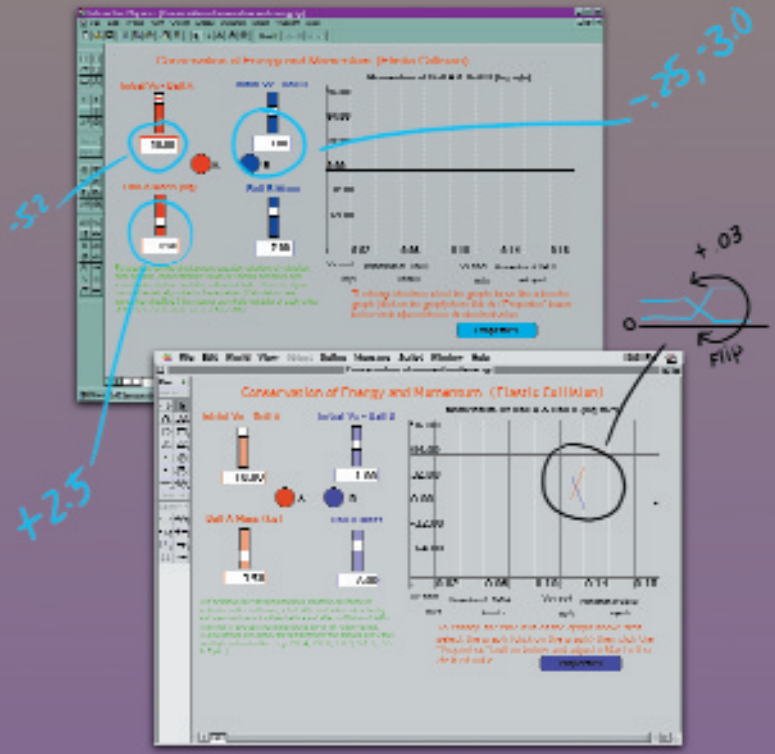
InteractivePhysics



The Standard in Physics Modeling & Simulation Solutions

MSC WORKING KNOWLEDGE
A Division of MSC.Software

Widely adopted by textbook

PUBLISHERS

Curriculum support products:

- Provide a great introduction to the full power of Interactive Physics™
- Complement textbook chapters - seven of the most popular textbooks already include Interactive Physics simulations
- Offer texts, workbooks, and computer exercises keyed for easy lesson planning and grading (see table)
- Enable students to quickly explore specific examples described in their text

Use curriculum support products with a textbook to:

- Keep students interested and motivate them to explore
- Make abstract topics clearer to students
- Encourage hands-on, minds-on, and can-do attitudes in the classroom
- Provide excellent in-class demonstrations
- Reduce time to prepare lessons

Students learn from Interactive Physics simulations when they match a classroom concept with an experiment, and run, change, and rerun that experiment until understanding of the concept emerges. Besides exploring models you develop, they can run simulations available in prepackaged simulation sets developed by publishers to match their textbooks. These excellent simulation packages can be purchased from the textbook publishers - contact your sales representative. Please note that these packages include a limited Interactive Physics Player that will let you run the simulations provided and change their parameters, but you won't be able to customize or create your own models.

Title	Author	Publisher
Conceptual Physics	Hewitt	Addison-Wesley
College Physics	Wilson	Prentice Hall
Physics for Scientists and Engineers	Fishbane, Gasiorowicz Thornton	Prentice Hall
Physics: Principles with Applications	Giancoli	Prentice Hall
College Physics	Serway Faughn	Saunders
Physics for Scientist and Engineers	Serway	Saunders
Principles of Physics	Serway	Saunders

Textbook Publishers and Authors that have adopted Interactive Physics to meet students needs

State-of-the-Art PEDAGOGY

Interactive Physics™ offers powerful tools for modern learning.

- Simulations that develop inquiry skills and physics knowledge
- Model-building for active, constructive problem solving
- Animation to help students visualize abstract concepts
- Multiple representations that support different learning styles

It's about the only way I know of to develop your own curriculum materials and adapt them to your own teaching without having to know programming.

Mark Bunge
San Jose City College

Interactive Physics is the perfect complement to traditional physics instruction.

- Illustrate concepts and principles in lectures
- Simulate difficult, end-of-chapter problems
- Compare simulation results with symbolically-derived solutions

Interactive Physics' modeling and simulation capabilities are especially compatible with inquiry learning.

- ***Reduced complexity*** - modeling tools highlight important relationships and dependencies while filtering out distracting information
- ***Repeatability*** - simulation controls provide opportunities for students to repeat investigations over and over and construct an under standing of the effect of incremental changes in variables
- ***Compressed feed back loops*** - a model's ability to compress time enables students to observe changes in a simulated phenomenon that would ordinarily require long periods of time
- ***Increased range of experience*** - odeling and simulation approaches enable students to experience phenomena that would otherwise be impossible, impractical, or too dangerous
- ***Designed interactions*** - modeling and simulation approaches enable teachers to set up specific cases to focus students' attention

It's in building the models that the learning is really taking place. I was building models and I was dealing with concepts I had never seen before. And I was learning physics. It was almost like a side effect of just the pleasure of building the simulation.

Dave Vasquez
University of Sam Francisco

800.766.6615

State-of-the-Art SOFTWARE

Interactive Physics™ provides a complete motion lab on the computer.

- Model Newtonian mechanics
- Alter friction and elasticity
- Change gravity; even turn it off
- Control almost any physical characteristic of an object
- Create models and simulations limited only by your imagination
- Pictures attached to bodies now rotate
- Pictures attached to bodies can be any shape or appear transparent
- Now you can create buttons that invoke scripts

Interactive Physics is easy to use.

- No programming required
- Build models by drawing on the computer screen
- Springs, ropes, dampers, slots, joints, pulleys, actuators, meters, buttons, sliders, mass shapes available
- Assign parameters to specify conditions for a simulation
- Click RUN to animate the model under specified conditions
- Interactive Physics accurately determines how objects should behave while presenting a realistic simulation

> *Interactive Physics is exciting... This program definitely sets the standard for modeling physical systems on the computer*
>
> *Paul Hewitt*
> *Author, Conceptual Physics*

Besides building models, Interactive Physics lets you and your students make important measurements while a simulation runs.

- Measure physical quantities such as velocity, acceleration, momentum, angular momentum, kinetic energy, and friction
- Display measurements as numbers, graphs, or animated vector displays

Empower your students to discover their own physics knowledge. Offer them the opportunity to model, simulate, and explore a wide variety of physics phenomena with state-of-the-art Interactive Physics software.

www.interactivephysics.com

Homework EDITION

Empower your students to use Interactive Physics™ for out-of-the-classroom assignments, Internet projects, and take-home examinations. With the interactive Physics Homework Edition, students install the software on their family or personally owned computers. The homework Edition has all the power, features and ease-of-use teachers depend upon in the classroom. Students can build models with bodies and constraints, meters and input controls, run simulations, print, save, and use the help system. This powerful product is available to current customers with a 10-user license (or larger) of Interactive Physics. The software ships on a CD ROM for each student (no manual included.) The Homework Edition is sold in increments of fifteen. Contact your MSC Working Knowledge representative for more information.

Whether you choose the flexibility and power to build, modify and run models offered by the full Interactive Physics product or the convenience of simulations keyed to your lessons, MSC Working Knowledge has the right solution to accompany any of the most popular High School or College Physics texts.

System REQUIREMENTS

Windows® 95 (or later) or NT 4.0 (or later)

Minimum:

486 with 12 MB of RAM and 15 MB of free hard disk space

Recommended:

Pentium™ with 16 MB of RAM and 30 MB of free hard disk space

CD-ROM drive required for installation only

Mac™ OS system 7.1 or greater

Minimum:

8 MB of RAM and 8 MB of free hard disk space

Recommended:

12 MB of RAM and 12 MB of free hard disk space

CD-ROM drive required for installation only

www.interactivephysics.com

MSC WORKING KNOWLEDGE
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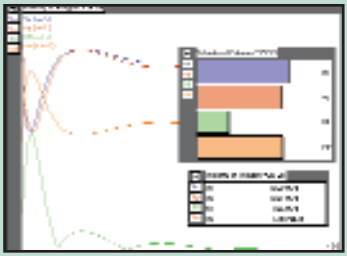
Easily Integrates into your
CURRICULUM

We designed Interactive Physics™ so that you can benefit from the product immediately.

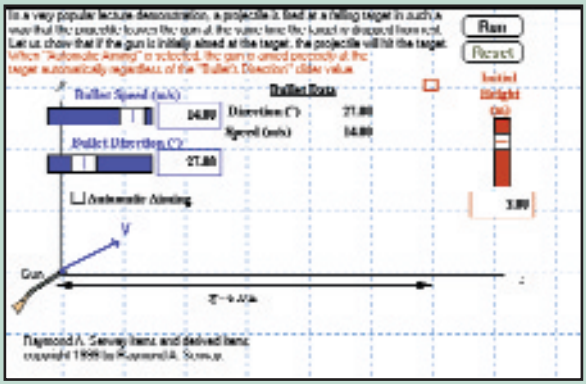


View your output three ways; digital, graph, bar

- Select from a new library of over 100 ready-to-run experiments that match your content needs
- Use the new picture library to make models that are visually more appealing.
- Rapidly customize existing models to meet your specific needs
- Quickly create your own library of re-usable models
- Use students' models to extend your school's simulation library
- Access our World Wide Web site to share and exchange models with other educators

Interactive Physics features make it easy to integrate modeling and simulation into your physics curriculum.

- Re-usable graphics and flexible design tools shorten the time required to build new models to meet your specific teaching needs. Drag and drop:
  - -model components from the toolbox
  - -controls to set and modify experimental parameters
  - -meters to view experimental output
  - -pictures to create a relevant context for your model
- Easy to use interface saves time while you and your students explore a simulation.



Explore the path that an arrow might follow

With Interactive Physics you can:

- Vary time, gravity, or materials in just seconds
- Easily display properties of objects that you could not display in a lab; for example, show vectors or highlight the path of a mass
- Completely control the direction and rate at which a simulation animates: forward, backward, fast forward, slow motion, and freeze frame

Interactive Physics enables you to develop relevant experiments with varying levels of sophistication. By providing you with abundant examples and the tools required to customize them, we make it easy for you to enrich your teaching of Newtonian mechanics with a minimum investment of valuable time.

www.interactivephysics.com

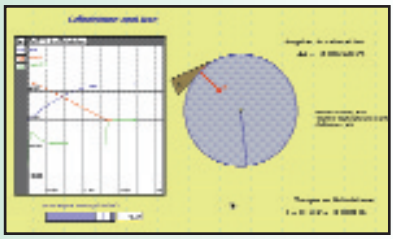
Interactive Physics™ 5.0

Easy to

LEARN...

Reach proficiency quickly

- Automatic installation on PC or Mac
- Easy to use interface
- Online step-by-step tutorial
- Wide range of sample experiments
- Apple Guide and WinHelp
- Comprehensive manual



NO PROGRAMMING required. Building simulations has never been easier

- Use drawing tools to create a model by direct manipulation
- Drag vectors onto objects to set initial conditions
- Run the model and let our revolutionary simulation engine do all the hard work

Students of all levels at the high school.. .gain from being able to use more than just lab equipment and benefit by being able to use Interactive Physics.

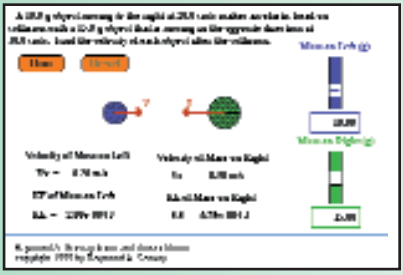
Peter Wilding
San Rafael High School

Fun to

...USE

Modifying existing simulations is even easier

- Point, click, and drag to modify the size and location of model components
- Switch your frame of reference to change views of an experiment
- Set values manually or use equations



Interactive Physics is designed to be useful as soon as it is installed. The package contains a large selection of ready to use experiments as well as tutorials and a comprehensive manual.

800.766.6615

Interactive Physics around the WORLD

Leading educators around the world recognize the tremendous teaching power of Interactive Physics.

Many countries around the world have adopted the use of computer - based learning tools for education. In countries, such as Brazil, France, Mexico, and Singapore, schools and education officials have selected Interactive Physics as the software standard for physics modeling and simulation solutions.
To support our international customers, MSC - Working Knowledge:

- Sells and supports Interactive Physics in many countries throughout the world including Brazil, Chile, Germany, Hong Kong, Japan, Korea, Mexico, France, Netherlands,Norway, Russia, Singapore, Australia, South Africa, Spain, Sweden, Switzerland, and the UK.

- For a complete listing of international distributors please visit our website at interactivephysics.com

- Offers localized and translated versions of Interactive Physics in a number of languages, including **Portuguese and Spanish** . Coming soon - German, French, Dutch, Italian, Greek, Japanese, and Chinese.

The success of Interactive Physics in the Brazilian schools of Sao Paolo has allowed teachers to use computers as a powerful way to visually exhibit physics phenomena to their students. This influence has impacted the way students learn - they learn faster and they are more eager to discover and explore new solutions with an easy to use and fun software program like Interactive Phsyics.

Eduardo Tambor Jr.,
Educare Informatica, SP - Brazil

Ahora en Español!
Agora em Portugues!

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