

Experiences with Inquiry: Developing strategies to incorporate elements of inquiry into teaching

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Stages in full inquiry investigations



1. Students are engaged with a scientific question, event, or phenomenon.
2. Students are free to explore their ideas through hands-on experiences where they can create and test their self-developed hypotheses.
3. Students analyze and interpret their data to synthesize their ideas and formulate working models.
4. Students connect what they have learned to their own ideas.
5. Students extend, apply and evaluate what they have learned to future tasks and problems.

Scenario - How to incorporate inquiry?



- **“Lecture” Goals:**
 - Teach students about clinical vision to prepare them for a field trip to the UC Berkeley School of Optometry.
- **Topics that needed to be discussed:**
 - Reasons for basic refractive errors in the eye
 - How to correct these errors: glasses, contact lenses, laser refractive surgery (LASIK)
 - Introduction to diagnostic tools used during eye exams and the information they provide to clinicians
 - Pathology Prep- Ocular and Retinal Diseases and their treatments
 - Careers in Vision
- **Allotted Teaching Time: *ONLY 2 Hours 30 Minutes!***
 - ➔ Does this limit how and what I can teach?

Engaging students in scientific questions



- Time spent on activity: ~ 50 minutes
- **Task:** Classify each group of lenses and observe any trends or patterns within each group.
- Materials provided to group (5 students per group):
 - Projector with slide focused at infinity
 - Piece of white cardboard serving as a moveable screen
 - Meter stick
 - Different sets and powers of correcting lenses



Facilitating exploration



- Class had already been taught some optics and lens properties.
- Observed that some groups were struggling a bit in the beginning.
 - Pulled them back together to remind them of some of the basic properties of lenses and provide some possible directions.
 - The students were then set free once again.
- “Challenge Activity” was successful in eliciting group activity and discovery
 - *Still wish we had a little bit more time to explore!*

