



Tutorials in Thermal & Statistical Physics

 Indicates a research-demonstrated benefit

Overview

Guided-inquiry worksheet activities (tutorials) designed to help students develop a better understanding of upper-division thermodynamics and statistical mechanics.



Type of Method Curriculum supplement, Tutorials




Level

Designed for: Intermediate Undergraduate , Advanced Undergraduate 

Can be adapted for: Intro College Calculus-based, Intro College Algebra-based



Setting

Designed for: Lecture - Small (<30 students) , Recitation/Discussion Session



Coverage

Many topics with less depth



Topics

Thermal / Statistical




Instructor Effort

Medium




Skills

Designed for: Conceptual understanding of physics content , Connecting conceptual and mathematical understanding





Can be adapted for: Problem-solving skills, Coherent framework for physics



Research Validation

Based on research into: student ideas about specific topics 

Demonstrated to improve: scores on written conceptual tests 

Studied using: conceptual pre/post exams , student interviews , video of students , research conducted at multiple institutions 



Compatible Methods

[Peer Instruction](#), [PhET](#), [JiTT](#), [CGPS](#), [Physlets](#), [SCALE-UP](#), [OSP](#), [LA Program](#), [CAE TPS](#), [Paradigms](#), [Tutorials](#), [Clickers](#)



Similar Methods

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



Developer(s)

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Resources

For more information and to access the tutorials, email Mike Loverude at mloverude@fullerton.edu

