APPENDIX B (CONTINUED)

Lesson correlation to NGSS Performance Expectations

Middle School

Next Generation Science Standards (NGSS) Alignment

NGSS Performance Expectations	Lessons													
Middle School	Penny for Your Thoughts	Pain in the Neck	Momentum Bashing 1	Momentum Bashing 2	Egg Crash!	Conservation: It's the Law!	Ball of Energy	Twirling Penny	Think Fast, Act Fast	Distracted Driving Dangers	Stressing Silly Putty	Stressing Over Pencil Pressure	Paper Car Crash!	Project Pedestrian
MS-PS- 2-1. Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.						✓								
MS-PS2-2. Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.	✓	✓	✓	✓	✓	✓		✓			✓			✓
MS-PS3-1. 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.				✓										
MS-PS3-5. Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.						✓	✓				✓			
MS-LS1-3. Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.									✓					
MS-LS1-8. Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.									✓	✓				
MS-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.				✓	✓								✓	✓
MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.					✓								✓	✓
MS-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.					✓								✓	✓
MS-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.													✓	✓