

Types of Inquiry

Modified from *The Science Teacher*, February 2002 Vol. 69
Open, Guided, Coupled and Structured Inquiry

Open or “Full” Inquiry

- Build upon prior experiences and inquire about the overarching concepts
- Display the tools, materials
- Begin with the student’s question
- Continue with student(s) designing and conducting the investigation or experiment
- Complete the learning cycle by communicating the results

Clarification: The students have a prior experience with a set variety of tools and materials. The teacher then displays these tools and materials and asks the students what questions they could devise using the materials provided. Students formulate testable questions, devise a plan using the materials, carry out their investigation, and record and analyze their data. Students use the data to make a generalization or conclusion or further question and share the process and outcomes with peers.

Guided Inquiry

- Teacher selects the over arching question
- Whole Class or groups of students work to assist in developing the laboratory procedure and learn specific skills needed for future open-inquiries.
- Using the data gathered or provided, students generate explanations
- Findings and claims are communicated

Clarification: When the more complex concepts cannot be investigated directly in the classroom, teachers can provide applicable scientific data from a variety of sources to use in the guided inquiry.

Coupled Inquiry

- Teacher chooses the first question to investigate—specifically targeting a standard or set of benchmarks
- After the guided inquiry, students engage in an open or full inquiry. (*see above*)

Clarification: *Using this approach will ensure that the students questions will closely align with the standard or set of benchmarks. The teacher creates enthusiasm for an inquiry and initiates the guided inquiry. Students then initiate an open inquiry. Groups of students share their findings regarding their open inquiry. Students analyze professional literature (electronic, periodicals, texts...) for support of their inquiry findings. The teacher poses a problem that students solve by applying their student’s understanding of the standard or set of benchmarks. This serves as an assessment.*

Structured Inquiry: Inquiry guided by the teacher

- Students follow teacher directions to come up with a specific end point or product
- The teacher asks the class to discuss the results when the inquiry is complete

Clarification: *Lab setup, time considerations, concept development, place in the learning cycle, student aptitude are a few variables that may help the teacher determine the appropriate use of this inquiry strategy. Keep in mind that this approach lends itself to prescribed questions, protocols, and outcomes. “More student thinking takes place when the teacher allows students to make choices and decisions in classroom investigations (Clough and Clark, *The Science Teacher* 61: 34-37).”*