



Open Source Tutorials

Indicates a research-demonstrated benefit

Overview

Guided-inquiry worksheets for small groups in recitation section of intro algebra-based physics. Instructors engage groups in Socratic dialogue.



Type of Method

Curriculum supplement



Level

Designed for: Intro College Algebra-based , TA/faculty professional development
Can be adapted for: High School, Intro College Calculus-based, Intro College Conceptual, LA development



Setting

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



Coverage

Many topics with less depth



Topics

Mechanics, Electricity / Magnetism, Waves / Optics, Pedagogy



Instructor Effort

Medium



Resource Needs

TAs / LAs









Skills

Designed for: Conceptual understanding , Making real-world connections, Using multiple representations, Building models, Metacognition, Reconcile intuitions and everyday experiences with formal physics knowledge



Research Validation

Based on research into: theories of how students learn , student ideas about specific topics
Demonstrated to improve: conceptual understanding , beliefs and attitudes
Studied using: cycle of research and redevelopment , classroom observations , analysis of written work , research at multiple institutions , research by multiple groups , peer-reviewed publication

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|  Compatible Methods | Peer Instruction , PhET , UW Tutorials , JiTT , Ranking Tasks , ILDs , CGPS , Physlets , Context-Rich Problems , RealTime Physics , TIPERs , ABP Tutorials , SCALE-UP , OSP , SDI Labs , Thinking Problems , Workbook for Introductory Physics , LA Program , CAE TPS , MBL , CPU , SCL , TEFA , Tools for Scientific Thinking , Tutorials , Clickers |
|  Similar Methods | UW Tutorials , ABP Tutorials , Lecture-Tutorials , QuILT s, Thermal Tutorials , Mechanics Tutorials , Tutorials |
|  Developer(s) | Rachel E. Scherr and Andrew Elby |
|  Website | http://www.spu.edu/depts/physics/tcp/tadevelopment.asp |
|  Intro Article | 5244 |
|  Intro Article | Enabling Informed Adaptation of Reformed Instructional Materials |

Teaching materials

Email Rachel Scherr at rescherr@gmail.com to get the password to download the full set of tutorials, tutorial homework, accompanying interactive lecture demonstrations, test questions, instructor's guides, and materials for TA training workshops.

Resources, training, & community

The developers have three pages with information about the Open Source Tutorials:

- <http://spu.edu/depts/physics/tcp/tadevelopment.asp>
- <http://www2.physics.umd.edu/~elby/CCLI/index.html>
- <http://umdperg.pbworks.com/w/page/10511239/Tutorials%20in%20Physics%20Sense-Making>