Indiana Science

Grade 6

Waves and Their Applications in Technologies for Information Transfer	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-PS4-1
	2	Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials. MS-PS4-2
	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. MS-PS4-3
From Molecules to Organisms: Structures and Processes	1	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-LS1-6
Ecosystems: Interactions, Energy, and Dynamics	1	Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. MS-LS2-1
	2	Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. MS-LS2-2
	3	Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem. MS-LS2-3
	4	Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations. MS-LS2-4
	5	Evaluate competing design solutions for maintaining biodiversity and ecosystem services. MS-LS2-5
Earth's Place in the Universe	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. MS-ESS1-1
	2	Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system. MS-ESS1-2
	3	Analyze and interpret data to determine scale properties of objects in the solar system. MS-ESS1-3

Engineering Design

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.** MS-ETS1-1

2. **Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.** MS-ETS1-2

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.** MS-ETS1-3

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.** MS-ETS1-4