

APPENDIX B (CONTINUED)

Lesson correlation to NGSS Performance Expectations

Grades 3-5

Next Generation Science Standards (NGSS) Alignment	
NGSS Performance Expectations	Lessons
Grades 3-5	Lessons
5-PS1-3. Make observations and measurements to identify materials based on their property.	Penny for Your Thoughts ✓
5-PS1-4. Conduct an investigation to determine whether the mixing of two or more substances results in new substances.	Penny for Your Thoughts ✓
5-PS2-1. Support an argument that the gravitational force exerted by Earth on objects is directed down.	Pain in the Neck ✓ Twirling Penny ✓
4-PS3-1. Use evidence to construct an explanation relating the speed of an object to the energy of that object.	Pain in the Neck ✓ Conservation: It's the Law! ✓ Egg Crash! ✓ Paper Car Crash! ✓
4-PS3-3. Ask questions and predict outcomes about the changes in energy that occur when objects collide.	Pain in the Neck ✓
4-LS1-2. Use a model to describe that animals receive different types of information through their senses, process information in the brain, and respond to the information in different ways.	Think Fast, Act Fast ✓ Stressing Silly Putty ✓
3-PS2-1. Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.	Penny for Your Thoughts ✓ Momentum Bashing 1 ✓ Momentum Bashing 2 ✓ Paper Car Crash! ✓
3-PS2-2. Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.	Pain in the Neck ✓ Momentum Bashing 1 ✓ Momentum Bashing 2 ✓ Paper Car Crash! ✓
3-5-ETS1-1. Define a simple design problem reflecting a need or want that includes specified criteria for success and constraints on materials, time, or cost.	Paper Car Crash! ✓ Stressing Over Pencil Pressure ✓
3-5-ETS1-2. Generate and compare multiple solutions to a problem based on how well each is likely to meet the criteria and constraints of a problem.	Paper Car Crash! ✓ Stressing Over Pencil Pressure ✓
3-5-ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	Paper Car Crash! ✓ Stressing Over Pencil Pressure ✓