



PER User's Guide

Physics Education Research

Evidence-based resources for teaching physics



Diagnoser Tools

 Indicates a research-demonstrated benefit

Overview

Tools to elicit students' initial ideas, lessons to engage those ideas, assessment items, and reporting structures for students and teachers.



Type of Method

Instructional strategy, Curriculum supplement



Level

Designed for: Teacher Professional Development , Middle School , Teacher Prep Course, High School

Can be adapted for: Intro College Calculus-based, Intro College Algebra-based, Intro College Conceptual, Intermediate, Upper-level Undergraduate



Setting

Designed for: Lecture - Small (<30 students) 

Can be adapted for: Lecture - Large (30+ students), Recitation/Discussion Session, Lab, Homework, Studio



Coverage

Few topics with great depth



Topics

Mechanics, Waves / Optics, Other Science, Pedagogy



Instructor Effort

Medium



Resource Needs

Computers for students, internet access





Skills




Designed for: Conceptual understanding 





Can be adapted for: Problem-solving skills, Making real-world connections, Using multiple representations, Designing experiments, Metacognition



Research Validation

Based on research into: theories of how students learn , student ideas about specific topics 

Demonstrated to improve: conceptual understanding , beliefs and attitudes , retention of students 

Studied using: classroom observations , analysis of written work , research at multiple institutions , research by multiple groups 



Compatible Method

[PBI](#)



Similar Method

None

 Developer(s)	FACET Innovations
 Website	http://www.Diagnoser.com
 Intro Article	4322
 Intro Article	Designing Diagnostic Assessments