# Interactive Lecture Demonstrations

Indicates a research-demonstrated benefit

## Overview

Worksheets for use in lecture. Students predict results of demos, discuss in small groups, observe results, compare with predictions and explain.

<table>
<thead>
<tr>
<th>Type of Method</th>
<th>Instructional strategy, Curriculum supplement</th>
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| Level          | Designed for: Intro College Calculus-based  📚, Intro College Algebra-based  📚  
Can be adapted for: High School |
| Setting        | Designed for: Lecture - Large (30+ students) 📚  
Can be adapted for: Lecture - Small (<30 students), Studio |
| Coverage       | Many topics with less depth |
| Topics         | Mechanics, Electricity / Magnetism, Waves / Optics, Thermal / Statistical |
| Instructor Effort | Low |
| Resource Needs | Cost for students, Laboratory equipment for instructor to do demonstrations, but not laboratory equipment for all students |
| Skills         | Designed for: Conceptual understanding 📚, Using multiple representations |
| Research Validation | Based on research into: theories of how students learn 📚, student ideas about specific topics 📚  
Demonstrated to improve: conceptual understanding 📚  
Studied using: research at multiple institutions 📚, research by multiple groups 📚, peer-reviewed publication 📚 |
| Compatible Methods | Peer Instruction, PhET, UW Tutorials, JiTT, Ranking Tasks, CGPS, Physlets, Context-Rich Problems, RealTime Physics, Workshop Physics, TIPERs, ABP Tutorials, SCALE-UP, OSP, SDI Labs, OST Tutorials, Thinking Problems, Workbook for Introductory Physics, LA Program, CAE TPS, MBL, CPU, SCL, TEFA, Tools for Scientific Thinking, Tutorials, Clickers |
| Similar Methods | Peer Instruction, RealTime Physics, Workshop Physics, CAE TPS, MBL, TEFA, Tools for Scientific Thinking |
Developer(s)  David Sokoloff and Ron Thornton


Intro Article  10557

Intro Article  Use of interactive lecture demonstrations: A ten year study

Resources, training, & community

Guide:  SERC Guide to ILDs

Articles about ILDs:


• Manjula D. Sharma et al., Use of interactive lecture demonstrations: A ten year study, Physical Review Special Topics - Physics Education Research 6, no. 2 (October 8, 2010): 020119.

• Ron Thornton, Web-delivered interactive lecture demonstration: Creating an active science learning environment over the Internet, Forum on Education of the American Physical Society, Fall 2003.


• Interactive Lecture Demonstrations, in E. F. Redish, Teaching Physics with the Physics Suite (2003), pp. 135-137.

Workshops:

The developers of ILDs regularly offer in-person workshops, with dates regularly updated on their website.