nCASE proposes training the nation’s Science, Technology, Engineering, and Mathematics (STEM) teacher workforce in an augmented Inquiry and Design (I&D) method of instruction. I&D, which is attracting interest among STEM educators nationwide, emulates the scientific method in the classroom. A student-centered approach, it emphasizes inquiry (science and mathematics) and design (engineering) elements. The teacher is cast in the role of a facilitator and co-researcher with scientists and engineers as mentors in a communal process of learning through inquiry and experimentation. The process shows considerable promise as a method for captivating and engaging students’ inquiring minds.

Integrate STEM into curriculum
Promote discovery/inquiry and design in learning
Encourage real-world experiences using scientists and engineers in the STEM classroom
Model a student-centered classroom using hands-on learning
Mapped to the Common Core State Standards
Promote assessment and evaluation

Activity One — Secret Messages
Activity Two — Sound Search
Activity Three — Good Vibrations
Activity Four — Analyzing Waves
Activity Five — Making Waves
Activity Six — Can You Hear Me Now
Activity Seven — Sing to Your Own Tune
Problem Solving — Design a Sound-Proof Box