# Peer Instruction in Physics & Astronomy

By encouraging student participation and interaction during the lecture, Peer Instruction encourages students to critically think through the arguments being developed, and to discuss their ideas and insights with their neighbors.

Briefly, lectures are broken into sections. We start with a brief, more-or-less standard format mini-lecture on one of the fundamental concepts to be covered. This mini-lecture is then followed by a ConcepTest -- a short multiple-choice question that tests the students' understanding. After one minute, the students record an answer and are then asked to turn to their neighbors to try and convince them of their answers. This invariably leads to animated discussions. After another minute or so, the students are asked to reconsider their answer and record it again. A quick poll is taken so the instructor can decide whether to move on to the next concept, or to continue on the same. This process repeats until the end of the class.

Peer Instruction was originally developed and implemented for introductory Physics by Eric Mazur at Harvard. The improvements in student performance have been widely publicized in Sheila Tobias' book Revitalizing Undergraduate Science (Research Corporation, 1992).

For more details, check out Mazur's PEER INSTRUCTION: A User's Manual, a book developed with funds from the National Science Foundation and the Pew Charitable Trust. Instructors have pointed out the benefits of teaching by questioning over the more traditional approach of teaching by telling. This has led to consistent, measurable short- and long-term improvement in student performance. Student satisfaction with the course has been high. Instructors across the country, teaching in a variety of institutions to widely differing student bodies, have noted similar benefits.

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# How can we implement Peer Instruction in Astronomy?

- Check out or contribute to *a growing library of ConcepTests for introductory astronomy!*

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