In the fall of 2014, we transformed the lecture portion of Physical Sciences 2 based on research in cognitive psychology and physics education. During class, small groups of students practiced physicist-like reasoning and problem solving. They received constant feedback from peers, instructors, and TFs, followed by short, targeted lectures. We compared student performance on identical final examinations given in 2013 and 2014. The transformed course had a normalized gain of over 20%, including a substantial increase in the number of high performers and a large decrease in the failure rate. Student attitudes towards physics (as measured by the widely-used CLASS survey) became significantly more “expert-like,” with a notable increase in the “personal interest” category. Student feedback on the “Q guide” improved as compared with previous years. We will discuss the implication of these results for course transformations in Physics and in other departments.