**Multimedia Science – Physics HTML5 Software & Materials Bundle**

OVERVIEW

The Physics Software HTML5 Bundle includes 32 physics applications such as games, challenges, experiments, demonstrations, simulations, presentations, and tutorials. The applications are geared for high school physics or physical science classes.

Several of the games include a high score table and many of the applications include Word documents such as worksheet and lab handouts, answer keys, instructor’s notes, and excel files. The applications with these documents are noted with a DOC next to them in the main menu graphic provided above.

The applications are written in HTML5 and need to run from a server. But once installed, the applications will run on a majority of platforms for use by teachers and students.

Following is a list of the applications:

Games & Challenges

Planet Rocket – Figure out which planet you are on by launching rockets and taking data.  
 Types of Energy Challenge – See if you can identify these energies hiding in the world.   
 Motion Timer Challenge – Students must find a car’s motion from timed markings.  
 Jectile II Game - Students practice solving difficult projectile motion problems.  
 Bombardier Game – Student use projectile motion to hit the target.  
 Projectile Hoops Game – Students must place three hoops to catch a shot projectile.  
 Momentum Race – Quick paced game where students must calculate momentum.  
 Appliance Power Game – Students find out if they know how much power their appliances use.  
 Torque Challenge – Students must solve torque problems at four levels.  
 Acceleration Game – Several games give students a “gut” feeling for what acceleration is.  
 Energy Changes Game – Students must determine the energies in and out for real life examples.

Experiments

2D Momentum Collisions Lab – Simulation of balls rolled down an incline off of a table.   
 Momentum Lab – Students verify the law of conservation of momentum using colliding pucks.  
 Motion Timer Lab - A software simulation of a spark timer lab for a moving toy tractor.  
 Graduated Cylinder – Step by step introduction to graphical analysis.   
 Terminal Velocity Lab – Using a simulation, students find the terminal velocity of objects.  
 Resolving The Problem Lab – Step by step analysis of mass hanging from two strings.  
 Spring Energy Lab – Students find spring constant and verify the law of conservation of energy.  
 Bouncing Spring Lab – By taking data, students develop the spring equation for the period.  
 Newton’s 2nd Law Lab – By taking date, students derive Newton’s 2nd law.

Demonstrations, Simulations, Presentations, Tutorials

Momentum & Impulse Demos – Set of simulations that illustrate several topics.  
 Motion Graphing – Students must draw motion graphs from the graphing simulations.   
 Center of Mass Tutorial – Presentation covering center of mass concepts and calculations.   
 Energy Conservation Demos – Simulations illustrating conservation for a number of objects.  
 Projectile Motion SIMS – Simulations to help explain projectile motion in detail.   
 Simple Harmonic Motion Demo – Simulations illustrate similarities between examples of SHM.  
 Terminal Velocity Demo – Simulations of various object falling towards terminal velocity.  
 Vector Resolution  
 Vector Directions Software – Teaches students to graphically draw and measure vectors.  
 Significant Digits Tutorials – A set of tutorials and drills with interactive simulations.   
 Rotational Motion – Lecture aid develops the basic equations with corresponding simulations.l  
 Friction Bundle – Presentation and lab covering the basic concepts of friction.

All of these applications are available as stand-alone products on the Multimedia Science Teachers Pay Teachers site, but most will only run on the PC platform. You can find out more information about each application by looking it up on the Multimedia Science Teachers Pay Teachers site.

INSTALLATION

Open the downloaded zip file into two folders, Install and Materials. The Materials folder contains handouts, answer keys, and instructor’s notes in separate folders for each application on the Software Bundle Menu.

Copy the files in the Install folder into a folder on the school’s or school district’s server. Provide teachers and students with the URL to that folder including /index.html to run the Software Bundle Menu. For example, if the files are installed in a folder <http://www.school.edu/highschool/physics>, then the URL to access the Software Bundle Menu would be <http://www.school.edu/highschool/physics/index.html>

The software should run on a majority of platforms including PC, MAC, Android, and iOS. Many of the applications will not be useful on small cell phones.

TERMS OF USE

Materials   
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Purchaser may duplicate materials for use with all students and teachers in one school. Purchaser may modify materials but must retain the original copyright notices. None of these materials, even if modified, can be used for commercial purposes or placed on public networks or on the Internet.  
  
Software Bundle   
Purchaser may install software on the school’s or school district’s server. The URL may be used by all students and teachers in one school. The URL may not be shared with anyone outside of the one school.