

Physlets

 Indicates a research-demonstrated benefit

Overview

Small, flexible, educational physics applets designed for use in quizzes, homework problems, and Just in Time Teaching activities. Can be used as part of almost any curriculum with almost any teaching style. Created and controlled with JavaScript, allowing instructors and students to modify and adapt them. Physlets use simple graphics to convey only the salient features of physical phenomena. Can be downloaded free and run on any platform.






Type of Method

Computer simulations




Level

Designed for: Intro College Calculus-based , Intro College Algebra-based , Advanced Undergraduate , Intro College Conceptual, Intermediate Undergraduate

Can be adapted for: Teacher Preparation, High School



Setting

Designed for: Lecture - Small (<30 students) , Lab, Homework, Studio

Can be adapted for: Lecture - Large (30+ students)



Coverage

Few topics with great depth, Many topics with less depth



Topics

Mechanics, Electricity / Magnetism, Waves / Optics, Thermal / Statistical, Modern / Quantum



Instructor Effort

Medium






Resource Needs

Projector in class, Computers for student use in class, Computers for student use outside of class










Skills

Designed for: Problem-solving skills , Conceptual understanding of physics content , Connecting conceptual and mathematical understanding , Coherent framework for physics, Think like a scientist, Representing knowledge in multiple ways

Can be adapted for: Laboratory skills, Designing experiments, Creativity

 **Research Validation**

Based on research into: how students learn  , student ideas about specific topics 
Demonstrated to improve: scores on multiple choice conceptual tests  , scores on written conceptual tests 
Studied using: conceptual pre/post exams  , problem-solving pre/post exams  , beliefs pre/post exams 

 **Compatible Methods**

[Peer Instruction](#), [PhET](#), [UW Tutorials](#), [JiTT](#), [Ranking Tasks](#), [ILDs](#), [CGPS](#), [Context-Rich Problems](#), [RealTime Physics](#), [Workshop Physics](#), [TIPERs](#), [ABP Tutorials](#), [SCALE-UP](#), [Modeling](#), [OSP](#), [SDI Labs](#), [OST Tutorials](#), [ISLE](#), [Thinking Problems](#), [Workbook for Introductory Physics](#), [LA Program](#), [PET](#), [PSET](#), [LEPS](#), [CAE TPS](#), [Lecture-Tutorials](#), [Astro Ranking Tasks](#), [MBL](#), [New Model Course](#), [CPU](#), [SCL](#), [TEFA](#), [CU Modern](#), [CU E&M](#), [CU QM](#), [QuILTs](#), [IQP](#), [Thermal Tutorials](#), [Mechanics Tutorials](#), [Energy Project](#), [SGSI](#), [Paradigms](#), [PUM](#), [EiP](#), [Tools for Scientific Thinking](#), [PI QM](#), [M&I Tutorials](#), [Clickers](#), [MOP](#), [Responsive Teaching](#)

 **Similar Methods**

[PhET](#), [OSP](#), [CPU](#)

 **Developer(s)**

Wolfgang Christian

 **Website**

<http://www.compadre.org/physlets>