



## Tools for Scientific Thinking

 Indicates a research-demonstrated benefit

### Overview

Laboratory activities that use microcomputer-based laboratory tools to develop both conceptual understanding and quantitative laboratory skills.





**Type of Method**

Curriculum supplement



**Level**

**Designed for:** Intro College Calculus-based , Intro College Algebra-based , High School



**Setting**

**Designed for:** Lab   
**Can be adapted for:** Studio



**Coverage**

Many topics with less depth



**Topics**

Mechanics, Thermal / Statistical



**Instructor Effort**

Low






**Resource Needs**

Computers for students, Advanced lab equipment, Cost for students, Tables for group work



**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 



**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](#), [OST Tutorials](#), [Workbook for Introductory Physics](#), [LA Program](#), [CAE TPS](#), [MBL](#), [CPU](#), [TEFA](#), [Tutorials](#), [Clickers](#)



**Similar Methods**

[ILDs](#), [RealTime Physics](#), [SDI Labs](#), [MBL](#), [SCL](#)



**Developer(s)**

Ron Thornton and David Sokoloff



**Website**

[http://pages.uoregon.edu/sokoloff/Active\\_Learning.html](http://pages.uoregon.edu/sokoloff/Active_Learning.html)

