explain that Earth's capacity to absorb and recycle materials naturally (e.g., smoke, smog, sewage) can change the environmental quality depending on the length of time involved (e.g., global warming).	X		X		X	X			X
3. Describe the water cycle and explain the transfer of energy between the atmosphere and hydrosphere.	XX					X			XX
4. Analyze data on the availability of fresh water that is essential for life and for most industrial and agricultural processes. Describe how rivers, lakes and groundwater can be depleted or polluted, becoming less hospitable to life and even becoming unavailable or unsuitable for life.			X						XX
5. Make simple weather predictions based on the changing cloud types associated with frontal systems.	XX								
6. Determine how weather observations and measurements are combined to produce weather maps and that data for a specific location at one point in time can be displayed in a station model.	XX								
7. Read a weather map to interpret local, regional and national weather.	XX								
8. Describe how temperature and precipitation determine climatic zones (biomes) (e.g., desert, grasslands, forests, tundra, alpine).	XX			X					
9. Describe the connection between the water cycle and weather-related phenomenon (e.g., tornadoes, floods, droughts, hurricanes).	XX					X			

### Life Sciences

#### Characteristics and Structure of Life

1. Investigate the great variety of body plans and internal structures found in multicellular organisms.				X					
--	--	--	--	---	--	--	--	--	--

#### Diversity and Interdependence of Life

2. Investigate how organisms or populations may interact with one another through symbiotic relationships and how some species have become so adapted to each other that neither could survive without the other (e.g., predator-prey, parasitism, mutualism, commensalism).				X		X			
3. Explain how the number of organisms an ecosystem can support depends on adequate biotic (living) resources (e.g., plants, animals) and abiotic (non-living) resources (e.g., light, water, soil).				X		X			
4. Investigate how overpopulation impacts an ecosystem.				X					
5. Explain that some environmental changes occur slowly while others occur rapidly (e.g., forest and pond succession, fires and decomposition).		X		X			X		
6. Summarize the ways that natural occurrences and human activity affect the transfer of energy in Earth's ecosystems (e.g., fire, hurricanes, roads, oil spills).	X	X	X		X			X	X
7. Explain that photosynthetic cells convert solar energy into chemical energy that is used to carry on life functions or is transferred to consumers and used to carry on their life functions.			X	X					

<b>Correlation Key:</b> "X" Coverage = Coverage in Student Edition and/or Teacher Edition supports the development of the concept. "XX" In-depth = In-depth coverage of concept in Student Edition.	<b>Climate and Weather</b>	<b>Dynamic Planet</b>	<b>Energy Resources</b>	<b>Fossils</b>	<b>Materials and Minerals</b>	<b>Oceans</b>	<b>Rocks and Landforms</b>	<b>Soil</b>	<b>Water as a Resource</b>
<b>Evolutionary Theory</b>									
8. Investigate the great diversity among organisms.				XX					
<b>Physical Sciences</b>									
<b>Nature of Matter</b>									
1. Investigate how matter can change forms but the total amount of matter remains constant.		X	X		X		X	X	
<b>Nature of Energy</b>									
2. Describe how an object can have potential energy due to its position or chemical composition and can have kinetic energy due to its motion.			X						
3. Identify different forms of energy (e.g., electrical, mechanical, chemical, thermal, nuclear, radiant, and acoustic).			XX						
4. Explain how energy can change forms but the total amount of energy remains constant.			X						
5. Trace energy transformation in a simple closed system (e.g., a flashlight).		X	X			X			
<b>Science and Technology</b>									
<b>Understanding Technology</b>									
1. Explain how needs, attitudes and values influence the direction of technological development in various cultures.	X	X	X	X	X	X	X	X	X
2. Describe how decisions to develop and use technologies often put environmental and economic concerns in direct competition with each other.	X	X	X	X	X	X	X	X	X
3. Recognize that science can only answer some questions and technology can only solve some human problems.	X	X	X	X	X	X	X	X	X
<b>Abilities To Do Technological Design</b>									
4. Design and build a product or create a solution to a problem given two constraints (e.g., limits of cost and time for design and production, supply of materials and environmental effects).	X	X	X	X	X	X	X	X	X
<b>Scientific Inquiry</b>									
<b>Doing Scientific Inquiry</b>									
1. Explain that variables and controls can affect the results of an investigation and that ideally should be tested at a time; however it is not always possible to control all variables.	XX	XX	XX	XX	XX	XX	XX	XX	XX
2. Identify simple independent and dependent variables.	XX	XX	XX	XX	XX	XX	XX	XX	XX
3. Formulate and identify questions to guide scientific investigations that connect to science concepts and can be answered through scientific investigations.	XX	XX	XX	XX	XX	XX	XX	XX	XX
4. Choose the appropriate tools and instruments and use relevant safety procedures to complete scientific investigations.	XX	XX	XX	XX	XX	XX	XX	XX	XX

<b>Correlation Key:</b> <b>"X" Coverage</b> = Coverage in Student Edition and/or Teacher Edition supports the development of the concept. <b>"XX" In-depth</b> = In-depth coverage of concept in Student Edition.	Climate and Weather	Dynamic Planet	Energy Resources	Fossils	Materials and Minerals	Oceans	Rocks and Landforms	Soil	Water as a Resource
5. Analyze alternative scientific explanations and predictions and recognize that there may be more than one good way to interpret a given set of data.	XX	XX	XX	XX	XX	XX	XX	XX	XX
6. Identify faulty reasoning and statements that go beyond the evidence or misinterpret the evidence.	XX	XX	XX	XX	XX	XX	XX	XX	XX
7. Use graphs, tables and charts to study physical phenomena and infer mathematical relationships between variables (e.g., speed, density).	XX	XX	XX	XX	XX	XX	XX	XX	XX
<b>Scientific Ways of Knowing</b>									
<b>Ethical Practices</b>									
1. Show that the reproducibility of results is essential to reduce bias in scientific investigations.	XX	XX	XX	XX	XX	XX	XX	XX	XX
2. Describe how repetition of an experiment may reduce bias.	XX	XX	XX	XX	XX	XX	XX	XX	XX
<b>Science and Society</b>									
3. Describe how the work of science requires a variety of human abilities and qualities that are helpful in daily life (e.g., reasoning, creativity, skepticism, openness).	XX	XX	XX	XX	XX	XX	XX	XX	XX