

**Seventh Grade**  
**PA Academic Standards at the Lancaster Science Factory Exhibits**  
 Technology and Engineering Education (Standard category (3.4.)), Part 1

Topic	Exhibit	A. The Scope of Technology			B. Technology and Society				C. Technology and Engineering Design		
		Strand 1. Characteristics of Technology	Strand 2. Core Concepts of Technology	Strand 3. Technology Connections	Strand 1. Effects of Technology	Strand 2. Technology and Environment	Strand 3. Society and Development of Technology	Strand 4. Technology and History	Strand 1. Design Attributes	Strand 2. Engineering Design	Strand 3. Research & Development, Invention & Innovation, Experimentation/Problem Solving and Troubleshooting
Acoustics	Physics of Sound: Bongophone			X							
	Physics of Sound: Drumbone			X							
Energy and Magnetism	Crank Power			X			X				
	Electrical Circuit								X	X	
	Electrical Conductors & Insulators								X	X	
	Light It Up	X	X	X	X	X	X				
	Magnetic Field Visualization: At the Poles			X							
	Magnetic Sculpture	X									
	Rockin' Radiation			X	X	X					
	Dam the Creek				X	X			X	X	X
	Flight Deck	X		X	X				X	X	X
	Tennis Ball Launcher			X							
	Minimal Surfaces			X	X				X	X	X
	Parachute Launcher	X		X							
Light and Vision	Water Table: Hero's Fountain			X				X			
	Benham Disk				X						
	Color Filters				X						
	Light Room: Lenses, Mirrors and Filters				X implied						
	Light Room: Einstein's Face Illusion				X						
	Scope on a Rope				X						
Mechanics and Motion	Can You Lift 100 Pounds?				X						
	Gear Power				X				X	X	
	Kinetic Energy Machine	X	X								
	Leverage Learning	X			X						
	Pendulum Booth: Compare Amplitude/Mass/Length			X							
	Pendulum Booth: Magnetic Pendulum			X							
	Pendulum Booth: Pegboard Pendulum			X							
	Pendulum Booth: Pendulum Snake	X		X							
	Pendulum Booth: Sand Pendulums			X							
	Race Track Table: Galileo Track			X							
	Race Track Table: High Road ~ Hilly Road			X							
	Race Track Table: High Road ~ Low Road			X							
	Race Track Table: Identical Tracks			X							
Puzzles and Brain Teasers	Roller Coaster	X		X	X				X	X	X
	Hyperbolic Slot				X						
	K'NEX Building Zone									X	
Structural Engineering	K'NEX Mini-Racers								X	X	X
	Catenary Arch								X	X	X
	Ceiling Beam				X			X			
	Earthquake				X	X			X	X	X
	Truss Bridge	X			X	X		X	X	X	X