Washington Township School District			
STEM/Makerspace Curriculum			
Grade:	6	**Unit/Project Title:**	Rubber Band Cars
Timeframe:	2-4 classes	**Extension of Science Unit:**	Forces and Motion
NJ Learning Standard(s):	***6-8.MS-PS2-1.6.1*** *- [Practice] - Apply scientific ideas or principles to design an object, tool, process or system.* ***6-8.MS-PS2-2.PS2.A.1*** *- [Disciplinary Core Idea] - The motion of an object is determined by the sum of the forces acting on it; if the total force on the object is not zero, its motion will change. The greater the mass of the object, the greater the force needed to achieve the same change in motion. For any given object, a larger force causes a larger change in motion.* ***6-8.MS-PS2-2.PS2.A.2*** *- [Disciplinary Core Idea] - All positions of objects and the directions of FORCES and motions must be described in an arbitrarily chosen reference frame and arbitrarily chosen units of size. In order to share information with other people, these choices must also be shared.* ***6-8.MS-PS2-3.1.1*** *- [Practice] - Ask questions that can be investigated within the scope of the classroom, outdoor environment, and museums and other public facilities with available resources and, when appropriate, frame a hypothesis based on observations and scientific principles.*		
Objective:	SWBAT construct a car that goes really fast and far (at least four feet), with a rubber band power source and only two wheels.		
Brief description of the experiences: (How does it look and feel?)	Students will work collaboratively in a “hands on” experience with limited materials to build a little car.		
What will students “know” and “be able to do” as a result of having experienced the unit/project? (How is the student’s knowledge transformed?)	Students will know that they need the rubber band wound up tight- potential energy - to make the car go -kinetic energy. They will be able to cut and tape cardboard, make adjustments to their materials to get them to work better.		
What is possible now that wasn’t before? (i.e. NJSLS and NJMLS practices exemplified)	Students will: • Conduct many trials and errors to achieve objective • Analyze failures and successes • Identify factors impacting overall achievement		

Supplies Needed:	Per group: • 2 compact discs (CDs) • Corrugated cardboard (one piece about 5 1/2 inches square) • 2 faucet washers (Size: 1/4 inch Large) • Poster putty (1/4 package—buy the tackiest available) • Rubber bands of different lengths and widths • Ruler • Scissors • Tape (masking or duct) • 1 wooden skewer (buy the thinnest available)
Resources to Support Unit:	http://pbskids.org/designsquad/pdf/parentseducators/ds_pe_ed_guide_unit2.pdf http://pbskids.org/designsquad/pdf/parentseducators/ds_pe_event_guide_rubber_band_car.pdf