

# HIGH QUALITY SCIENCE INSTRUCTION: WHY DOES INQUIRY MATTER? BECAUSE THAT'S WHAT SCIENCE IS ALL ABOUT!

*North Dakota Curriculum Initiative*

*Kelly Inn ~ Bismarck, North Dakota*

December 1-2, 2008

HIGH QUALITY SCIENCE  
INSTRUCTION:  
WHAT IS IT?



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**Monday December 1, 2008**

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**Essential Question:**

- Inquiry science: what is it?

**Focusing Question:**

- Does inquiry science instruction motivate students to learn?
- Are students more intellectually engaged with important science concepts when teachers use inquiry approaches?
- Does inquiry instruction supports student sense-making of the science concepts?

**Outcomes:** Participants will

- Become familiar with the research about inquiry science instruction and the myths around inquiry science teaching.
- Be introduced to the elements of Inquiry and practice evaluating lessons to determine if they are inquiry based.
- Engage in self-reflection and discussion about their current practice related to inquiry.
- Participate in inquiry science lessons and then propose revisions to improve the quality of science instruction.
- Practice improving a science lesson by making it more inquiry based.

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**10:00 – 10:15**

**Welcome and Agenda Overview**

**10:15 – 11:45**

**Presentation:** Why Inquiry-Based Teaching? (Review of ASCD article, "Inquiring Scientists Want to Know." Anne Tweed, NSTA President 2004-2005, NCCC Liaison to North Dakota)

**11:45 – 12:30**

**Lunch**

**12:30 - 2:15**

**Features of Inquiry Instruction:** What does the research tell us about the features of inquiry instruction and what are the common myths? Participants will examine lessons sample lessons.



2:15 – 3:45

**Vignettes:** Observations of science lessons using the characteristics of inquiry instruction.

3:45 – 4:00

**Sense-making and Wrap Up**

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Tuesday December 2, 2008

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**Essential Question:**

➤ Is all inquiry instruction the same? How does it look and how do I do it?

**Focusing Questions:**

- What is the relationship between inquiry and effective science instruction?
- How is effective questioning a key piece of inquiry learning?
- How can teachers improve their science instruction and change existing activities into inquiry based lessons?

8:00 - 9:00

**Presentation:** What is meant by Scientific Inquiry, inquiry learning and inquiry teaching? What role does effective questioning play?

9:00 – 10:30

**Inquiry Lessons:** Using a sample lesson, learn how to help students generate testable scientific questions. Tools and templates will be used and discussed.

10:30 – 10:45

**Break**

10:45 – 11:45

**Inquiry Lessons:** Using sample student inquiry activities learn how to help students create Experimental Design Diagrams.

11:45 – 12:30

**Lunch**

12:30 – 1:30

**Inquiry Lessons:** How can existing science activities be turned into inquiry based lessons that support development of student conceptual understanding? (Participants should bring activities to revise and share)

1:30 – 2:00

**Planning and Evaluation:** Networking and discussion of what teachers can do improve their inquiry science instruction.

