Teacher: Helen Krasnow	Subject(s): Science Grades 5-6	Month: May
Unit: SIMPLE MACHINES		

ESSENTIAL QUESTIONS	CONTENT	SKILLS	ASSESSMENTS	LESSONS

▪ What is work?
▪ What is simple about simple machines?
▪ How do machines help us live our lives?
▪ Are all machines good?
	▪ Work and energy
	▪ SIMPLE MACHINES
	  ▪ Lever – 1st, 2nd , 3rd class levers
	  ▪ Pulleys
	  ▪ Inclined planes
	  ▪ Screws
	  ▪ Wheels & Axles
	  ▪ Friction and force
	  ▪ Machines
	▪ How simples machines work
	▪ How simple machines make work easier
	▪ How simple machines are integrates into larger machines.
	
	Vocabulary:
	fulcrum, force, effort, work, friction, mass, load, gravity, vertical axis, horizontal axis
	
	Read Alouds
	How Do You Lift a Lion? by Robert E. Wells
	Work by Sally M. Walker
	Forces and Machines by Terry J. Jennings
	David Glover Books:
	Pulleys and Gears, Ramps and Wedges, Wheels and Cranks, Levers, Screws
	
	Boing-Boing the Bionic Cat and Boing-Boing the Bionic Cat and the Jewel Thief by Larry L. Hench
	
	Best of Rube Goldberg by Rube Goldberg, Charles Keller
		▪ Explain the meaning of work and energy as it relates to machines
		▪ Understand and be able to use the vocabulary associated with this unit of study
		Be able to explain
		▪ How each of the simple machines works
		▪ How each simple machine makes work easier
		▪ How each simple machine can be or is integrated into larger machines.
		
		Design a Rube Goldberg on paper. Optional activity: build a Rube Goldberg using K'nex or other materials
		
		▪ Conduct experiments about simple machines
		▪ Record experiment results
		▪ Graph results when required
		▪ Listen to nonfiction books for meaning and understanding
		▪ Read non-fiction text for understanding
		▪ Identify key facts and important ideas
		▪ Present experiment results to class
		▪ Work well with others
			▪ Lab reports
			▪ Class discussions
			▪ Assess ability to hypothesize orally and in writing
			▪ Assess ability to draw conclusions from experimentation
			▪ Review of notes taken
			▪ Observations during lab work
			▪ Graphic organizer for lab reports
			▪ 3-2-1 Exit Cards:
			  3 things I learned today
			  2 questions I have
			  1 thing I want to learn more about
			▪ Rubric to assess collaboration with others
				Discussion: What is work?
				What do you know about simple machines? Do a KWL chart in small groups.
				
				How do machines make our life easier?
				What negative qualities do machines have?
				
				USING A LEVER FOR LIFTING
				Experiments with 3 classes of levers
				
				PULLING UP AN INCLINED PLANE
				Experiments measuring force using a spring scale
				
				A SCREW IS A PLANE!
				Experiments with different size screws
				
				EXPERIMENTING WITH PULLEYS
				Changing the number of strings
				
				FRICTION AND FORCE
				Experiments with the amount of friction on speed
				
				RUBE GOLDBERGS
				Analyzing Rube Goldgergs
				Building Rube Goldbergs