

IES Correlations to Mississippi Grades 6 - 8 Earth and Space Science Related 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
Science Framework (Sixth)									
1. Investigate structure and functions in living systems. (L, E)									
a. Identify, compare, and contrast levels of organization including cells, tissues, organs, organ systems, and organisms.						X			
b. Compare and contrast patterns and interactions of ecosystems and biomes.	X			X		X			
3. Explore how changing resources will influence the regulation and behavior of organisms. (L,E)									
a. Evaluate the significance of resources required by organisms.				X		X			
b. Investigate, compare/contrast ways organisms adapt to their environment.				X		XX		X	
4. Explore how different populations determine the formation of an ecosystem. (L, E)									
a. Compare/contrast the roles among producers, consumers, and decomposers in a food web.				X		X			
b. Manipulate resources and other factors (living and nonliving) that promote and limit growth of populations in an ecosystem.				X		X			
5. Explore the unique characteristics and adaptations of organisms. (L, E)									
a. Evaluate and chart the similarities of organisms.				X					
b. Propose and relate environmental changes and the adaptive characteristics that influence the extinction of a species.				XX		X			
6. Model the structure of the Earth system past and present. (E)									
a. Construct and explain the structure of the atmosphere (gas-air), hydrosphere (liquid-water), lithosphere (solid-land), and changes that occur within.	XX	XX	X	X	X	XX	XX	X	XX
b. Examine the changes and processes that alter the Earth's system.	XX	XX	X		X	XX	XX	XX	XX
c. Analyze fossils as indicators of how life and environmental conditions have changed.				XX					
7. Investigate the Earth in relation to the solar system. (E, P)									
a. Demonstrate how the Earth's motion influences the day, year, phases of the moon, and eclipses.									
b. Explore how gravity influences the motion of all celestial bodies.									
c. Demonstrate how the tilt of the Earth axis and Earth revolution around the Sun create the seasons.									
8. Investigate structure, properties, and changes of matter.									
a. Analyze properties such as density, boiling point, and solubility of a substance.			X		XX		X	X	X
b. Record and interpret physical and chemical changes using everyday substances.			X		XX		XX	XX	X
c. Differentiate between common elements that combine chemically to produce compounds.			X		X		X		X

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d. Demonstrate the ability to use simple measuring devices using metric and English units.	XX	XX	XX	XX	XX	XX	XX	XX	XX
9. Evaluate the effect of force on the motion of an object.									
a. Analyze, measure, and graph the motion of an object.		X						X	
b. Experiment and measure the effect of force on an object.								X	
10. Examine the transfer of energy in many different forms. (E, L, P)									
a. Observe and manipulate energy as potential or kinetic.		X	XX			X		X	
b. Investigate forms of energy such as heat, sound, light, or electricity.		X	XX			X		X	
c. Recognize the Sun as a major source of energy.	X		XX			X			X
Science Framework (Seventh)									
Content Strands: Life Science (L), Earth and Space Science (E), Physical Science (P)									
4. Explore how environmental factors of population influence the formation of an ecosystem. (L,E)									
a. Describe the process of photosynthesis and the use of its products.			XX			XX			
b. Design an experiment in plant behavior to include responses to water, gravity, and light.						X			
c. Investigate and research environmental concerns of the land, water, and air.	XX	X	X		X	X	X	X	XX
d. Analyze the importance of biological diversity in communities and ecosystems.				X		X			
6. Explore the composition and changes of the Earth system. (E,P)									
a. Identify minerals by using any or all of the following tests: streak, cleavage, fracture, hardness, specific gravity, and special properties.					XX		X		
b. Research and explain how crustal movements result in earthquakes, volcanoes, mountain formation, etc.		XX				XX	X		
c. Distinguish between chemical and physical weathering.							XX	X	
d. Identify how forces such as erosion and deposition create landforms.		X				X	XX		
e. Research landforms and fossils specific to Mississippi.		X	X	XX	X	X	XX		X
f. Compare properties and composition of salt water, fresh water, and brackish water.						XX			XX
g. Investigate the interactive forces that produce weather to include moisture, temperature, fronts, air masses, and cloud formations.	XX								
7. Explain the causes of lunar phases, eclipses, and Earth seasons. (E)									
a. Distinguish between radiating objects (the Sun and the stars) and reflecting objects (the planets and their moons).									
b. Characterize lunar phases in terms of their appearance, their visibility at a given time of day or night, and their progression through time.									
c. Illustrate the relationship between lunar phases and the phase angle between the sun and the moon as seen from Earth.									
d. Illustrate the alignments of the Earth, the moon, and the Sun, which give rise to solar and lunar eclipses and explain why these eclipses do not occur every month.									

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e. Explain how the position of the earth in relation to the sun has an effect on seasonal weather changes.									
10. Investigate the sources of energy. (P, E)									
a. Investigate the Sun as a major source of energy.	X		XX			X			X
b. Compare and contrast how the three forms of thermal energy flow.		X	XX			X			X
c. Research one or more of the sources of energy (nuclear, solar, wind, geothermal, hydro).			XX				X		
Science Framework (Eighth)									
Content Strands: Life Science (L), Earth and Space Science (E), Physical Science (P)									
3. Determine the economic factors that influence the regulation and behavior of organisms. (L,E)									
a. Appraise the economic factors associated with regulations and protection of the environment.	X		X		X		X	X	X
b. Explain environmental degradation to include overpopulation, bio-diversity, sea-level rise, and enhanced greenhouse effect.	XX		X		X		X	X	XX
4. Examine the physical factors of populations as they relate to the formation of ecosystems. (L, E)									
a. Analyze the adaptation of representative organisms to aquatic or terrestrial environments.				X		X			
b. Evaluate the effects of urbanization on aquatic or terrestrial ecosystems.				X		X			
c. Analyze how predation and food webs help structure communities.				X		X			
5. Investigate atmospheric movements that affect the Earth system.									
a. Analyze the cycles including nitrogen, water, carbon dioxide, and oxygen cycle.	XX					X			XX
b. Use weather maps for analyzing and predicting weather.	XX								
c. Construct a weather map to forecast the weather over a region, giving temperature in degrees Celsius	XX								
6. Investigate the Earth's geological past. (E, L)									
a. Identify the components/stages of a geological timetable and discuss how the environment (including animals and landforms) has changed in each period.		X		XX	X	X	X		
b. Describe methods and tools used in dating rocks and fossils.		X		XX	X		X		
c. Discuss Mississippi geological areas.		X		XX	X		XX		
7. Describe the appearance and nature of our galaxy and the universe. (E)									
a. Explain the relationship between distance and light-travel time (light-year).									
b. Identify and describe deep-sky objects visible from Earth (diffuse nebulae, galactic and globular clusters, planetary nebulae, supernova remnants, "spiral nebulae").									
c. Identify and describe the Milky Way as the galaxy to which we belong.									
d. Identify and describe our galaxy in terms of its components (core of older stars, spiral arms of gas and dust with younger stars, halo, "dark matter") and our location within it.									
e. Identify and describe "spiral nebulae" as distant galaxies.									

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f. Identify and describe different types of galaxies in terms of their shape (spiral, barred spiral, elliptical, irregular) and level of activity.									
10. Investigate the transfer of energy. (P)									
a. Measure the transfer of heat between two objects using the Celsius scale.		XX	XX		X	X			
b. Illustrate wave motion in different media.		XX	XX			XX			
c. Research and discuss energy transformation.		X	XX		X	X			
d. Convert one energy form to another.		X	XX		X	X			
e. Analyze mechanical waves (sound waves, water waves, earthquake waves, etc.) and electromagnetic waves (light, infrared, x-rays, etc.).		XX	XX			XX			