NSTA Web Seminar:


Wednesday, December 17, 2008
Karen Ansberry  Emily Morgan

Authors, *Picture-Perfect Science Lessons: Using Children's Books to Guide Inquiry*
Using Children’s Books to Guide Inquiry
Karen Ansberry and Emily Morgan
NSTA Web Seminar
December 17, 2008
Your Ideas About Inquiry

1. All science subject matter should be taught through inquiry.

2. True inquiry occurs only when students generate and pursue their own questions.

3. Student engagement in hands-on activities guarantees that inquiry teaching and learning are occurring.
That Magnetic Dog
What sticks to a magnet?
Polling Question

A. Penny
B. Paperclip
C. Aluminum Foil
D. Steel Wool
E. CD
Magnetic and Nonmagnetic
Magnets attract metal objects like keys and spoons.

My dog Skitty doesn’t attract metal.
The Day My Feet Were Magnets

One day I woke up and my feet felt funny. I looked...
Let’s Pause for Two Questions from the Audience
Features of Inquiry

• Students are engaged in a question.
• Students give priority to evidence.
• Students develop explanations based on evidence.
• Students evaluate their explanations in light of alternative explanations.
• Students communicate their explanations.

Exploratorium Institute for Inquiry

http://www.exploratorium.edu/ifi/about/index.html
“I’ll end up teaching only what the kids are interested in learning!”

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“I’ll end up teaching only what the kids are interested in learning!”

Our job is to create interest by making the subject matter relevant, intriguing, and fascinating.

Example: Moon Survey
“I have to teach everything through inquiry!”

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"I have to teach everything through inquiry!"

Teaching effectively requires a variety of approaches and strategies. Inquiry is not appropriate in all situations.

Examples:
lab safety
drivers’ education
CPR
“Inquiry is just another word for hands-on activities.”

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“Inquiry is just another word for hands-on activities.”

Participation in hands-on activities does not guarantee that students are mentally engaged in the essential features of inquiry.

Example:
“Cookbook” Labs
“Wait a minute… This is going to be too chaotic for my kids to handle!”
“Wait a minute…
This is going to be too chaotic for my kids to handle!”

Inquiry-based instruction is a continuum with variations from teacher guided to learner self-directed.

Example: Inquiry Continuum
<table>
<thead>
<tr>
<th>ESSENTIAL FEATURE</th>
<th>VARIATIONS</th>
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<tbody>
<tr>
<td>1. <strong>Learners are engaged in scientifically oriented questions.</strong></td>
<td>Learner engages in question provided by teacher or materials</td>
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<td>Learner sharpens or clarifies the question provided</td>
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<td>Learner selects among questions, poses new questions</td>
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<td>Learner poses a question</td>
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<td>2. <strong>Learners give priority to evidence, which allows them to develop and evaluate explanations that address scientifically oriented questions.</strong></td>
<td>Learner given data and told how to analyze</td>
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<td>Learner given data and asked how to analyze</td>
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<td>Learner directed to collect certain data</td>
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<td>Learner determines what constitutes evidence and collects it</td>
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<td>3. <strong>Learners formulate explanations from evidence to address scientifically oriented questions.</strong></td>
<td>Learner provided with evidence</td>
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<td>Learner given possible ways to use evidence to formulate explanations</td>
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<td>Learner guided in process of formulating explanations from evidence</td>
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<td>Learner formulates explanation after summarizing evidence</td>
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<td>4. <strong>Learners evaluate their explanations in light of alternative explanations, particularly those reflecting scientific understanding.</strong></td>
<td>Learner told connections</td>
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<td>Learner given possible connections</td>
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<td>Learner directed toward areas and sources of scientific knowledge</td>
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<td>Learner independently examines other resources and forms the links to explanations</td>
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<td>5. <strong>Learners communicate and justify their proposed explanations.</strong></td>
<td>Learner given steps and procedures for communication</td>
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<td>Learner provided broad guidelines to sharpen communication</td>
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<td>Learner coached in development of communication</td>
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<td>Learner communicates and justifies explanations</td>
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# Questions about Magnets

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Question Sort

Researchable vs. Testable Questions
What are *your* Inquiry Starters?
Let’s Pause for Two Questions from the Audience
Your Ideas About Inquiry

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3. Student engagement in hands-on activities guarantees that inquiry teaching and learning are occurring.

<table>
<thead>
<tr>
<th>Agree</th>
<th>Disagree</th>
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Scaredy Squirrel

Mélanie Watt
What to do in case of an emergency according to Scaredy Squirrel:

Step 1: Panic
Step 2: Run
Step 3: Get kit
Step 4: Put on kit
Step 5: Consult Exit Plan
Step 6: Exit tree (if there is absolutely, definitely, truly no other option)
Thursday
9:37 a.m.
He's a FLYING squirrel!

Scurry Squirrel is no ordinary squirrel.
And plays DEAD.

30 minutes later

1 hour later

2 hours later
P.S. As for the emergency kit, Scaredy Squirrel is in no hurry to pick it up just yet.
Thank you!
Let’s Pause for Two Questions from the Audience
Thanks to our presenters, Karen Ansberry and Emily Morgan, and to NSTA Press for sponsoring this program.
http://www.elluminate.com
• FDA: Teach Science Concepts and Inquiry with Food
  December 18, 2008

• Sally Ride Science: Igniting Students’ Interests in Science Careers
  January 8, 2009

• Toshiba/NSTA ExploraVision Awards: How to Avoid Disqualification in ExploraVision
  January 14, 2009

http://learningcenter.nsta.org
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