

Facilitator's Guide

Inquire Within

Second Edition

IMPLEMENTING INQUIRY-BASED
SCIENCE STANDARDS IN GRADES 3-8

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Chapter-by-Chapter Study Guide

Facilitator's Guide to Inquire Within: Implementing Inquiry-Based Science Standards in Grades 3–8, Second Edition

Chapter 1: Becoming an Inquiry Teacher

Summary

Becoming an inquiry-based science teacher commences a journey of self-actualization. The journey often starts with several reflection questions: Who am I? What kind of teacher am I? What kind of teacher do I want to be a year from now? Five years from now? What kinds of professional development and support system do I need to bridge my present state to my desired state? Although many teachers often think this kind of reflection is frivolous, having clear-cut goals and objectives makes the journey easier to manage and the desired state easier to achieve.

Activity 1.1: Self-Directed Learning

Purpose: At the conclusion of this activity, each participant will be able to

- Address his or her present and desired states in becoming an inquiry-based science teacher.
- Craft an individual professional development plan that will bridge the gap between the present and the desired states.

Activity 9.3: What's Your IQ?

Purpose: At the conclusion of this activity, each participant will be able to

- Seek questions in an inquiry-based investigation.
- Assess one's ability capacity to see questions in an open-ended exploration.

Time: 45 minutes

Materials: Short-eared and long-eared Bugs-o-Copters (see *Inquire Within*, Second Edition, Resource E), scissors, paper clips

Task: Follow the suggestions on pages 176–179 in *Inquire Within*, Second Edition. Have participants list as many questions as possible that can be derived from the exploration. Have each participant list his or her own questions on a separate sheet of paper. Use the individual sheets to make a collective poster of possible questions to investigate. Explain that the more questions one can see from an exploration or investigation, the higher his or her Inquiry Quotient (IQ) and that as one sees more questions, that person raises his or her capacity to teach through inquiry.

Discussion Questions

Reflect and discuss the four questions at the end of Chapter 9 on page 192:

1. Using the consciousness/competence learning model, where would you place yourself on the matrix or ladder?
2. Using the Inquiry Rubric, where would you place yourself on the matrix? What professional development would you need to progress to the next level?
3. Ideas are often summarized by quotations or phrases. One quotation on equity and inquiry is "Curious people are not bounded by their birthplace or the color of their skin, but merely by the extent of their intuitiveness." Write a phrase or catchy statement that captures the connection of inquiry with high-need students.
4. What other instructional strategies can you suggest to accommodate high-need or LEP students in an inquiry classroom? For physically disabled students? For students with learning disabilities? For visually impaired students?

Handout E: Task for Balls and Ramps—Station 3

Materials:

- One 12-inch ruler with groove
- Five blocks (or books), each 1 inch high
- One marble and another ball of your choice
- One measuring tape
- Science journals

Task 1: Using the materials at the station, design and carry out a procedure that will have a marble, when released from a ramp, stop precisely at a point 5 feet from the end of the ramp. Draw an illustration of the design in your science journal.

Task 2: Repeat Task 1, this time using a golf ball (or any other ball you select) instead of a marble. Answer the question: How did you change the design of the procedure for Task 2? Record all your data in your science journal.

Task 3: Design and carry out an investigation to determine how the angle of a ramp affects the distance a marble will travel. Draw an illustration of the design and record all your data in your science journal.

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