



Physics Union Mathematics

Indicates a research-demonstrated benefit

Overview

A physics/physical science curriculum that builds on intrinsic mathematical reasoning to develop and strengthen mathematics and physics concepts.

	Type of Method	Full curriculum, Curriculum supplement
	Level	Designed for: High School , Middle School Can be adapted for: Teacher Prep Course, Teacher Professional Development, Intro College Calculus-based, Intro College Algebra-based, Intro College Conceptual
	Setting	Designed for: Lecture - Small (<30 students) , Recitation/Discussion Session, Lab, Homework
	Coverage	Few topics with great depth
	Topics	Mechanics, Electricity / Magnetism
	Instructor Effort	High
	Resource Needs	Projector, Computers for students, Advanced lab equipment, Tables for group work
	Skills	Designed for: Conceptual understanding, Problem-solving skills, Lab skills, Using multiple representations, Designing experiments, Metacognition Can be adapted for: Making real-world connections
	Research Validation	Based on research into: theories of how students learn , student ideas about specific topics Demonstrated to improve: conceptual understanding , lab skills Studied using: classroom observations
	Compatible Methods	JiTI , Physlets , SCALE-UP , Modeling , OSP , ISLE , CPU
	Similar Methods	ISLE
	Developer(s)	Eugenia Etkina, Suzanne Brahmia, Chis D'Amato, James Finley, Jim Flakker, Danielle Bugge, Richard Therkorn



Website

<http://pum.rutgers.edu>



Intro Article

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Intro Article

[Searching for Evidence of Student Understanding](#)