Nex t Generation Science Standards

Grade	PE code	Category	Performance Expectation
6-8	MS-PS3-1	Energy	Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.
6-8	MS-PS3-2	Energy	Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.
6-8	MS-PS3-5	Energy	Construct, use, and present arguments to support the claim that when the motion energy of an object changes, energy is transferred to or from the object.
6-8	MS-ETS1-1	Engineering Design	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	MS-ETS1-2	Engineering Design	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
6-8	MS-ETS1-3	Engineering Design	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	MS-ETS1-4	Engineering Design	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.
9-12	HS-PS2-2	Motion and Stability: Forces and Interactions	Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.
9-12	HS-PS3-3	Energy	Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy
9-12	HS-PS4-5	Waves and Their Applications in Technologies for Information Transfer	Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.
9-12	HS-ETS1-1	Engineering Design	Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
9-12	HS-ETS1-2	Engineering Design	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
9-12	HS-ETS1-3	Engineering Design	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.