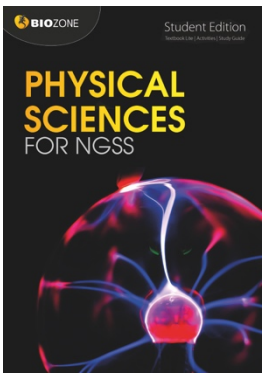
Alignment of BIOZONE's Physical Science for NGSS (1st edition) to Idaho HS Physical Sciences: Physics (April 2025)



PUBLISHER INFORMATION

- Publisher Name: BIOZONE Corporation
- Title: Physical Sciences for NGSS
- ISBN #: 978-1-927309-79-7
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- Note 1: Correlation locations are activity numbers (not page numbers).
- Note 2: Correlations do not usually include reference to the Science practices chapter.
- Note 3: Correlations to the standard statement include background material to address the specific objectives.

High School Physical Science: Physics

Motion and Stability: Forces and Interactions ***Students who demonstrate understanding can:***	**Justification or Comments**
Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration. (1.1)	Activities 69, 77
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. (1.2)	Activities 73, 77 Related activities (background) 71, 72
Apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision. (1.3)	Activity 75 Related activities (background) 72, 73, 77
Use mathematical representations of Newton's Law of Gravitation and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects. (1.4)	Activities 83, 84, 91 Related activities (background) 79-82, 85-88
Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current. (1.5)	Activity 86 Related activities (background) 78-88, 91, 93
Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials. (1.6)	Activities 31, 89

Energy *Students who demonstrate understanding can:*	Justification or Comments
Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known. (2.1)	Activity 101 Related activities (background) 93, 95-98
Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative positions of particles (objects). (2.2)	Activity 97 Related activities (background)93, 98, 103, 105
Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy. (2.3)	Activity 108 Related activities (background) 88, 93, 97, 103, 107
Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics). (2.4)	Activities 104, 105 Related activities (background) 46-48, 52, 55, 103-105, 107, 110
Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction. (2.5)	Activities 84, 87 Related activities (background) 83, 85, 86

Waves *Students who demonstrate understanding can:*	Justification or Comments
Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media. (3.1)	Activity 120 Related activities (background) 112, 113, 115-118
Evaluate questions about the advantages of using digital transmission and storage of information. (3.2)	Activities 130, 132
Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other. (3.3)	Activities 117, 122, 123 Related activities (background) 112, 116
Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter. (3.4)	Related activities (background) 122,125, 127
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. (3.5)	Activities 129, 130