Core Idea PS1: Matter and Its Interactions

Is It Matter? (Keeley et al., 2005)
Cookie Crumbles (Keeley et al., 2005)
Ice Cubes in a Bag (Keeley et al., 2005)
Lemonade (Keeley et al., 2005)
Seedlings in a Jar (Keeley et al., 2005)
Is It Melting? (Keeley et al., 2005)
Is It Matter? (Keeley et al., 2005)
Is It Made of Molecules? (Keeley et al., 2005)
Comparing Cubes (Keeley et al., 2007)
Floating Logs (Keeley et al., 2007)
Floating High and Low (Keeley et al., 2007)
Solids and Holes (Keeley et al., 2007)
Turning the Dial (Keeley et al., 2007)
Boiling Time and Temperature (Keeley et al., 2007)
Freezing Ice (Keeley et al., 2007)
What’s In the Bubbles (Keeley et al., 2007)
Pennies (Keeley et al., 2008)
Is It a Solid (Keeley et al., 2008)
Thermometer (Keeley et al., 2008)
Floating Balloon (Keeley et al., 2008)
Hot and Cold Balloons (Keeley et al., 2008)
Sugar Water (Keeley and Tugel, 2009)
Iron Bar (Keeley and Tugel, 2009)
Salt Crystals (Keeley and Tugel, 2009)
Pizza Dough (Keeley and Harrington, 2010)

PS1.B: Chemical Reactions
The Rusty Nails (Keeley et al., 2005)
Chemical Bonds (Keeley et al., 2007)
Burning Paper (Keeley and Tugel, 2009)
Nails in a Jar (Keeley and Tugel, 2009)

PS1.C: Nuclear Processes
(To be addressed in future Uncovering Student Ideas in Science books)
Core Idea PS2: Motion and Stability: Forces and Interactions

PS2.A: Forces and Motion

Rolling Marbles (Keeley et al., 2008)
Dropping Balls (Keeley et al., 2008)
How Far Did It Go? (Keeley and Harrington, 2010)
Skate Park (Keeley and Harrington, 2010)
Following Jack- Part 1 (Keeley and Harrington, 2010)
Following Jack- Part 2 (Keeley and Harrington, 2010)
Go Cart Test Run (Keeley and Harrington, 2010)
Checking the Speedometer (Keeley and Harrington, 2010)
Speed Units (Keeley and Harrington, 2010)
Just Rolling Along (Keeley and Harrington, 2010)
Crossing the Finish Line (Keeley and Harrington, 2010)
NASCAR Racing (Keeley and Harrington, 2010)
Roller Coaster Ride (Keeley and Harrington, 2010)
Rolling Marbles (Keeley and Harrington, 2010)
Force and Motion Ideas (Keeley and Harrington, 2010)
Outer Space Push (Keeley and Harrington, 2010)
Riding in the Parade (Keeley and Harrington, 2010)
Spaceships (Keeley and Harrington, 2010)
Ball on a String (Keeley and Harrington, 2010)
Pulling on a Spool (Keeley and Harrington, 2010)
Lifting Buckets (Keeley and Harrington, 2010)
Riding in a Car (Keeley and Harrington, 2010)
The Swinging Pendulum (Keeley and Harrington, 2010)

PS2.B: Types of Interactions

Talking about Gravity (Keeley et al., 2005)
Apple on a Desk (Keeley et al., 2008)
Magnets in Water (Keeley and Tugel, 2009)
Talking about Forces (Keeley and Harrington, 2010)
Does It Have to Touch? (Keeley and Harrington, 2010)
Friction (Keeley and Harrington, 2010)
A World Without Friction (Keeley and Harrington, 2010)
Apple in a Plane (Keeley and Harrington, 2010)
Why Things Fall (Keeley and Harrington, 2010)
Finger Strength Contest (Keeley and Harrington, 2010)
Equal and Opposite (Keeley and Harrington, 2010)
What Will Happen to the Weight? (Keeley and Harrington, 2010)
Weighing Water (Keeley and Harrington, 2010)
Experiencing Gravity (Keeley and Harrington, 2010)
Apple on the Ground (Keeley and Harrington, 2010)
Free-Falling Objects (Keeley and Harrington, 2010)
The Tower Drop (Keeley and Harrington, 2010)
Where Do You Find Gravity? (Keeley and Sneider, 2012)
Gravity in Other Planetary Systems (Keeley and Sneider, 2012)

PS2.C: Stability and Instability in Physical Systems
Skate Park (Keeley and Harrington, 2010)
Force and Motion Ideas (Keeley and Harrington, 2010)
Balance Beam (Keeley and Harrington, 2010)

Core Idea PS3: Energy

PS3.A: Definitions of Energy
Warming Water (Keeley and Tugel, 2009)
(To be further addressed in future Uncovering Student Ideas in Science books)

PS3.B: Conservation of Energy and Energy Transfer
The Mitten Problem (Keeley et al., 2005)
Objects and Temperature (Keeley et al., 2005)
Ice Cold Lemonade (Keeley et al., 2007)
Mixing Water (Keeley et al., 2007)
Batteries, Bulbs, and Wires (Keeley et al., 2008)
Ice Water (Keeley and Tugel, 2009)

PS3.C: Relationship Between Energy and Forces
Rolling to a Stop (Keeley and Harrington, 2010)
Gravity Rocks (Keeley and Harrington, 2010)
Lifting a Rock (Keeley and Harrington, 2010)
Bicycle Gears (Keeley and Harrington, 2010)
Rescuing Isabelle (Keeley and Harrington, 2010)

PS3.D: Energy in Chemical Processes and Everyday Life
(To be addressed in future Uncovering Student Ideas in Science books)

Core Idea PS4: Waves and Their Applications in Technologies for Information Transfer

PS4.A: Wave Properties
Making Sound (Keeley et al., 2005)
(To be further addressed in future Uncovering Student Ideas in Science books)

PS4.B: Electromagnetic Radiation
Can It Reflect Light? (Keeley et al., 2005)
Apple in the Dark (Keeley et al., 2005)
Birthday Candles (Keeley et al., 2005)

www.uncoveringstudentideas.org
Mirror on the Wall (Keeley et al., 2008)

PS4.C: Information Technologies and Instrumentation
(To be addressed in future Uncovering Student Ideas in Science books)

Books in the USI series cited:


