

# 2019 Science Expo

## Next Generation Science Standards Activity Mapping

Dimension 1 Scientific and Engineering Practices:		Dimension 2 Crosscutting Concepts:	
Asking questions (for science) and defining problems (for engineering) Developing and using models Planning and carrying out investigations Analyzing and interpreting data Using mathematics and computational thinking		Patterns Cause and effect: Mechanism and explanation Scale, proportion, and quantity Systems and system models Energy and matter: Flows, cycles, and conservation Structure and function Stability and change	
#	Standard Description		
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.		
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.		
3-PS2-3	Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.		
3-PS2-4	Define a simple design problem that can be solved by applying scientific ideas about magnets.		
4-PS3-1	Use evidence to construct an explanation relating the speed of an object to the energy of that object.		
4-PS3-2	Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.		
4-PS3-3	Ask questions and predict outcomes about the changes in energy that occur when objects collide.		
4-PS3-4	Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.		
4-PS4-1	Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.		
4-PS4-2	Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.		
5-PS1-1	Develop a model to describe that matter is made of particles too small to be seen.		
5-PS1-2	Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.		
5-PS1-3	Make observations and measurements to identify materials based on their properties.		
5-PS1-4	Conduct an investigation to determine whether the mixing of two or more substances results in new substances.		
5-PS2-1	Support an argument that the gravitational force exerted by Earth on objects is directed down.		

Activity Name	3-PS2-1	3-PS2-2	3-PS2-3	3-PS2-4	4-PS3-1	4-PS3-2	4-PS3-3	4-PS3-4	4-PS4-1	4-PS4-2	4-PS4-3	5-PS1-1	5-PS1-2	5-PS1-3	5-PS1-4	5-PS2-1	5-PS3-1
Automatic Balloon Inflator												x					
Mystery Candle												x					
Balloon in a Bottle												x					
Magic Card	x											x				x	
The Power of Words																x	
Gravity Keeps You Down		x														x	
Strike a Balance	x															x	
Friction Frenzy	x	x															
Magnet Magic			x	x													
Magnet Mania			x	x													
Eddy Currents				x		x											
H2Olympics			x	x													
Show Me the Momentum!								x									
Momentum Machine	x	x															
Give it a Ride					x												
Keep Your Eye on the Ball!								x									
Some Like it Hot						x		x									
Color Combinations										x							
Colored Shadows										x							
Three Little Pigments										x							
Great Wall of Color										x							
The Sky is Purple										x							
Super Spectroscopes										x							
Refraction Action										x							
Laser Light Show								x		x							
It's a Mirror-cle!										x							
Good Vibrations									x								
Musical Coat Hangers									x								
Resonance in Motion									x								
Matter on the Move												x					
Phase Change Poppers												x	x				
Invisible Mass													x				
It's a Gas												x		x	x		
Slime Time														x	x		
Bean Box												x		x			
Floating Golf Ball												x					

Gassy Lava Lamp															x				
Hot and Cold Density															x				
Changing the Density of an Object															x				
Separation Anxiety																x			
Shake It Up!																x		x	
Exothermic vs. Endothermic																		x	
		4	3	3	4	1	2	1	3	3	0	4	6	4	6	4	4	4	0