



Teaching Chemistry Through Inquiry

THE PEANUT LAB

In this case study, we will observe Teresa Gerchman, a veteran teacher of 17 years, as she leads her 10th-grade students through a lesson on calculating energy and caloric content. Teresa teaches Advanced Placement and college preparatory chemistry at Spencerport High School. The class in this case study contains 21 regular education students and 3 special education students. A teacher aide assists Mrs. Gerchman 2–3 days a week by providing resource help in the room to the three special education students.

After participating in several professional development workshops on inquiry 5 years ago, Teresa shifted her instructional methodology to an inquiry-based approach. She now incorporates inquiry into all phases of her instruction. Teresa is also the head of the science department and places a high emphasis on inquiry-based instruction throughout the department, which she reinforces by modeling scientific inquiry in her classroom. Teresa's chemistry labs usually involve students writing their own investigations, designing procedures, and choosing what kind of data to collect. Over the course of the school year, students will plan and design 10–15 of their chemistry labs. Her chemistry course culminates with students designing and carrying out a full research project in May. This lab focuses on decision making and determining the amount of energy stored (caloric content) in a peanut. Although many high school chemistry teachers undoubtedly are familiar with the infamous "peanut lab," during this experience, students, not the teacher or the lab manual, decide how to plan the procedure, what materials to use, and how data will be collected and represented.

