Physics 1-2 Honors Syllabus for 2018-2019

Course Description:
This course will survey topics related to physics. For those of you unfamiliar with physics, we study “the world around us.” That seems like a rather large topic, but physicists do study everything from motion and forces to electricity, fluids, thermal systems and optics, just to name a few topics. While physics is a science class, we will use the tools of mathematics to describe this world of ours. A previous knowledge of algebra and geometry is expected.

Textbook:
Physics, by Serway and Faughn, copyright 2012. Published by Holt McDougal.

Extra Help:
Mr. Dappen is in 241 before school on B days well before 7:00. He is in room 070 on A days as well. He has plan periods A3 and B8, and is in the homework help room (room 264) after school until 5:00 on Tuesdays and Thursdays, and is in Science Club (room 241) on Wednesdays until 5:00. He is there to help you during any of those times, so don’t hesitate to ask for help.

Types of Assignments: daily assignments, labs, quizzes and tests

Topics covered:

I. Unit I: Forces
   A. Introduction to Physics, Chapter 1
      1. Scientific Method
      2. Units
      3. Metrics, conversions
      4. Trigonometry
   B. Mechanical Forces, Chapter 4
      1. Newton’s Laws
      2. Friction
      3. Gravitation

II. Unit II: Rate, Chapters 2, 3
   A. Speed, velocity
   B. acceleration
   C. Free-Fall
   D. 2-Dimensional motion

III. Unit III: Work, Energy, Power, Momentum, Chapters 5, 6
   A. Work
   B. Potential and Kinetic Energy, Work-Energy Theorem
C. Conservation of Energy
D. Power
E. Momentum, Impulse
F. Conservation of momentum, collisions, explosions

IV. Unit IV: Waves & Optics, Chapters 12-14
A. Sound
   1. Speed of waves
   2. Sound in Tubes
   3. Doppler Effect
B. Geometric Optics
   1. Reflection
      a. Plane mirrors
      b. Concave mirrors
      c. Convex mirrors
   2. Refraction
   3. Lenses
C. Physical Optics
   1. Diffraction
      a. Double-slit diffraction
      b. Diffraction gratings
      c. Single-slit diffraction

Classroom Rules/Policies:
I. Grading will be done according to the district standards:

<table>
<thead>
<tr>
<th>Level</th>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced</td>
<td>4</td>
<td>The student consistently demonstrates a thorough understanding of course content/grade level standard by making in-depth inferences and showing extended</td>
</tr>
<tr>
<td>Proficient + (Approaching Advanced)</td>
<td>3.5</td>
<td>The student demonstrates partial success at showing a thorough understanding of course content/grade level standard by making in-depth inferences and applications of the course content/grade level standard(s).</td>
</tr>
<tr>
<td>Proficient</td>
<td>3</td>
<td>The student demonstrates a proficient understanding of the expected course content/grade level standard(s). The student performs at the level of difficulty, complexity, or</td>
</tr>
<tr>
<td>Basic + (Approaching Proficient)</td>
<td>2.5</td>
<td>The student demonstrates an adequate understanding of the information for the course content/grade level standard(s). The student performs with partial success at the level of difficulty, complexity, or fluency that is at the expected</td>
</tr>
<tr>
<td>Basic</td>
<td>2</td>
<td>The student demonstrates a basic understanding of the information expected for the course content/grade level standard(s).</td>
</tr>
<tr>
<td>Approaching Basic</td>
<td>1.5</td>
<td>The student demonstrates some basic understanding of the information expected for the course content/grade level standard(s).</td>
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</tbody>
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II. Students should be in the room when the bell rings

III. A “Pass Sheet” with four passes will be given to each student to use during the semester. This can only be used if a student is wearing a student ID. If a student loses this sheet or uses all four they will still be allowed to have a pass, but it will cost them a 30 minute detention.

IV. Come to class prepared. Bring paper, a pen or pencil, your book, tablet, and any other necessary materials.

V. Food and Drinks are NOT permitted in the physics room.

VI. Poor behavior will not be tolerated. Courtesy to classmates and the teacher is an expectation.

VII. Cell phones and electronics other than calculators do not belong in this classroom. If they are out, they will be taken for the rest of the block. Repeated issues will result in a referral.

VIII. Clean up before you leave. Don't leave papers on the floor. In lab, your table should be left the way you found it.

IX. Summative assignments will represent 65% of your grade, and Formative assignments will represent 35% of your grade. In addition, there are regular practice assignments, and for every 5 of these, a homework grade will be entered as a Formative assignment. While late work is accepted, it is not wise to procrastinate. The teacher does have the discretion to not accept your work if you have not been diligent during the unit. In other words, don’t wait until the last day to do everything!

I have read and understand the physics syllabus and rules:

____________________________________  ____________________________________
Student signature                  Parent/Guardian Signature