

Friends of Detectives

Science Education Partnership Award

Fall 2001

Year 2

We have completed the first year of our three-year Science Education Partnership Award (SEPA) to create "Detectives in the Classroom," a curriculum that will teach middle school students the science of epidemiology.

This year we will pilot-test and refine the investigations (lessons) for Understandings 1, 2, and 3, continue to create the investigations for Understandings 4 and 5, recruit and train 20 Field-Testing Team teachers, and begin to field-test.

Pilot Testing

Drafts of the thirty investigations for Understandings 1, 2, and 3 are posted on our website, <http://www.montclair.edu/detectives>. Each investigation is written in PowerPoint. "Teacher Only" slides help the teacher prepare to teach the investigation. The other slides, to be shown to the students during the investigation, are accompanied by detailed notes that include mouse clicks, "Trouble Shooting" suggestions, and "Misconception Alerts."

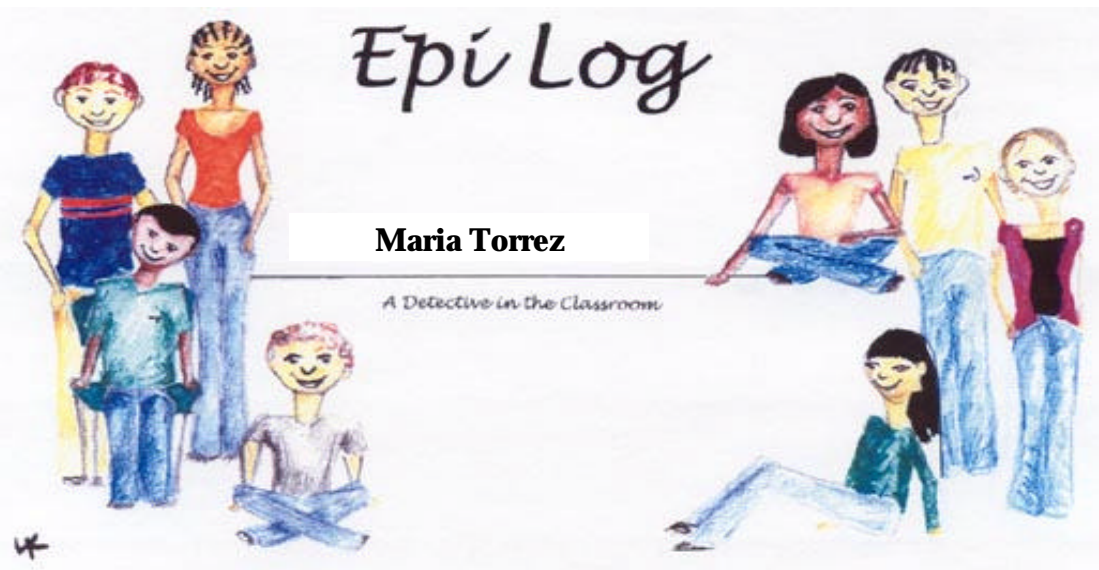
Using a "See One, Do One, Teach One" approach, these investigations will be pilot-tested with the seventh grade students of two members of the Advisory Board; Lynn Tarant from School 9 in Paterson and Tim Purnell from the Renaissance School in Montclair. This fall, Lynn will observe Mark teaching an investigation to her period 1 science students (See One). Then Lynn will teach the same investigation to her period 2 science students (Do One). And later, in July 2001, Lynn will train 20 field-testing team teachers how to teach the same investigation (Teach One). Mark and Tim will repeat the above process in January and February 2002.



Lynn Tarant's seventh grade science students are welcomed to "Detectives in the Classroom".

All the investigations will be videotaped during pilot testing. The videotapes will be used to help the Advisory Board refine the investigations, train the 20 field-testing team teachers, and as demonstrations on our website.

Each student will have an "Epi Log" in which they enter definitions, calculations and other notes during each investigation. There will be a decal on each student's notebook, shown below.



The Understanding 4 investigations help students appreciate the limits of epidemiology. Students will realize that when a causal association has been identified, decisions about possible disease prevention strategies are based on more than scientific evidence. They will uncover how competing values, as well as social, economic, and political factors must also be considered. At the completion of the investigations, students should be able to answer the question: "What should individuals and society do when preventable causes of disease are found?"

The Understanding 5 investigations are aimed at getting students to realize that the effectiveness of a disease prevention strategy can be evaluated by making and comparing rates of disease in populations of people who were and were not exposed to the strategy. However, evaluations must also consider costs, trade-offs and alternative strategies. At the completion of the investigations, students should be able to answer the question: "Did the disease prevention strategy work?"

Field-Testing Teachers

"Detectives in the Classroom" will be field-tested by a Field-Testing Team consisting of 20, seventh grade, science teachers, whose school systems are members of the New Jersey Network for Educational Renewal.

We will begin to recruit the Field-Testing Team in January 2002. In addition to being able to walk on water, Field-Testing Team teachers must agree to:

1. Attend a forty-hour "Detective in the Classroom" Training Workshop from July 15-

- 19, 2002.
2. If assigned to the experimental group, teach “Detectives,” with fidelity and in its entirety, between September 2002 and March 2003.
 3. If assigned to the control group, postpone teaching “Detectives” until the following year.
 4. Attend four debriefing meetings, during school time, on the first Friday of the months of October 2002, November 2002, January 2003, and February 2003.
 5. Assure that the evaluation protocol is implemented.

Lynn, Wendy, Tim, and Mark will teach the 40-hour “Detectives in the Classroom” Training Workshop. The workshop will provide the following:

- An understanding of epidemiological methods,
- An intensive review of the “Detectives in the Classroom” web site,
- An opportunity to view portions of the Advisory Board middle school teachers’ videotapes,
- Numerous opportunities to practice teaching the investigations to their peers.

The Field-Testing Team teachers in the control group will attend only the portion of the workshop that addresses the assessment protocol and will participate in the “Detectives in the Classroom” Training Workshop after field-testing is completed.

Project Directors Meeting

Due to the tragic events of September 11, the SEPA Project Directors meeting, scheduled for October 15-17, was postponed. It will be held in March 2002 in Houston. We plan to present a poster session and also participate in a breakout session demonstrating how “Detectives in the Classroom” uses technology.

How You Can Help

- Refer a seventh grade science teacher to us.
- Identify an instrument to measure *Science as Inquiry* abilities.

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Mark Kaelin, Project Director
Wendy Huebner, Collaborator
Karen Fox, Graduate Assistant

Montclair State University

Telephone: 973-655-7123, e-mail: kaelinm@mail.montclair.edu

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