



STEM

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.

DESIGNED TO



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

High School Acoustics

CONTENT CURRICULUM CONNECTIONS

- ◆ Science of Sound
- ◆ Communications Technology
- ◆ Digital Information
- ◆ Music

PROCESS CURRICULUM CONNECTIONS

- ◆ Inquiry
- ◆ Design
- ◆ Problem Solving
- ◆ Communication
- ◆ Connections
- ◆ Representations

MODULE AT A GLANCE

Activity One — Singing to Your Own Tune

Activity Two — Communicating without Sound

Activity Three — Mystery Signal Sender

Activity Four — Broadcast Yourself

Activity Five — Change that Channel

Activity Six — Bits and Bytes

Activity Seven — Light Speed Communication

Activity Eight — Explore the Notes

Activity Nine — Battle of the Bands

Problem Solving — Design Challenge



nCASE

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