



Fractions & Geometry

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

CONTENT CURRICULUM CONNECTIONS

- ◆ Divide sets of objects and single whole objects
- ◆ Ordering
- ◆ Equivalence of fractions
- ◆ Proportional reasoning
- ◆ Fractions as numbers
- ◆ Locate and compare fractions on a number line
- ◆ Fraction equivalence
- ◆ Fraction density
- ◆ Negative fractions
- ◆ Translate between fractions, decimals and percent
- ◆ Use visual representations of formal computation
- ◆ Estimation
- ◆ Reasonableness of answer
- ◆ Real-world contexts
- ◆ Depth of understanding of fractions
- ◆ Use varied pictorial representations of fractions
- ◆ Use concrete representations of fractions
- ◆ Assess understandings and misunderstandings of fractions

PROCESS CURRICULUM CONNECTIONS

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

MODULE AT A GLANCE

- Activity One — Fun With Pattern Block Fractions**
- Activity Two — Can You Find My Spot?**
- Activity Three — The Unusual Baker**
- Activity Four — Picnicking with Fractions**
- Activity Five — Bits and Pieces**
- Activity Six — School Lunches**
- Activity Seven — Golden Ratio**
- Activity Eight — Summer Daze**
- Problem Solving — Design Challenge**



nCASE

45 W. Kerr St, Uniontown, PA 15401

Phone: (724) 425-5993 • Fax: (724) 438-4568

www.nacase.org