Indiana Department of Education

Dr. Katie Jenner, Secretary of Education

Grade 6 Correlation Guide
2016 Science Indiana Academic Standards to 2022 Performance Expectations*

Physical Science	
2016 Indiana Academic Standard	**2022 Performance Expectation**
6.PS.4 Investigate the properties of light, sound, and other energy waves and how they are reflected, absorbed, and transmitted through materials and space.	**MS-PS4-1.** Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.
	MS-PS4-2. Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.
	MS-PS4-3. Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.

Life Science	
2016 Indiana Academic Standard	**2022 Performance Expectation**
6.LS.2 Describe the role of photosynthesis in the flow of energy in food chains, energy pyramids, and food webs. Create diagrams to show how the energy in animals' food used for bodily processes was once energy from the sun.	**MS-LS1-6.** Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.
	MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
6.LS.3 Describe specific relationships (predator/prey, consumer/producer, parasite/host) and symbiotic relationships between organisms. Construct an explanation that predicts why patterns of interactions develop between organisms in an ecosystem.	**MS-LS2-2.** Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

6.LS.2 Describe the role of photosynthesis in the flow of energy in food chains, energy pyramids, and food webs. Create diagrams to show how the energy in animals' food used for bodily processes was once energy from the sun.	**MS-LS2-3.** Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.
6.LS.4 Investigate and use data to explain how changes in biotic and abiotic components in a given habitat can be beneficial or detrimental to native plants and animals.	**MS-LS2-4.** Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.
	MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

Earth and Space Science	
2016 Indiana Academic Standard	**2022 Performance Expectation**
6.ESS.2 Design models to describe how Earth's rotation, revolution, tilt, and interaction with the sun and moon cause seasons, tides, changes in daylight hours, eclipses, and phases of the moon.	**MS-ESS1-1.** Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.
6.ESS.1 Describe the role of gravity and inertia in maintaining the regular and predictable motion of celestial bodies.	**MS-ESS1-2.** Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.
6.ESS.3 Compare and contrast the Earth, its moon, and other planets in the solar system, including comets and asteroids. (Comparisons should be made in regard to size, surface features, atmospheric characteristics, and the ability to support life.)	**MS-ESS1-3.** Analyze and interpret data to determine scale properties of objects in the solar system.

Engineering Design

2016 Indiana Academic Standard	2022 Performance Expectation
6-8.E.1 Identify the criteria and constraints of a design to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.	**6-8.ETS1-1.** Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
6-8.E.2 Evaluate competing design solutions using a systematic process to identify how well they meet the criteria and constraints of the problem.	**6-8.ETS1-2.** Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
6-8.E.3 Analyze data from investigations to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.	**6-8.ETS1-3.** Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.
6-8.E.4 Develop a prototype to generate data for repeated investigations and modify a proposed object, tool, or process such that an optimal design can be achieved.	**6-8.ETS1-4.** Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

*Performance expectations are three dimensional. All three dimensions (Disciplinary Core Ideas, Science and Engineering Practices, and Crosscutting Concepts) must be included as part of effective instruction.

For more information, see the Indiana Department of Education's Indiana Academic Standards webpage or contact the Office of Teaching and Learning.