



## Investigative Science Learning Environment

Indicates a research-demonstrated benefit

### Overview

Comprehensive learning system for introductory physics that engages students in experiences that mirror experiences of practicing scientists.



#### Type of Method

Instructional strategy, Curriculum supplement

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



#### Level

**Can be adapted for:** Teacher Prep Course, Teacher Professional Development, Intro College Conceptual, Intermediate, Upper-level Undergraduate, Graduate School, Any



#### Setting

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



#### Coverage

Few topics with great depth, Many topics with less depth



#### Topics

Mechanics, Electricity / Magnetism, Waves / Optics, Thermal / Statistical



#### Instructor Effort

Medium



#### Resource Needs

Projector, Advanced lab equipment, Cost for students



#### Skills

**Designed for:** Conceptual understanding , Problem-solving skills , Lab skills , Using multiple representations , Designing experiments , Metacognition

**Can be adapted for:** Making real-world connections



#### Research Validation

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

**Demonstrated to improve:** conceptual understanding , problem-solving skills , lab skills

**Studied using:** student interviews , classroom observations , analysis of written work , research at multiple institutions



#### Compatible Methods

[PhET](#), [JiTT](#), [Physlets](#), [SCALE-UP](#), [Modeling](#), [OSP](#), [LA Program](#), [MBL](#), [CPU](#), [PUM](#), [Clickers](#), [Responsive Teaching](#)

 **Similar  
Methods**

[PUM](#)

 **Developer(s)**

Eugenia Etkina, Alan Van Heuvelen

 **Website**

<http://www.islephysics.net/>

