




## 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.





**Type of Method**

Instructional strategy, Curriculum supplement




**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
-  **Website** <http://www.wiley.com/WileyCDA/WileyTitle/productCd-EHEP001706.html>
-  **Intro Article** 10557
-  **Intro Article** [Use of interactive lecture demonstrations: A ten year study](#)

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## **Resources, training, & community**

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**Guide:** [SERC Guide to ILDs](#)

### **Articles about ILDs:**

- David R. Sokoloff and Ronald K. Thornton, [Using interactive lecture demonstrations to create an active learning environment](#), *The Physics Teacher* 35, no. 6 (1997): 340.
- 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*.
- Wittmann and van Breen, [On the dissemination of a proven curriculum: RealTime Physics and Interactive Lecture Demonstrations](#), 2002, <http://perlnet.umephy.maine.edu/research/Wittmann2002RTPpaper.pdf>
- [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](#).