



Tutorials

 Indicates a research-demonstrated benefit

Overview

Guided-inquiry worksheets that students work through in small groups, typically in a recitation section. Instructors circulate through the room and engage with students in Socratic dialog, leading students to discover the answers to their own questions. There are many types of tutorials in different subjects (see similar methods).



Type of Method

Curriculum supplement, Tutorials



Level

Designed for: Any



Setting

Designed for: Recitation/Discussion Session

Can be adapted for: Lecture - Small (<30 students), Studio



Coverage

Many topics with less depth



Topics

Mechanics, Electricity / Magnetism, Waves / Optics, Thermal / Statistical, Modern / Quantum, Astronomy



Instructor Effort

Medium



Resource Needs

Teaching Assistants / Learning Assistants, Tables arranged for group work





Skills



Designed for: Conceptual understanding of physics content







Can be adapted for: Problem-solving skills, Connecting conceptual and mathematical understanding, Understanding how physics relates to the real world, Think like a scientist, Reflecting on one's own learning, Self-confidence around physics, Enjoyment of physics, Laboratory skills, Representing knowledge in multiple ways, Designing experiments



Research Validation

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

Demonstrated to improve: scores on multiple choice conceptual tests , scores on written conceptual tests 

Studied using: conceptual pre/post exams , student interviews , classroom observations , video of students , research conducted at multiple institutions , research conducted by someone other than developers 



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](#), [Thinking Problems](#), [Workbook for Introductory Physics](#), [LA Program](#), [CAE TPS](#), [Lecture-Tutorials](#), [Astro Ranking Tasks](#), [MBL](#), [New Model Course](#), [CPU](#), [SCL](#), [TEFA](#), [CU Modern](#), [CU E&M](#), [CU QM](#), [QuILTs](#), [IQP](#), [Thermal Tutorials](#), [Mechanics Tutorials](#), [Paradigms](#), [Tools for Scientific Thinking](#), [Clickers](#)



Similar Methods

[UW Tutorials](#), [ABP Tutorials](#), [OST Tutorials](#), [Lecture-Tutorials](#), [QuILTs](#), [Thermal Tutorials](#), [Mechanics Tutorials](#)



Resources

To find out more about specific sets of tutorials, follow the links under **Similar Methods** above.

For more information about tutorials in general, see the [University of Maryland page on facilitating tutorials](#).