

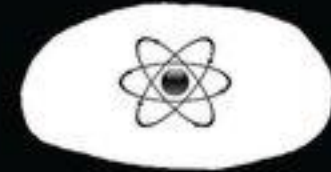


DEVIL PHYSICS  
THE BADDEST CLASS ON CAMPUS  
IB PHYSICS  
AP PHYSICS

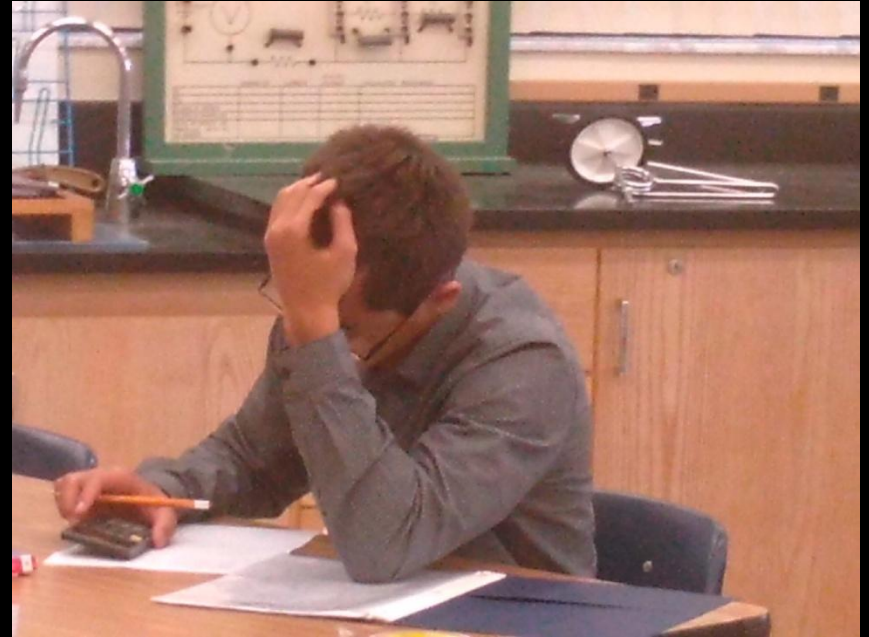
EVERYTHING YOU  
WANTED TO KNOW  
ABOUT *DEVIL*  
*PHYSICS* . . .

AND A LOT OF  
STUFF YOU  
DIDN'T

HOW TO TEACH  
PHYSICS TO YOUR  
DOG



CHAD ORZEL



**AND THIS IS TESTABLE**

## Class Motto

***Man's Flight Through Life  
is Sustained by the Power  
of His Knowledge***

# Class Theme

Reaching higher and higher,  
Because that's what  
dreams are made of.

# Class Theme

# Safety

- Fire
- Adverse Weather
- Lockdown
- Bathroom Pass



# Who Is This Guy?



- Northeast High School
- BS, Engineering & History, USAFA
- MAS, Aeronautical Science, Embry-Riddle
- USAF KC-135 Instructor/Evaluator Pilot
- Middle School Math
- Devil Physics
- Gator at Heart





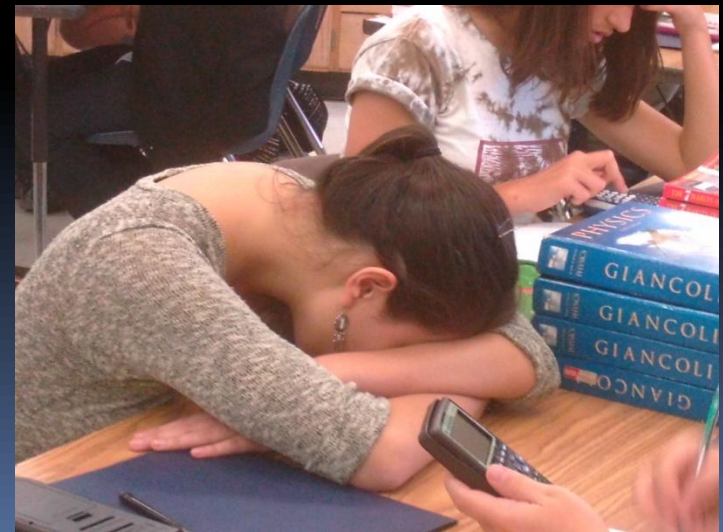
# Assigned Seats

- There is a method to the madness
- Cooperative Learning – Not Cheating
- Homework review
- Attendance



# Block Period SOP:

- Standard Day:
  - Review and Correct Homework from previous Class
  - Lecture on Section(s) and Assign Homework Problems
  - Assign Reading Activity for next Section
- Supplemental Reading Activities
- Labs
- Test Review
- Chapter Test
- Skinny periods



# Turning In Assignments

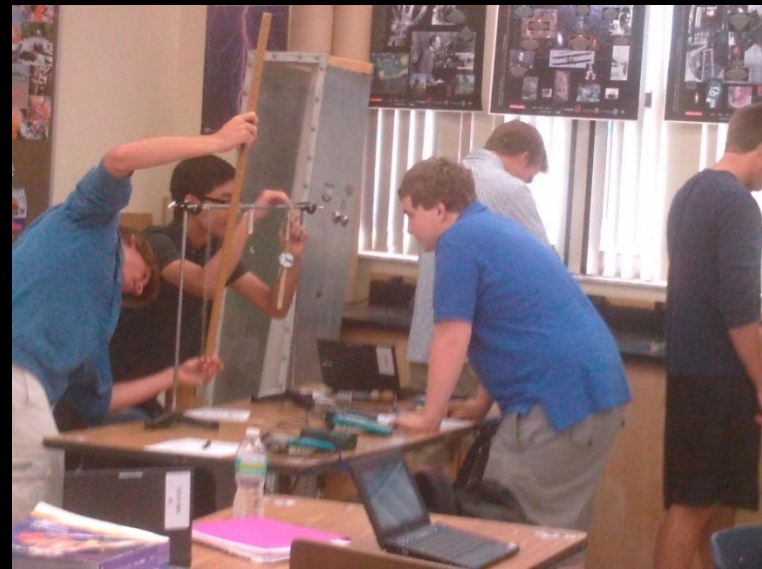
- Homework handwritten hardcopy
- Reading Activities, Supplemental Reading Activities, Lab Reports
  - Printed, Handwritten, Hardcopy
  - Typed, Printed, Hardcopy
  - Typed, Uploaded to Focus (preferred)
- Assignments may be e-mailed only under extreme duress (like deathbed)
- Filename "SmithKPer67BReadAct3-4"

# Grades

- Total Points System
- Reading Activities
  - 3 points max if turned in prior to class lecture (due date)
  - 2 points max if turned in within 1 week of due date
  - 1 point if turned in before test
- Homework Problems
  - 3 points max if turned in during the class HW Review (due date)
  - 2 points max if turned in within 1 week of due date
  - 1 point if turned in before test

# Grades (cont.)

- Labs
  - 20-40 points
  - 1 every two weeks
  - Minus 10% per calendar day after due date
- Chapter Tests
  - 30-40 points each
  - Make-up tests
    - Different, Harder, Longer
  - IB Curve



# IB Curve

- Requirements
  - All HW in by test day
  - Complete Test Review
  - Take test on test day
- Computation
  - Convert score to decimal
  - Take square root
  - Convert new decimal to new score

- Example: Score 30/40

$$30/40 = 0.75$$

$$\sqrt{(.75)} = 0.866$$

$$0.866 \times 40 = 35$$

- 40% → 63% +23%
- 50% → 71% +21%
- 60% → 77% +17%
- 70% → 84% +14%
- 80% → 89% +9%
- 90% → 95% +5%

# Extra Credit

- **Cash only; no credit cards, checks or money orders** (just kidding)
- **End of the grading period, within 2% of the next higher letter grade**
- **4-page paper on a past Nobel Prize winner in Physics**
  - **Who**                      **What**
  - **When**                      **Why**
  - **Where**                      **How**
- **Posted on website – Important Information**
- **Can't do one that's already been done**

# Taking Notes

- AVID – Cornell Notes

Name \_\_\_\_\_

Date \_\_\_\_\_

**CORNELL  
NOTES**

Topic \_\_\_\_\_

Questions/key points

Notes

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Summary



# What You Need

- Textbook
- Pencil – for computations
- Pen for notes
- Blue or red pen for correcting homework
- Notebook paper
- Scientific calculator
- **Memory stick (needed to save work when working with the Box O'Laptops)**
- Water bottle – preferably a reusable metal one
- **Computer/Printer/Internet/E-Mail/MS Word/MS Excel access at home – let me know ASAP if you don't have this**
- E-mail address – see above
- Student resource center available in cases of Student Emergencies

# Conduct and Academic Performance

- **Conduct infractions will be dealt with in accordance with the SPHS Discipline Policy**
- **Failure to Meet Expectations. I will follow the guidelines set forth in the SPHS Response to Intervention (RTI) procedures. In general, if a student fails to meet the expectations of this class, they can expect:**
  - **An individual conference with the teacher**
  - **Phone call to the parents**
  - **Conference with the student and parents**
  - **Referral to appropriate staff agency (disciplinary or academic) for intervention**
- **For IB Students, failure to maintain academic standards will be dealt with in accordance with SPHS IB Policies and Procedures**

# Conduct and Academic Performance

- *The SPHS IB Honor Code and the IBO Standards of Integrity will be strictly enforced*
- *Zero Tolerance*
- *Give No Quarter, Take No Prisoners*

# Class Rules

- **We will not lie, cheat or steal, nor tolerate among us anyone who does. (USAF Academy Honor Code)**
- **We will respect ourselves and others.**
- **We will act professionally at all times.**
- **We will put forth our best effort.**

# Expectations

- **Teacher and students will come to class.**
- **Teacher and students will come to class on time.**
- **Teacher and students will come to class prepared to teach/learn with all needed materials.**

# Expectations (Cont.)

- **Students will complete homework assignments as soon as possible after material has been presented.**
- **Teacher will grade all assignments as soon as possible but no later than one week after turn in (two weeks for labs and tests).**
- **Teacher will put all grades into the grading system by midnight every Sunday so it is visible to students and parents.**

# Expectations (Cont.)

- **Students will seek help whenever anything is not understood.**
- **Teacher will be available for extra help after school a minimum of 1.5 hours per day, three days per week.**

# Expectations (Cont.)

- **Students will place safety as the paramount concern at all times and especially when performing lab experiments.**
- **Teacher will provide a physically and emotionally safe working environment for students at all times.**
- **Teacher and students will give their best effort in all endeavors.**



# My Approach to Teaching



# Important Websites

- Devil Physics
  - <http://sphsdevilphysics.weebly.com/index.html#/>
  - Google 'Devil Physics'
- Portal (Grades)
  - Know your login and password
  - <https://portal.pcsb.org/focus/index.php>
- SPHS
  - <http://www.stpetehigh.com/>

# Curriculum – AP Physics

| Ch | Topics – First Semester                        |
|----|--|
| 1  | Introduction, Measurement, Estimating          |
| 2  | Describing Motion; Kinematics in One Dimension |
| 3  | Kinematics in Two Dimensions; Vectors          |
| 4  | Dynamics: Newton's Laws of Motion              |
| 5  | Circular Motion; Gravitation                   |
| 6  | Work and Energy                                |
| 7  | Linear Momentum                                |

# Curriculum – AP Physics

| Ch | Topic – Second Semester            |
|----|------------------------------------|
| 8  | Rotational Motion                  |
| 11 | Vibrations and Waves               |
| 16 | Electric Charge and Electric Field |
| 18 | Electric Current                   |
| 19 | DC Circuits                        |



# Curriculum – IB Physics-1

## IB Physics - 1

- 1 – Measurements and Uncertainties
- 2 – Mechanics
- 3 – Thermal Physics
- 4 – Waves
- 5 – Electricity and Magnetism
- 6 – Circular Motion and Gravitation
- Internal Assessment

## IB Physics – 2,3

- 7 – Atomic, Nuclear and Particle Physics
- 8 – Energy Production
- 9 – Wave Phenomena
- 10 – Fields
- 11 – Electromagnetic Induction
- 12 – Quantum and Nuclear Physics

# Academic Goals

- **Complete the IB/AP curriculum**
- **Complete required lab hours**
- **All students receive a final grade of 5-7 (IB) or 3-5 (AP)**
- **All students see dramatic increases in their self-efficacy toward physics and are motivated to continue their learning in a Physics-related discipline.**

# IB Physics Only

- [IB LEARNER PROFILE](#)
- [IB Academic Guidelines](#)
- [SPHS IB Honor Code](#)
- [SL Physics Brief](#)
- [HL Physics Brief](#)
- [SL/HL Syllabus](#)



**QUESTIONS?**





STILL NOT INSPIRED?