

# **EDC's Science Mentoring Model: Supporting and Sustaining Ongoing Teacher Professional Development**

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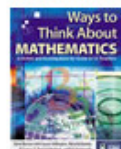
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- Science Career Development

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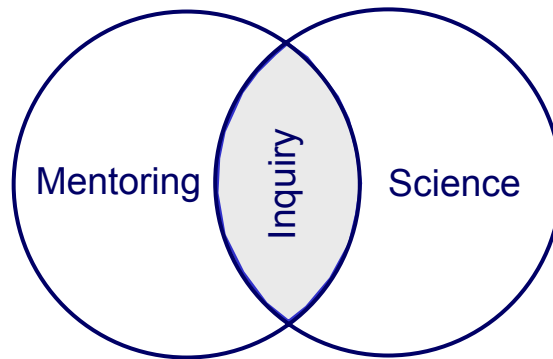
# CSE's Work

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- **Instructional Materials Development**
- **Professional Development and Technical Assistance**
- **Research and Evaluation**
- **Science Career Development**

# EDC Science Mentoring Program

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## Middle-Grades Science Mentoring Program

- [Let EDC work with you as you prepare to lead professional development for mentors](#)
- [View a video introducing our mentoring program](#)  
(to download the latest version of Quiktime)
- [Register for the CSE Online Course "Science Assessment in the Middle Grades" \(starting on January 28th\)](#)

### Overview

The Middle-Grades Science Mentoring Program is a model program for the development and support of middle-grades science mentor teachers. Using Massachusetts as a field site, the project team—composed of science educators, scientists, and mentoring specialists—helped a group of 18–24 experienced science teachers to improve their skills, knowledge, and confidence so they can work effectively with new science teachers from mentor schools or districts. Forty-eight district administrators and principals also participated. The





# Goals of the EDC Mentoring Model

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- Improve teaching practice and content knowledge of both mentors and mentees
- Enhance capacity of schools
- Build a community of teachers

# Unique Features of the EDC Mentoring Model

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- Integration of science content, pedagogy, and mentoring strategies
- Use of research-based curricula as a common teaching and learning experience
- Use of a mentoring protocol that addresses inquiry teaching

# Key Elements of the EDC Mentoring Model

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## Drawing on the Research

- Inquiry for Teacher Learning
- Reflection
- Classroom Observation
- Use of a Common Curriculum

# Design of EDC Mentoring Model

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- **Science institutes: content** (physical, life, and earth sciences), **pedagogy, and mentoring**
- **Classroom co-planning, observations and conferencing**
- **Mentor study groups**
- **Mentee groups**
- **Administrator engagement and support**

# Materials and Tools

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- Curriculum units and materials
- Research articles about science and mentoring
- Mentoring tools – *inquiry protocol* used for planning and observation, and *collaborative assessment log* to record notes from mentoring meetings

# Inquiry Protocol for Planning and Observation

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## I. Phases of Inquiry/Learning Cycle

## II. Infrastructure

## III. Assessment



# I. Phases of the Inquiry/Learning Cycle

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## I. Phases of Inquiry/Learning Cycle

- a. Exploratory Phase
- b. Conducting Experiments and Data Collection
- c. Sense-Making Discussions

# I. Phases of the Inquiry/Learning Cycle

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## A. Exploratory Phase

- How is the investigation introduced?
- How are the materials introduced?
- How are directions given to students? Think about using multiple modalities.
- How is scientific language introduced during the exploration?
- How does the teacher interact with the groups during the exploration?
- What role, if any, will journals play during this investigation?

# I. Phases of the Inquiry/Learning Cycle

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## B. Conducting Experiments and Data Collection

- How are the experiments introduced?
- How does the teacher interact with the groups during the investigation?
- Are the students able to demonstrate actual, standards-based data collection? Are they able to reproduce data?

# I. Phases of the Inquiry/Learning Cycle

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## C. Sense-Making Discussions

- How does the teacher have students report their data or observations?
- How does the teacher help students clarify the data or observations?
- How does the teacher help students interpret the data?
- How does the teacher introduce explanations and conceptualizations?

## II. Infrastructure

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- How will the teacher organize and manage materials to provide students with easy access?
- How does the teacher interact with groups?
- How does the teacher manage his or her time?

# III. Assessment

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- **What should students know, understand, and be able to do?**
- **Which assessment method will you use?**



# Collaborative Assessment Log

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Mentor: \_\_\_\_\_  
Mentee: \_\_\_\_\_  
Date: \_\_\_\_\_

**TYPE OF MEETING:** \_\_\_planning  
\_\_\_pre-observation conferencing  
\_\_\_post-observation conferencing  
\_\_\_other \_\_\_\_\_

<b>What's working</b>	<b>Current focus</b>
<b>Mentee's next steps</b>	<b>Mentor's next steps</b>
<b>Next meeting date</b>	<b>Focus of next meeting</b>

# Program Impact

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**Self-reports from mentor teachers revealed:**

- **100% had improved their science teaching**
- **94% had increased their enthusiasm for teaching science**
- **87% had gained a greater understanding of science content**

# Program Impact

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- **100% said mentees became more confident in their science teaching**
- **100% said mentees improved their science teaching**

# EDC's Science Mentoring Program:

The Integration of Science Teaching and Mentoring

