ISM ADVANCED PHYSICS PACING CHART

TOPIC	CHAPTER	WEEKS	LABS
AUGUST, SEPTEMBER			
Measurements and Units Review		1	Understanding Precision and Accuracy by Playing Darts
Electric Charge, Coulomb's Law E Fields and Superposition Dipole Fields	16	4	Lab: Creating Charge by Induction with an Electrophorus Lab: Creating Charge by Friction Demo: Van De Graf Generator Lab: Building and Testing for Charge with an Electroscope Demo: Using LoggerPro and Faraday Cage to Measure Static Electric Charge
Electric Potential and Voltage Work Done by E fields	17	1	
OCTOBER			
Net Potential Equipotential Lines Resistance and Ohm's Laws Electric Circuits	18,19	4	Lab: Mapping E fields with Pasco Conductive Paper Lab: Determining Resistivity Demo: Proper Use of Voltmeters and Ammeters Demo: Using Multimeters Lab: Using Voltmeters and Ammeters Lab: Using Logger Pro to Measure Voltage and Current Lab: Building a simple Circuit 1 Lab: Building a Simple Circuit with a DPST Switch Lab: Determining the Resistance of a Light Bulb
November			
Series and Parallel Circuits	19	4	Lab: Testing Kirchhoff"s Loop Law

			Lab: Testing Kirchhoff's Node Law
			Lab: Building a Series Circuit
			Lab: Building a Parallel Circuit
			Lab: Building a Combo Circuit
			Demo: Using a Soldering Iron
			Lab: Learning to Solder
			Lab: Building a Simple Motorized Electric Cart
			Lab: Building a Light Sensitive Circuit
			Lab: Building a Line Tracking Robot
			Lab: Using LED's and Diodes
DECEMBER		2	
Capacitors Charging and Discharging Series and Parallel Capacitors RC Circuits			Demo: Charging a Lyden Jar with a Van De Graf Generator Lab: Building a Simple RC Circuit Lab: Using Logger Pro to Generate Characteristic Charging and Discharging Graphs Lab: Building a Capacitor Lab: Building an Audio Oscillator
JANUARY	20	4	
Magnetism, Sources of B fields Moving Charges in B fields, Right Hand Rule Crossed E and B Fields			Lab: Mapping the B Field of a Bar Magnet Lab: Mapping the B field Around a Current Carrying Wire Demo: Vernier Magnetic Field Sensor Lab: Using Logger Pro to Measure B fields Around a Wire

			Lab: Using Logger Pro to Measure the B Field Inside a Solenoid Lab: Building a Simple Electric Motor Demo: Pasco Current Balance Lab: Building a Speaker
FEBRUARY			
Electromagnetic Induction Faraday's Law Induced EMF, Lenz's Law Self Inductance RL Circuits Applications	21	4	Demo: Creating a Current with a Magnet and Solenoid Lab: Using Logger Pro to Measure Induced Voltage Lab: Using Logger Pro to Graph Induced EMF When a Magnet Fall's Through a Solenoid LAB: Building a Wind Powered Generator LAB: Using a Gencon Generator Demo: Showing Lenz's Law with A Pasco Cart, Track and Magnet Demo: Ring Launcher Lab: Building a Simple RL Circuit
MARCH			
Maxwell's Equations and EM Waves Sources of EM Waves EM Spectrum	22	3	Demo: Tesla Coil Lab: Building a Simple Radio Receiver Lab: Building a Simple Radio Transmitter Demo: Vernier SpectroVis
APRIL			
Light and Geometric Optics Convex and Concave Lenses Lens Equation Mirrors, Telescopes and Microscopes	23	4	Demo: Formation of an Image Using a Convex Lens Demo: Pasco Optics Bench Lab: Determining the Focal Length of a Convex Lens Lab: Building a Simple Telescope Demo: Interference of Light Lab: Determining the Wavelength of Laser Light Using a Diffraction Grating

MAY			
Galilean Relativity Special Relativity The Michelson Morley Experiment Einstein is 1905 Plank and Quantum Mechanics	26, 27	4	Demo: Laser Interferometer Demo: Production of Cathode Rays Lab: Determine Mass to Charge Ratio of an Electron Lab: Building a Cloud Chamber to Observe Particle Tracks