



CAE Think/Pair/Share

 Indicates a research-demonstrated benefit

Overview

Engage students in lecture classes by asking cognitively engaging multiple-choice questions to challenge their thinking and foster deep discussion.



Type of Method

Instructional strategy



Level

Designed for: Intro College Conceptual

Can be adapted for: Teacher Prep Course, Teacher Professional Development, Middle School, High School, Intro College Calculus-based, Intro College Algebra-based, Intermediate, Upper-level Undergraduate



Setting

Designed for: Lecture - Large (30+ students) 

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



Coverage

Many topics with less depth



Topics

Astronomy



Instructor Effort

Low





Skills


Designed for: Conceptual understanding  , Using multiple representations


Can be adapted for: Problem-solving skills, 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 

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](#), [Thinking Problems](#), [Workbook for Introductory Physics](#), [LA Program](#), [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](#), [PI QM](#), [M&I](#), [Tutorials](#), [Clickers](#)

 **Similar Methods** [Peer Instruction](#), [ILDs](#), [Workbook for Introductory Physics](#), [TEFA](#), [PI QM](#), [Clickers](#)

 **Developer(s)** Center for Astronomy Education

 **Website** <http://astronomy101.jpl.nasa.gov/teachingstrategies/teachingdetails/?StrategyID=23>

Teaching materials

See our [Expert Recommendation on finding good questions to use with clickers or Peer Instruction](#) for an extensive list of databases of think/pair/share questions, as well as suggestions for writing your own questions.