

# Mighty Physics

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Zero period letter on line:

## ZERO PERIOD PHYSICS:

Ah, all youse great people who will arise early and enjoy the beauty of the morning,

Zero Period Physics WILL meet on the First Day of School!

See y'all there on time at 0700.

Boom

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**Boom:** Download rosters, prepare seating charts for first day, set up PowerGrade preferences, categories, and groups.

**Boom:** This goes onto the Chalk Board for first day or so:

Big Chem

Mighty Physics

WELCOME BACK!

1. The Summer Assignment must be completed by tomorrow!
2. The On-Line Blitz on the Summer Assignment is due tomorrow.
3. Check the *Announcements Page* DAILY for info, assignments, and lab printouts.

**Boom:** Copy and paste this into the Announce Page:

Here is the schedule for the First Week of School:

On-line Exam on the Summer Assignment is due Wednesday.

Historical Notes for Copying into your Notebook Are due in your *Notebook* on Wednesday. **These are to be HAND COPIED in INK.**

**Big Essay in-class Exam on the Historical Introduction is on Thursday/Friday.**

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Please print Lab: [Measuring with Accuracy.pdf](#) and bring it to class.

Your summer assignment should now be completed! You will need a *spiral notebook* for Class Notes, and a second *spiral notebook* for your Assignment Portfolio (A 70 sheet notebook should be sufficient if you use both sides of each sheet.). See course information sheet for more on these.

Your first assignment is to HAND COPY the Historical Introduction Notes IN INK into your spiral notebook.

**NOTE:** We do NOT turn in Notes. They stay in your *Notebook*. We turn in Labs and we do the Assignments in the *Assignment Portfolio* when they are due.

Please check out your PHYSICS TEXTBOOK this week from the Bookie. It will not be necessary to bring it to class.

Good luck and get ROARING!

Boom: Crack down on illegible hand writing right away!

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Boom: There will be 1000 points possible in the First Semester.

Boom: Download the student rosters from PowerGrade for Seating Charts. Have those charts printed out for the first day! Lord Apple Assigneth.

---- The Summer Assignment must be done immediately!  
The on-line take home test on the SA is due...

Boom: Wear your wedding ring for Democritus  
Prep Demos: leaf, Bluestone, sticks, gunpowder.

---- PP First Day Presentation

1. PowerPoint: *First Day of Class Introduction & What is Physics? (in same PP presentation).*

Boom: There is time for Democritus after the PP. So...

2. Start Historical Into PP.

Boom-- Acquire the Secured the kilogram brass mass.

Boom-- Need power drill for disk demo.

Boom: Take home blitz on Summer Assignment. (The Course Info Sheet and the Take Home test both inform of stapling papers at home).

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Boom: When a kid turns in an on-line exam late (because of “sickness”), check PowerSchool attendance to be sure he was absent all day, not just your class.

**THE TARDY POLICY:** We shall use the school wide Tardy Policy. If you arrive late, you must bring Boom your *PASSPORT* at NOON. Boom will sign it then. If a student is not in his seat when roll is taken when the bell rings, he's marked absent. When the Boom signs your Tardy Passport, then he will change the absence to a tardy.

*... AND: Boom, if they are absent, enter a 0 for their labs.*

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**BOOM NOTE:** Students are NOT given access to PowerSchool for a Two weeks! So, put their grades up on our web site in <http://cougar.slvhs.slv.k12.ca.us/~pboomer/grades/Classes/>

Putting the Grades from PowerGrade onto the Web Page:

*Open a class.*

*In Reports, select Edit.*

*In Name of Report, select Gradebook for Web Page.*

*In Options change the Date Range.*

*Click OK*

Go to Reports/Preview

Select: Gradebook for Web Page

This opens Preview

File/Save as... .pdf

If the grades take up more than one page: Snap a Picture of each page. Open each Picture, Copy and Paste into a Word document. Print to .pdf

This is ready to upload to Grades/Classes.

This is ready to upload to Grades/Classes.

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**Boom: Labs now count 10 Points! AND... in *PowerGrade*, add zeros for those who are absent on the day the lab is done.**

**Boom: Let *Seating Charts* print the Lab Stations. This gives an even balance of students per table, and it separates social groups.**

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**BOOM:** On the day of each lab, enter into PowerGrade the lab with ZEROS for each absentee. This way those who miss labs will not get credit for turning in labs that they did not perform.

**Boom:** Papers brought in Tardy or Unstapled, must be turned in at Lunch.

## Historical Introduction

**Boom:** Physics Historical takes three hours including Optical Illusions. Strobe needs another 20 mins..

**Boom:** Wear your wedding ring for Democritus

\_\_\_ Historical Introduction / Ass: Prep for Blitz

\_\_\_ [PP Historical Introduction](#)

\_\_\_ [DVD 24 In PP \*Democritus to Dalton \(9\)\*](#)

\_\_\_ **Blitz Historical (40), Open Hand Copied Notes.**

## Observations of Physics

\_\_\_ [PP \*Optical Illusions \( 20 mins\)\*](#)

**Boom:** Do Strobe Demos before starting Chapter 1 to save the LDC Lamp.

\_\_\_ Stroboscopic Effect Demos (20). The Great FAN!

Eggerton Strobe video clip is in Ch 1 PP.

\_\_\_ Fool the eye with the rotating spiral disk.

**Boom-** [Railroad picture of Parallax.](#)

[Keep On Truckin' Poster.](#)

## Chapter 1 The Science of Physics (old ch 1 & 2)

[Next Blitz Chs 1 & 2](#)

\_\_\_ Measurements / SI Units p11 / Metric Prefixes p12

\_\_\_ Sally's Metric Comparison Chart ("This or This").

\_\_\_ Accuracy vs. Precision

\_\_\_ Significant Digits Rules pp17-19

\_\_\_ Problem Solving, Hup, Two, Three, Four. Dimensional Analysis.

\_\_\_ In PP. [DVD 2 \*Powers of Ten 2-B \(8\)\*](#).

Assign Lab stations.

\_\_\_ Lab Measurement, Volume of Beaker (30min)

\_\_\_ **Boom:** The Five Kilogram Mass!!

\_\_\_ Critique Lab / Volume & Mass

\_\_\_ Lab Density of 5 Samples 30 minutes.

\_\_\_ ON PP [DVD 2 \*Eggerton on Stroboscopic Effect 2-B \(5\)\*](#).

## Chapter 2 Motion in One Direction (old ch 3 sans Newton's Laws)

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Boom: For the Clear the Table demo, Get paper from the big roll in back. No more book covers.

- \_\_\_ Speed & Velocity Notes
- \_\_\_ Acceleration / Lab work on chapter probs.
- \_\_\_ Falling Objects
- \_\_\_ ON PP [DVD 23 Physics Demo Videos](#)
- \_\_\_ Lab, Get your Mass & Height
- \_\_\_ Lab Speed & Acceleration (balls on slopes) 30 mins.  
 $v = 2d/t$ ,  $a = 2d/t^2$ .

\_\_\_ Boom's Elevator demo ping pong ball in cups.  
Demo: Spring Balance and kilo mass to illustrate the Elevator problems.

Boom: The Mythbusters elevator video is in Chapter 4a, Forces, etc.

- \_\_\_ Lab Speed at 50 meters. Lord Apple Selects.
- \_\_\_ Lab Finding g by the dropsies.
- \_\_\_ **Vernier Motion Detector/ Speed/Acceleration Demo.**
- \_\_\_ [Blitz Ch 1-2 \(30 mins\). Do three Practice Problems from the Ch 2 PP at end.](#)

Boom: Copy and Paste into the Announce Page: *Lab fees are \$10 payable to the PAC. Bring Boom your receipt and get 10 bonus points . Please PRINT your name and period on the back of the receipt.*

## Chapter 3 Two-Dimensional Motion & Vectors of Velocity

- \_\_\_ Scalars & Vectors Notes
- \_\_\_ Projectiles & Demos
- \_\_\_ Hunter & Monkey problem
- \_\_\_ ON PP [DVD 23- Physics Demo Videos, Projectiles, etc.](#)
- \_\_\_ The Very Powerful Ping Pong Cannon.

Boom: Notes on Scaling Laws are at end of Ch 3 Vectors PP.

- \_\_\_ **In PP [DVD 67 Change of Scale.](#) (short) (10) **Tee Shirt, Superman & King Kong.****
- \_\_\_ [Blitz Ch 3, Vectors! Boom, this is a FULL PERIOD BLITZ!](#)

\_\_\_ Chapter 4 Forces, Force Vectors, Friction, and the Laws of Motion

- \_\_\_ Start Newton's Laws.
- \_\_\_ On PP [DVD 20 Eureka Do these in the Following Order!!:](#)  
[Eureka 1. Inertia, 2. Mass, 3. Speed, 4. Acceleration I, 5. Acceleration II \(4 & 5 are on the Second Law\).](#)
- \_\_\_ Newton cont'd / Iron Mass, Orbits & Force at zero g  
Hoop & Penny Demo / Water Hammer Tube.
- \_\_\_ Second and Third Laws Motion
- \_\_\_ DEMO: The electric Air Puck
- \_\_\_ ON PP [DVD 32 Million to One](#) (5)
- \_\_\_ Law of Gravity

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- \_\_\_ On PP [DVD 41 Black Holes \( 3\) GREAT!](#)
  - \_\_\_ Kepler's Laws
  - \_\_\_ Orbit Action-- (when do you slow down when you speed up?)
  - \_\_\_ ~~[DVD 32 Mass and Weight](#)~~ Boom: *Eureka Mass & Weight* does this better. On PP
  - \_\_\_ [Black Holes Suck T shirt.](#)
  - \_\_\_ [DVD 41 Asteroids, Comets, Meteor Impact \(16\) GREAT!!](#)
  - \_\_\_ Tides, Spring and Neap
  - \_\_\_ [DVD 26 Zero G, Skylab \(15\)](#)
  - \_\_\_ Force Vectors, Resultants & Equilibrants
  - \_\_\_ Resolution of Forces
  - \_\_\_ Discuss the vectors of Hammock, Chinning bar, UCSC fork catapult, Bow and Arrow, Crucifixion.
  - \_\_\_ UCSC Shoot the forks into the ceiling. Bow and Arrow Vectors.
  - \_\_\_ Lab 6 Force Vectors (force boards) (yaz, Boom force vectors goes well here). 50 mins). It now has two Vectors with Trig problems added.
  - \_\_\_ Friction & Theories
  - \_\_\_ Friction Demos
  - \_\_\_ [DVD 42 Frontiers of Friction 15](#)
  - \_\_\_ Lab 7 Coefficient of Friction (40). Use Balls and Ramps—Three slides and Two Rolls.
  - \_\_\_ *Vortex Generator.*
  - \_\_\_ On PP [DVD 1 Antilock Brake !-B \(5\).](#)
  - \_\_\_ [Blitz Ch 4 Needs a full period.](#)
- Boom: Prepare Toilet Paper for TP Ripoff Demos.
- Boom: Homecoming Rally coming up. Do a LAB on that Friday (short periods) because some kids will be absent working on the rally.

**For Grading Period: do RAZORS PAIN YOU with props.** It's in PP at the appropriate places.

**Razors Pain You.ppt in PowerPoint with the Berkeley Campanile**

Razors pain you  
Rivers are damp  
Acids stain you and  
Drugs cause cramp  
Guns aren't lawful  
Nooses give  
Gas smells awful  
You might as well live.  
*Dorothy Parker*

Boom: Check Physics Batteries to see if we need to order more.

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## Chapter 5 Work and Energy

*Next Blitz Chs 5 & 6*

- \_\_\_ Work, Power & Energy Notes
- \_\_\_ Spring Constant
- \_\_\_ On PP DVD 20 *Eureka Work, KE & PE*. Energy, Potential Energy.
- \_\_\_ Boom: Have Great Stairs Labs on different days for different periods so the ankle gets a break.
- \_\_\_ Lab 12, The Great Stairs (Lord Apple Selects)

## Chapter 6 Momentum and Collisions

- \_\_\_ Definitions & Formulae PowerPoint.
- \_\_\_ Momentum, Impulse, Conservation
- \_\_\_ Elastic & Inelastic Collisions
- \_\_\_ Demo: The Ball Machine and Bouncing Balls
- \_\_\_ ON PP DVD 1 *Baseball Physics 1-B (5)* (Kinetic Energy, lighter bats swing faster, balls are bouncier?,  $KE = 1/2 mv^2$ ).
- \_\_\_ On PP Physics Video Demos: *Bullets and Explosions*.
- \_\_\_ Lab 13, Hooke's Law of Elasticity (35 min) Boom: This is a new lab highly simplified.
- \_\_\_ *Blitz 5 & 6 40 mins.*

## Chapter 7 Rotational Motion, Centripetal, & Gravity Review

- \_\_\_ Boom: Be sure the Rotating Stool is here. Sally's computer chair is great.
- \_\_\_ Notes Rotation, go over Rotational Formulae
- \_\_\_ Demos-- Roll 'Em, Spin Masses,
- \_\_\_ DVD 16 *Frames of Reference (27)*
- \_\_\_ Lab 9 Centripetal Force (40-50 min). Boom: GOGS ON!!
- \_\_\_ Demo: The spinning thing on top of the high cabinet.
- \_\_\_ DVD 9 *Gearl on Rotation (26)*
- \_\_\_ Lab: *Rotation. Needs the rotating Stool (30)*.
- \_\_\_ Lab Rotation & Do You Believe in Physics?  
Orbital velocity 1 meter above earth = 8 km/s.
- \_\_\_ DVD 26 *Conservation Laws NASA (18)*
- \_\_\_ DVD 26 *Gyroscopes NASA Skylab (15)*
- \_\_\_ On PP DVD 2 *Bond in the Centrifuge 2-A (3)*.
- \_\_\_ Blitz Ch 7 (40).

**HALLOWEEN:** A Skeleton is a person with his inside OUT and his outside OFF.

- \_\_\_ ON PP (new high quality recording) DVD 61 *Weird Homes (10) Halloween*.
- \_\_\_ Boom—Alchemist Robe and Fez, AND the Boom Tie Dye Tee Shirt..

Boom-- We're doing Simple Harmonic Motion & Pendula in Ch 12.

## Chapter 8 Rotational Equilibrium and Torque, Machines

**Boom--** Bring vice and razor for Balance Problem. Show a fulcrum on a meter stick with screw up and down so that a balance can work.

- \_\_\_ Parallel Forces / Centers of Gravity and Mass. Boys & Girls C of G.
- \_\_\_ Solving bridge problems
- \_\_\_ Problem of the Balance / Feel the Torque / TP Rip-off
- \_\_\_ Nail Trick / Yogi
- \_\_\_ Lab 8 Torque & Center of Gravity (55 mins!)
- \_\_\_ Simple Machines TMA / AMA / Efficiency / Classes of Levers
- \_\_\_ Lab Levers of the Depressors (35).
- \_\_\_ On PP [DVD 21 Eureka Simple Machines](#): 11, Inclined Plane, 12, The Lever, 13, Mechanical Advantage, 14, Screw & Wheel, 15, The Pulley,
- \_\_\_ Lab 11 Machines, Part I Incline Plane (35)

**Boom:** Don't show ~~[VD 33 Lever Age](#)~~ (20)

- \_\_\_ *Pulley Story* is in PowerPoint Machines just before Babe.
- \_\_\_ Lab 11, Machines, Part II (Pulleys) (35)
- \_\_\_ [DVD 33 Acting in Turn](#) (20) **BOOM: The beginning has no sound, so don't crank up the volume!!! I edited out the Saxophones!!**
- \_\_\_ Differential Pulley
- \_\_\_ Haul up on pulley system and swing seat.
- \_\_\_ ON PP [DVD 1 Pulley Story, Babe in the Well 1-C](#) (5).
- \_\_\_ ON PP [Leonardo Machines](#) (20 mins)
- \_\_\_ ON PP [DVD 41 Leonardo Machines](#) (4)
- \_\_\_ ON PP [DVD 43 Boomeria Machinery](#) (8).
- \_\_\_ ON PP [DVD 1 Trebuchet 1-C](#) (5).
- \_\_\_ [DVD 2 Archimedes' Claw 2-B](#) (10)
- \_\_\_ ON PP [DVD 44 Ballistas, Rams, Oars](#) (8)
- \_\_\_ PP Machines of Leonardo (30) & PP Perpetual Motion (15)
- \_\_\_ **Boom:** Leonardo & Perpetual take about 40 mins with the included Video clips.
- \_\_\_ Blitz Ch 8 (45 Mins)

**Boom:** Prepare the Ice Block Regelation demo for the A day before Christmas vacation.

**Boom:** Remind the Counselors that Science does not want kids missing a week of school for Camp Counselors.

Chapter 9: Properties of Matter, Fluid Mechanics, Archimedes, Pascal, Bernoulli, Gas Laws.

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Boom: Ch 9: Properties of Matter & V-67 Plasma (in PP) takes 1 hr & 20 min. including two stretch breaks.

\_\_\_ Start Kinetic Theory Notes and Demos. Needs 1 hour.

\_\_\_ Boomlab Surface Tension (40 min with hot H<sub>2</sub>O, too).

\_\_\_ [DVD 26 Fluids Skylab \(13\)](#)

\_\_\_ Pressure.

(Boom-- Save DVD- [Drama of Metal Forming](#) for heat.)

\_\_\_ Pascal and Pressure

\_\_\_ [DVD 62 Jearl on Pressure Karate & Nails \(12\)](#).

Boom: Load the Torricelli Barometer tube for *Atmospheric Pressure*

Demos. Need the Intermittent Siphon, A Decigram & Centigram balance, too.

\_\_\_ Bernoulli's Principle.

\_\_\_ Archimedes / Lab Cartesian (10) The Archimedean Screw.

\_\_\_ The BAM CAN for Archimedes & Pressure!

\_\_\_ Finish Archimedes / Balloons, Sky Hook

\_\_\_ **In PP.** [DVD 2 Zeppelin \(Assassination Bureau\) 2-C \(11\)](#).

\_\_\_ Lab-- Density of Minerals by Archimedes' Principle (40 with how to use centigram balance.).

\_\_\_ Methane bubbles & JOY in "burning water".

Boom: Atmospheric Pressure, Demos, and **ON PP** [DVD 8-A Atmospheric Pressure \(5\) takes 1.5 hours](#).

\_\_\_ Torricelli-- The Discovery of Atmospheric Pressure (no Suck)

\_\_\_ Intermittent Siphon

\_\_\_ [DVD 57: Gas Pressure & Molecular Collisions \(13\)](#)

\_\_\_ [On-Line Take Home Blitz Ch 9](#)

**Boom: NEW TEXT: Ch 10, Heat, needs Boom's EXTRA PROBS Ch 10.**

The text forgot to include probs on heat transfer, expansion, latent heats.  
They are on-line in the Ch 10 lectures.

## Chapter 10 Heat

\_\_\_ Temperature Measurements Demos

\_\_\_ **OMIT:** [Demo: Vernier Thermocouple with candle, match, burner  
Boom if the thermocouple gives guff, clean the contacts!

It Giveth Guff!!!]

\_\_\_ Heat Transfer Demos

\_\_\_ Laser temperature probe (Jane's).

\_\_\_ Continue Heat Transfer / Radiation / Crookes Radiometer

\_\_\_ Convection and Radiation

\_\_\_ **Steam Expansion Demo (mystery metal):**

**Boom use 0.93 mm for  $\Delta L$  & 80C° for  $\Delta t$ . L = 600.0 mm.**

\_\_\_ Demos Quartz vs. Glass.

\_\_\_ Law of Heat Exchange

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- \_\_\_ DVD 42 *Expansion of Metals (13)*.
- \_\_\_ Lab 19 Specific Heat (45) Boom; **The specific heats are in the lab. printout.** Boom: We do four elements, NO Lead.
- \_\_\_ Vernier Temperature probes: Cleopatra's Bath Use 1100g of hot water & 800g of cold water.
- \_\_\_ Warming Curve for Water with sample problem.
- \_\_\_ Lab 20 Heat of Fusion (30)
- \_\_\_ Greenhouse Effect
- \_\_\_ Boom: Super Demo-- Vapor Pressure and Boiling Point, The Shocks, Duckies, Geyser, takes just under one hour. We do the PowerPoints for review and psychrometer in another hour.
- \_\_\_ Physics Lab 21, Heat of Vaporization (30)]
  
- \_\_\_ Change of Phase / Duckie, Hydrometer / Regelation / Love Meter
- \_\_\_ Instant Recycle
- \_\_\_ Geyser & Tornado in Beaker, stir it
- \_\_\_ Cloud in Bottle
- Boom: Do the Ice Block Regelation demo on the A day before Christmas vacation
- \_\_\_ Lab 21 Heat of Vaporization (30) after Super Demo.
  
- \_\_\_ Boom's EXTRA PROBS Ch 10 on our Website, in Physics Lectures/Ch 10/*Heat Problems for Chapter10*. Ten pts. (No handouts). OR...
- \_\_\_ Home Lab: Heat Problems, Ch 10 (On Lab Page).

## The Winter Assignment:

On website go to Winter Assignment:

Practice Review Sheet on web

Web Site Review

Blitz Disk Review

Semester Exam

Semester Vocabulary

**WARNING!** Do NOT memorize or copy the answers to the practice exams. The real one is similar, but different!! You must read and think about the questions!

## Chapter 11 Thermodynamics

- \_\_\_ PP Ch 11 takes full period.
- \_\_\_ Lab 22 Mechanical Equivalent of Heat (Falling Shot) (25).

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- \_\_\_ Adiabatic Action, fog in 4-liter jug. **Boom: Use a flashlight to show the fog within.** Use mouth, too, It's good!
  - \_\_\_ Boom Demo: Find absolute zero by **pressure** & extrapolation (10min).
  - \_\_\_ BoomLab: Determination of Absolute Zero by volume (35)
  - \_\_\_ Home Lab-- Which Freezes Faster, Hot Water or Cold Water?
  - \_\_\_ Lab- Coffee-Cream Problem (30) in class.
  - \_\_\_ **Demos of Steam Engines** and *PP Engines & Steam Vehilces (55)*.
  - \_\_\_ Steel Mill Story (10).
  - \_\_\_ *DVD 42 Steel Mill Action, Drama of Metal Forming (short) (20)*  
Boom: Write on board the *Field Trip to a Steel Mill* found in School/Videos folder.
- Boom: Be sure you have SCANTRONS for Finals**
- \_\_\_ *DVD 9 Jearl Leidenfrost Effect, Edited to 18 mins.*
  - \_\_\_ OnLine *Blitz Ch 10 & 11.*

Boom: Count the Assignment Portfolio 120 points. It is due the Day before Finals.

Chapters 1-11 only.

## *Honors Grade Boost* (extra credit):

For both this semester and next semester, you may earn a grade bump if you meet the following three conditions:

1. You have no more than five absences.
2. You miss no more than three assignments.
3. You score an A on the Assignment Portfolio.

**Boom: The Honors Grade Boost is 100 points extra credit. That's one grade boost.**

**Boom: In 2007, Just finished Ch 12, Waves. In 2009 we got half through Ch 12. Boom: We shall do Ch 12 at the end of First Semester, but it is not on the First Semester Final.**

Chapter 12 Vibrations and Waves

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## Boom— Sanctuary Lamp! For Galileo's Acolyte and Pendula Demo

- \_\_\_ Simple Harmonic Motion & Pendula Notes
- \_\_\_ Harmonic Motion
- \_\_\_ Lab 10, Pendulum (30)

## Boom: Do...

- \_\_\_ DVD 43 *Killer Waves (13 min)*, Demo The Ball machine prior to Coupled Pendula Lab. **Killer Pendula!**  
And Lab Coupled Pendula, (30 min) in same period.  
(Killer waves transf energy like the Pendula do, from one to the other.

## Boom: Greenwich Tee Shirt for Longitude.

### Boom: These DVD videos are in the PowerPoint Ch 12

#### Harmonic Motion presentation:

- \_\_\_ IN PP DVD 1 (also on PP) *Bells, Ringing, (6)* (balance wheel) ]
- \_\_\_ Demos: LCD Computer, Vernier. Harmonic Motion with stress & motion detector.
- \_\_\_ Pendula Demos
- \_\_\_ Sanctuary Lamp Pendulum.
- \_\_\_ Start Waves / Wave Nomenclature / Standing Waves

## The Great Thurible Demo & Videos:

*This should allow about 15 mins for the smoke to clear before restarting the Projector.*

Secure Projector. Start fan.

Ignite Charcoal, Add Incense, Pump it up!

Place Thurible in Fume Hood.

DVD player, set sound at #7.

Run V- 47 *The Great Thurible of Santiago Cathedral (2)*.

Demo: Standing Waves in *The Great Spring*.

Run V- 32 *Standing Waves & Superposition (10)*.

Start Projector.

Continue PP with *Spanish Thurible* (re-run) & calc the height of the cathedral) and onward thru AM FM.

- \_\_\_ Demos on the Springs of Physics

## Boom: Omit Lab 23, Spring Pulses Action! Because...

Kids destroy the springs & slinkys by overstretching them!

Big expense to the Boom to have to replace them each year!

Entanglement is a major problem!

Friction of the asphalt & concrete kill the waves.

Many kids don't do the lab, just sit around visiting!

The weather is inclement in January.

Boom: We got half way through Ch 12, Waves, in 2009.

Boom: CHECK THE FORM NUMBERS on each SCANTRON exam when you detach them. A student may copy a neighbor's exam and change the form number to agree with the neighbor's!

Boom: Final Exam Scantron Grading. Give aid to those who have turned in all work well done.  
*Print Grades Only in PowerGrade to see previous Grade.*

\_\_\_ FINALS

**Boom-- e-mail the counselors:**

Hi Noreen & Leslie, Chris Pombo.

Ah, it will soon be that time when Science Camp and others will try to recruit free camp counselors (baby sitters) from our student body.

PLEASE do NOT allow Chem & Physics students to do this. To miss a week of these classes is a disastrophe!

Thanks!!

**SECOND SEMESTER:**

\_\_\_ Boom-- *The Third Quarter Sluff Off Song* in PP.

- \_\_\_ Finish Chapter 12.
- \_\_\_ Lab 24, Wave Properties, Ripple Tank (35)
- \_\_\_ In PP. DVD 14 *Tacoma Narrows Bridge* (8)
- \_\_\_ Home Lab: Waves & Interactions (with video).

**Recruit Zero Period Honors Physics kids.**

**Chapter 13 Sound**

Boom: Start through Decibels takes one hour.

\_\_\_ On PP DVD 63 *Nuclear Blast (Nuclear Compressions & Rarefactions)* (2).

\_\_\_ In PP DVD 1-B *Decibels & Hearing 1-B* (5).

\_\_\_ DEMO: Sound Level db meter (in the Transducer Box).

\_\_\_ Demo School Amplifier & School Speakers with Signal Generator for frequency of Sound stuff. Boom—*You do not need to bring home amp and spkrs! Biggs demo is fine on school spkrs.*

\_\_\_ PP Video: *High Speed Flight edited* (9) DVD-63 (9).

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*Boom: Demo Transducers while the Vernier Microphone is on!!*

*Great! Amplifier Microphone* (Vernier)-- Voice, Forks, Wine glass, harmonics, etc.

\_\_\_ Transducers / Sirens, Boom Stuff takes 45 minutes with PP  
\_\_\_ Transducers Demos.

Boom Save DVD Doppler for Light.

~~DVD 37 *Electronic Synthesizer* (15)~~ Use the shorter version in PP.

\_\_\_ IN PP *Electronic Synthesizer* (10).

\_\_\_ Lab 25, Resonance (full period with copy PP Harmonics, blab, and perform) with

Lab: Coat Hangers, Utensils,

Space Telephone, Tuning Fork on teeth and nose,

**Boom-- Organ Tee Shirt.**

Boom: Demo organ pipes are now on the CIC Safe.

\_\_\_ **PP & Demo Organ Pipes** (15) & *EP Biggs PP Demo* with sound on CD on school sound system (mono OK). (25). **The Biggs CD** is the DVD file drawer at the front of the DVD's.

Also in the slide tray at home.

Boom: *DVD 22 Voices in the Wind (35 stopping after Ein Feste Burg)* may be a Field Trip (5pts).

\_\_\_ *DVD 22 Voices in the Wind (39)* Boom: *Lab Test tube Organ*. Goes well after *Voices in the Wind* (Organ Tubes are on blue cabinet).

\_\_\_ **On-Line *Blitz Ch 12 & 13*** (The Blitz is 35 mins).

**BOOM:** For Open House, we have eight physics demos that kids can perform. They are on the Physics Lab Page.

There are signup sheets to be printed. They are found in WORD/School/Physics stuff/ Physics Demos for Open House.

*Clear The Table stuff is in the Pantry.*

## Chapter 14 Light and Reflection

Next blitz for Light is on-line, NO Killer Scantron.

Boom: *"And God said..." Tee Shirt.*

\_\_\_ *PP Nature Of Light* (We get to and finish sources of light in first hour).

\_\_\_ *PP Reflection*

\_\_\_ Nature of Light Demos / Pinhole Camera

**Boom-- bring Flashlight for Seasons and for Light Sensor demo.** \_\_\_

Phosphorescence There's a Star in Here.

There's a COMET in here! Which way is it moving?

\_\_\_ Illumination / Quantum

\_\_\_ *DVD 14 Doppler Effect* (13)

Students-- Bring Candles for Labs!

Boom: *Doppler Effect Tee Shirt.*

\_\_\_ DVD 36 *Pressure of Light (18)*

Boom: Lab 26, Photometry (30 min) Plus

Boom: Set up the Big Navy Mirror on the cart in advance before someone else takes the cart.

\_\_\_ DEMO: *Light Sensor* with Candle, Incandescent light, Fluorescent light, Flashlight and LASER.

\_\_\_ PP Speed of Light / Eclipses, Umbra, Seasons & *The Void* takes 50 mins.

\_\_\_ Laser plus octagonal mirror-- light lever.

Boom: Supply WHITE LIGHT FLASHLIGHTS for light labs. May need 16 new cells for the torches.

On PP DVD 1 *Laser & Heart Surgery 1-A (6).*

On PP DVD 1 *Laser & Diamond Cutting 1-A (8).*

Boom: Assign the Laser Actions at

<http://www.colorado.edu/physics/2000/bec/>

Boom-- Bring *Mirage (the Phantom Image)* from Wine Cellar.

\_\_\_ Plane Mirrors PP & Lab 27 fit well in one hour.

\_\_\_ Lab 27, Plane Mirrors / Freak-Out Mirror (25 mins).

\_\_\_ Demos / Navy Mirror/ Trapped in a Corner Reflector.

\_\_\_ **Without PowerPoint:** Curved Mirrors/ Mirror Constructions/ Mirror Calculations/ Demos of Big Mirror, PP Curved Mirrors thru Sample Probs. takes one hour.

Demo The Big Mirror, Phantom Image takes 55 mins.

\_\_\_ PP review of Mirror drawings, etc, followed by:

\_\_\_ Lab 28, Curved Mirrors (30)

\_\_\_ Demo: Multiple reflections, the Spencer's "Hall of Horrors".

\_\_\_ Demo: The Spencer's Spinning wheel of Strobe Action.

## Chapter 15 Refraction

### PP Refraction

\_\_\_ Refraction / Mystery Liquid (Wesson Oil, disappearing TT)

\_\_\_ Diamond refraction

\_\_\_ Finish Refraction / Lens Drawing / Calculation of Lenses /

Boom: Show DVD 36 *Speed of Light* after Lab 28, Curved Mirrors, and Lab 29, Index of Refraction. Both are in this film.

\_\_\_ DVD 36 *Speed of Light (18)*

\_\_\_ Lab 29, Refraction (30).

\_\_\_ The Norton Bomb Sight & Bomb Detonator (in lab at home).

\_\_\_ Arc Light and Optical Disk with prism, diamond, Mirrors, & Lenses takes 12 mins.

\_\_\_ DVD 64 *Schlieren* shortest (9) or In PP.

\_\_\_ Lab 30, Candle Light and Lenses (30)

# Mighty Physics

16

- \_\_\_ Lab 32 Magnification/ Make Telescopes (35).
- \_\_\_ Colour / Flood Lights GREAT Colored Shadows and on the ceiling there will be colored Bat and Spirit of Chem.
- \_\_\_ Colour Wheel & Project colors onto the flag. These demos take 15 mins.
- Boom: *The Color demos: Flood Lights + Filters from slide projector + Sara's Spinning Color Wheel + The Strobe Fan take about 20 minutes.*
- \_\_\_ Spencer's strobe wheel, ooohhhhhh. and Spencer's Hall of Mirrors.

\_\_\_ Lab Color (25)... Boom: Use the new color filters!

## Chapter 16 Interference and Diffraction

Boom: You need the Overhead Projector for Polarization and Diffraction slides.

- \_\_\_ PP *Diffraction, Polarization* Boom: this takes one hour.
- \_\_\_ PP *Telescopes*

Boom: DVD 41 Asteroids, Comets, Meteor Impact was shown in Chapter 4.

- \_\_\_ Diffraction & Polarization (PowerPoint Demos)
- Boom: Pass around DICK & JANE
- \_\_\_ Lab, Bubble Diffraction (25 mins with methane action).
- \_\_\_ Blue Sky, Red Sunset, **Red Sunset on Parallax poster.**
- \_\_\_ Michelson-Morely.
- Boom: Perfect for a 55 min period, is...
- \_\_\_ DVD 37 *Holography (16)* and...
- \_\_\_ Lab 33, Diffraction (30).

\_\_\_ Demo: The photoelectric effect and spy detector. Street Lamp.

Boom: Do this here and not in Electronics.

- \_\_\_ PP *Astronomy, about 25 minutes.*
- \_\_\_ DVD 41 Tour of the Solar System ( 23)
- \_\_\_ IN PP DVD 41 Palomar 5-Meter Telescope ( 2)
- \_\_\_ IN PP DVD 41 Black Holes (3)
- \_\_\_ DVD 57 Laser Light (18)
- \_\_\_ DVD 57 Laser Applications (14)

**Big Review Sheet for Light Exam is on our website in Physics Lectures at end of the Light section.**

- \_\_\_ Demo: Penguins in Two Liquids apparatus & PowerPoint that goes with it in Diffraction.
- \_\_\_ Review / Ah Roar!  
*Blitz Chs 14-16 on-line, NO killer Scantron.*

# Mighty Physics

17

End of the First Grading Period, 2006.

**Boom:** C Students gets a *Possible Fail* at the second progress report just in case!

Boom: Next exam is Chs 17-20, Electricity, DC circuits. It's 60 points, on-line.

Chapter 17 Electric Forces and Fields (Electrostatics & Capacitors)

Next Blitz Chs 17-20 Electricity. No magnetism nor electronics.

Boom: Do the 50-min electrostatics demos first sans PP to save the lamp.  
Then...

\_\_\_ PP *Electricity*, Electrostatics, Capacitors, Producing Electricity, Units of Electricity.

Boom: Extra pith balls for Lab 36 are in the electrostatics box by the periodic table. Cheerios are good!

Boom: If the Wimshurst konks out, use the Van de Graaf with the top off.

**Boom: Discharge yourself before touching the computer!**

Electrostatics demos, Wimshurst thru Leyden Jar takes 50 mins.

\_\_\_ Electrostatics / Wimshurst Action / Leyden Jars

\_\_\_ Capacitors

\_\_\_ DVD 63 *Coulomb's Law* 14 mins.

\_\_\_ Charge capacitor with Big Meter

\_\_\_ Parallel Capacitors Big BAM!

\_\_\_ Demos cont'd.

\_\_\_ On PP DVD 32 *Electric Lines of Force* (7)

Boom: The Hangers for the charging rods are located in a box over the Electroscope Box.

\_\_\_ Lab 36, Electrostatics (40). Boom: Hair works well for good charges.

End of first grading period, 2<sup>nd</sup> semester March 7, 2008

\_\_\_ Sources of EMF Demos

\_\_\_ Units of Electricity

Chapter 18 Electrical Energy and Capacitance

Boom: Ch 18 thru 20 go together

\_\_\_ PP *DC Circuits and Batteries*

Boom-- Use the water analogy with the faucet-- Pressure (4 atmos), Friction is the valve, amps is the flow!

Boom: Do Lab 36, Conductivity after PP Electricity. The 007 & Mythbusters conductivity are at the end of the PP.

# Mighty Physics

18

- \_\_\_ Lab: Conductivity (15)
- \_\_\_ Resistance (20). Rheostats Demos.
- \_\_\_ Ohm's Law / Series / Parallel Circuits
- \_\_\_ Lab 38: Measuring Resistance (20)
- \_\_\_ [DVD 14 Superconductivity \(19\)](#).

Boom -- Sample Solve the circuits in PP and do lab & calcs takes 1 period.

- \_\_\_ Lab: Series Resistors (30)
- \_\_\_ Lab: Parallel Resistors (30)

End of first grading period, 2<sup>nd</sup> semester March 13, 2009

- \_\_\_ Lab: Compound Resistors (35)
- \_\_\_ Lab: Design a 3-way switch. (25mins). (If time 4-way circuit) we have hints printout and Overhead Cartoon in the Physics Labs folder.
- \_\_\_ [Blitz Chs 17-20 Electricity & Circuits](#). (No heat, magnetism, motors, nor electronics). It's 60 points, on-line.

Next Biltz is On-Line. Chapters 21, 22, 24. Magnetism, Induction, AC, and Electronics. *Boom: This exam is worth 75 points.*

## Chapter 21 Magnetism

- \_\_\_ [PP Magnetism](#)
  - \_\_\_ Magnetic Domain Theory Demos/ Magnetic Bearing
  - \_\_\_ In PP. [DVD 14 Magnetic Domains \(9\)](#)
  - \_\_\_ Earth's Magnetic Field / Spastic Light Bulb
  - \_\_\_ Lab, Magnetic Fields (25) Boom: The electrostatic hangers work for magnets.
  - \_\_\_ Which of the two is the magnet. Check the center attraction.
  - \_\_\_ [PP Electromagnetism](#)
  - \_\_\_ Electromagnetic Action/ Solenoids/ Relays/ Telegraph Relays/ Thermocouple Magnet!
  - \_\_\_ Lab: Solenoids & Electromagnetism (25)
- Boom: We have 10 extra coils in the Wine Cellar.
- [Boom-- Bring Engine Room Relay to show.](#)
- \_\_\_ [DVD 63 Connections, Trigger Effect. \(20\)](#)  
[Boom: Bring a Relay for this Video!](#)
  - \_\_\_ [PP Electric Meters](#)
  - \_\_\_ [DVD 33 Magnet Lab \(19\)](#)  
[Boom: Save Hot Wire action for Ch 9, Heating Effects.](#)

\_\_\_ In PP. [DVD 2 Bond and Electromagnets 2-A \(5\)](#).

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Boom: STAR: There were two items on Transistors. Use as Rectifier and as Amplifier, and as a Switch. So, the day before the Test, have kids copy diagrams for Solid State Rectifier & Transistor Amplifier.

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## PREPARATION FOR THE PHYSICS STAR TEST:

[Exam for Physics STAR Test](#). On-Line test on our [website Exams page](#). Review PP. Boom: *This exam takes several hours, Tell 'em, "Don't put it off to the last night!"*

*Prepare for the great STAR exam! You get a grade boost if you do well on the STAR! Your Spring Assignment, 100 Points: This is due the week of 4/14. It is big, so I suggest working on it over the Spring Break! It will not be accepted after Mon, 4/20.*

Click here for [The Physics STAR REVIEW EXAM](#).

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## Boom: For STAR testing:

Request assistance to obtain and return testing materials because of Zero period preventing me from hobbling up, getting materials, hobbling back, and organizing the testing materials early.

Seat the kids alphabetically. Have kids bubble in the Test Numbers. Separate the answer sheets from the test booklets because they will have a different booklet each day.

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**Boom: Administrating the STAR test:** Have students print for SCHOOL, *San Lorenzo Valley High School*, and for DISTRICT, *San Lorenzo Valley Unified School District*.

In the Answer sheet for each test, bubble in *Version Number* and *Which Test* (i.e. Algebra 1, Chemistry).

Them: let 'r roar!

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REMEMBER: BUBBLE IN THE TEST FORM LETTER & BOOKLET NUMBER!!!

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Boom-- Do Ch 23 after Chapter 24, Electronics

[Boom: Save DVD 33 *Magnet Lab* (19) and DVD 63 *Connections, Trigger Effect* (20) for The Cabrillo Senior Field Trip. At 10 points each for note taking, this will encourage the Period 2 seniors to come in Zero Period on Thursday & Friday for the two videos, 20 points total.]

## Chapter 22 Induction and Alternating Current

Boom: Two labs to print: *AC Problems* and *AC Vectors 1, 2*.  
*AC Probs 3* can be an extra credit home assignment. It's tough.

\_\_\_ *PP Induction & Transformers, Power Transmission*

\_\_\_ Lenz Law Demos

\_\_\_ The Drop Zone & Lenz Law.

Boom: Demo your Sparky & PH's red coil. (In with Sparkies). Save the Big Sparky for Atomic Theory.

\_\_\_ Lab Induction (25)

Boom: PP STAR Diode and Transistor.

Boom: Geneco Motors are in the Motors/Generators box.

\_\_\_ *PP Electromagnetism & AC, Motors*,

\_\_\_ *PP Electromagnetism generators, Three Phase*

Demo: Back emf in a motor with the big meter. Use two 6v Batteries and a 5 amp Shunt.

\_\_\_ *PP Motors & Generators, Synchronized*

\_\_\_ *PP Power Plant Tour*.

\_\_\_ *DVD 45. Power Plant Tour (15)*. Formerly (DVD 30 Conservation of Energy 25 )

\_\_\_ In PP. *Induction Train & Roller Coaster (5)* [DVD 1-C (5)].

\_\_\_ Inductive Reactance / Capacitive Reactance / Impedance

\_\_\_ Resonant Circuits & Demos

\_\_\_ Small Tesla from home. Run for short time as the tubes are getting hot.(save the big Tesla for when we have videos sans PP. No computer on table).

\_\_\_ Demo: With fluorescent tube close by. The discovery of Radio

Waves.

- DVD 1 *Tesla* (8).
- Print Lab, *AC Problems 1* (15min).
- Print Lab, *AC Problems 2*
- Print Lab, *AC Problems 3*
- Print Review for AC & Electronics Exam Ch 21, 22, 24.
- *PP Heating & Electrochemistry*
- Lab: AC Probs #2
- Boom: Heating & Electrochemistry & Start Lab AC Probs 2, took one hour.
- Labs *AC Problems & AC Vectors* on website labs.

**Boom: Do Chapter 24 next on Electronics:**

Boom-- Amplified Speaker for Oscillator Demo.

## Chapter 24 Electronics

- Boom: We did the Photocell and Street Lamp in Light.
- *PowerPoint Electronics*
- Vacuum Tubes
- Cattle Prodder Tesla at base of BIG LIGHT BULB!
- **Gate and Check Valves** for vacuum tube analogies are on back electric shelf is supply room.
- Demo: Spinning LED's, Amplified LED with solar cell and radio.
- Demo: Power Supply / Filter Circuits / Oscillator
- Demo: Hertzian Transmitter.
- Solid State electronics.
- DVD 19 *Silicon Run* (27)
- Demo: Swing the LED's around on their cords. Neat strobe action.
- DVD 16 *Making Waves* (18)
- Three Labs: *AC Problems* and *AC Vectors 1, 2, 3*.
- **Blitz:** On-Line on website. Chapters 21, 22, 24.  
    Magnetism, Induction, AC, and Electronics.
- Assign: On-line, Print out for your notebook: 1. The *Atomic Theory Notes*, 2. The *Nuclear Reaction and Sub-Atomic Particle Notes*.

**Boom: DO NOT form a ring around the demo table. Ya burned out your video output! Someone may have been standing on the cables.** Have the kids form a ring up and down the columns of desks.

# Mighty Physics

22

Run Tesla Coil & Fluorescent tube on Lab Table 6, far from the computer. If Tesla dies, use the Cattle Prodder with fluorescent tube.

## Chapter 23 & 25 Atomic Physics & Nuclear Physics

Chapter 23 & 25, The Atomic Physics & Nuke units, with videos, demos, labs, takes 9.5 hours.

**Print: Lab:** *Atomic Physics* (Discharge Tubes).

**Print: Lab Half-Life (Boom: bring sack of pennies).**

\_\_\_ PowerPoint *Nuclear*

\_\_\_ Ass: Print *Atomic Theory Notes & Nuclear Reactions Notes*.

Boom: Two labs to print: *Atomic Physics.pdf, Half-life.pdf*

\_\_\_ Start Nuclear (evidences for atoms) / Sparky & Light Bulb / Evidences for Atoms.

Boom: To protect the computer, have the kids circle around the center column of desks. NOT around the demo table.

\_\_\_ Demo: Jacob's Ladder for Frankenstein.

**Boom: For Big Light Bulb sparky action, use the CATTLE PRODDER on the base of the light. GREAT!!**

\_\_\_ Plasma Ball of Lightning Demo Zappo zappo!

\_\_\_ Crookes Tube, Paddle Wheel, Sears Tube /

\_\_\_ Sir JJ Tube, Millikan Oil Drop.

\_\_\_ Canal Rays/Ions/Proton/Isotopes/Neutron

\_\_\_ Run Chem PP 08.4 Rutherford Animation.

\_\_\_ X-Rays/Radioactivity/Rays of Radioactivity

\_\_\_ Size of Atom

\_\_\_ Size of Nucleus

**Boom: We do NOT do Spectra Tubes in physics.**

In PP, DVD 24 *Structure of the Atom...*

\_\_\_ **Lab:** *Atomic Physics* (Discharge Tubes) (30).

\_\_\_ Demo: Plasma Ball

BOOM-- The Blitz Disk has Atomic.txt in the Chem Blitzes folder.

**Boom: Remember the Senior Field Trip!!**

\_\_\_ Nuclear Reactions / Bombs

\_\_\_ Atom Smashers / Van De Graff

**Boom: Discharge yourself before touching the computer!**

**Boom: For Sparky and Kids, Secure LCD Projector and turn off its main power! Kids in the rows.**

- \_\_\_ In PP *DVD 71 Atomic Bomb Test, Nevada Desert (10).  
Tickling the Dragon's Tail.*
  - \_\_\_ In PP, *DVD 10 Radioactive Dating (12)*
  - \_\_\_ *DVD 60A Random Events edited (17)* followed by
  - \_\_\_ **Lab Half-Life (30)**
  - \_\_\_ Nuclear Reactors / Compare Energy
  - \_\_\_ Fusion Reactions/ Comparison of Energies
  - \_\_\_ **Van De Graff**
  - \_\_\_ Review for Blitz Atomic & Nuclear
  - \_\_\_ *DVD 64 Conquest of Atom (17).*
  - \_\_\_ *DVD 25 Strange Case of Cosmic Rays A & B (Part A 26, Part B 28).*
  - Boom: Both parts can be shown in 55 mins with no break. Break is not needed. This is a Field Trip worth 5 points.**
  
  - \_\_\_ In PP. *DVD 40 Nuclear Colliders (11)* made from Top Quark & What Einstein never knew).
  - \_\_\_ *DVD 18 Connections, Distant Voices (17 min)* (Atmosphere Sparky, etc. Show Distant Voices before Death in Morning).
  - \_\_\_ *DVD 19 Connections, Death in the Morning (25) (Magnetism etc.).*
  - Boom: Both Connections will fit into 55 mins with a 2 min break between.**
  
  - \_\_\_ **On-Line BLITZ ON Lectures Page, under Atomic and Nuke notes.**
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## SUMMER ASSIGNMENT HANDOUTS

### STARTING MODERN PHYSICS:

May 12, 2008: We have 19 hours of class time left before Finals. Scratch two hours if the Senior Field trip kills a day.

Because of AP Testing, we did two Field Trips to cover the kids missing class, and started Modern Physics two hours later.

*DVD 55 Galileo (44)*

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*DVD 52 Search for Antiworlds (23)*

*DVD 66 Galactic Monsters, Super Black Holes (29)*

### Chapter 25 Subatomic and Modern Physics

Start Modern Physics PP:

- \_\_\_ DEMO: Review Ballistics Car (back of bus).
- \_\_\_ First hour: Through Warped Space (1 hr).
- \_\_\_ Second hour: Mr Tompkins (15), and...
- \_\_\_ *DVD 17 Einstein, Space and Time (27).*

# Mighty Physics

24

\_\_\_ Finish Modern Physics, The Quantum → Shrodingers' Cat (60 mins).  
\_\_\_ DVD 17 *Cosmos, Space and Time* (18+ total 27).

\_\_\_ **Bazooka Tube** (save this for when we have videos sans PP. No computer on table). The last day after GIZMO is perfect.

\_\_\_ **Big Tesla Coil from home.** (save this for when we have videos sans PP. No computer on table) i.e.

\*\* On May 24, 2006, we have 12 more teaching hours excluding the Senior Field Trip. The same 2007.

\*\* On May 18, 2009, we have 12 more teaching hours in Honors Physics. Physics finals will be the week before the regular finals schedule.

\_\_\_ In PP DVD 59 *Cosmic Ray Project Utah* (7)

\_\_\_ In PP DVD 41 *Four Forces* (6)

\_\_\_ DVD 52 *Search for Antiworlds* (23)

\_\_\_ DVD 65 *Einstein's Big Idea  $E=mc^2$*  (good if time) (38)

\_\_\_ DVD 39 *What Einstein Never Knew* (if time) (42)

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## Assignment Portfolio Announcement:

BEFORE bringing your portfolio to class on the Monday before Finals, remove all of the good unused paper and keep it for your own use.

**Video Field Trips, in Modern Physics, (The reports are online to print out on the Physics Labs page).**

Boom: When Field Trips leave extra time, Review for Finals in PP. Sound, Light, Etc.

\* Boom: If there is time to show all the videos below, do it. But if not, be sure to show

DVD 48 *String Theory (Elegant Universe)* (52)

Quantum Mechanic Tee Shirt for *String Theory*.

DVD 49 *Hidden Dimensions (Elegant Universe)* (47)

**Boom: Quark Tee shirt for next two videos.**

# Mighty Physics

25

\_\_\_ DVD 39 *What Einstein Never Knew, quarks, GUT, and Supersymmetry.* (42)

\_\_\_ DVD 66 *Galactic Monsters, Super Black Holes* (29)

\_\_\_ DVD 47 *Super Nova 1987 (Death of a Star)* (45)

Boom: Wear your Quantum Mechanics Tee Shirt for *Hidden Dimensions*.

\_\_\_ DVD 53 *The Astronomers (Dark Matter, Black Holes)* (54)

\_\_\_ DVD 71 *Ghost Particle, the Neutrino* (49).

Quarks Tee Shirt for *Creation of the Universe*.

\_\_\_ DVD 56 *Dark Side of Universe (Dark Matter, Dark Energy)* (54).

\_\_\_ DVD 55 *Galileo* (44) Boom: Show *Galileo* before *Creation of Universe*.

BOOM: Put up on the Announce Page, THE SPRING ASSIGNMENT, REVIEW FOR FINALS for Physics and Chem.

Physics Assignment Portfolios and Finals are the week before the Finals Schedule.

\_\_\_ DVD 46 *Creation of the Universe (4 forces, quarks, etc)* (53).  
*This has much review so save it for Extra Credit in Finals Week.*

\_\_\_ DVD 40 *GIZMO* (38 min).

\_\_\_ **Bazooka Tube** : The last day after *GIZMO* is perfect.

*Extra Videos:*

*DVD 67 Runaway Universe, Dark Matter & Energy* (33).

*DVD 72 Mars Missions & Relativity* (58 total):

*Relativity* (20),

*Mars Spirit & Opportunity* (24),

*Mars Phoenix* (14)

*DVD Venus (in closet). NOVA*

*DVD's Connections with James Burke! (in closet).*

*DVD 54 Kaboom! History of Explosives* (53).

**Boom: Grading. Print Grades Only** to show what the grades are before the Final Scantron grades are added. Thence the Scantron Grades can be edited appropriately.

**BOOM: Print Grades & Percents Only** for STAR test grade bumping next September.

# Mighty Physics

26

Boom: Count the Assignment Portfolio 120 points (12 chapters).

Go to [The Spring Semester Final Exam Review](#). On-Line is found on the Chem/Physics page.

Boom Note to kids:

There are THREE practice finals on the FC program:

*FINAL EXAM*, & *FINAL VOCABULARY & ELECTRICAL* in the Blitzes folder.

**WARNING!** Do NOT memorize or copy the answers to the practice exams. The real one is similar, but different!! You must read and think about the questions!

Boom: Qual reagent bottles that need new labels: Do this during Final Exams (it takes about an hour).

Boom: Save vacuuming the LCD projector until after the Friar Bacon Gunpowder demo next year. Big Smoke!

**ORDERS!**

Get physics 6-volt batteries at Scarborough.