Inquiry Based Learning: It’s not just for the Science Classroom

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Getting to know us...

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Activity 1: Math

**Question:** How do the factors and constant for the quadratic equation help identify the correct graph?

**Procedures:** Match each equation, factors, and solution with the correct graph on the worksheet. Once you have completed the worksheet you should be able to answer the question.

**Solution:** Remember the rules to solving the quadratic equation!
**Question:** How do the factors and constant for the quadratic equation help identify the correct graph?

<table>
<thead>
<tr>
<th>Graph</th>
<th>Equation</th>
<th>Factors</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Graph 1" /></td>
<td>$y = x^2 - 4$</td>
<td>$(x + 2)(x - 2)$</td>
<td>$x = -2, 2$</td>
</tr>
<tr>
<td><img src="image2.png" alt="Graph 2" /></td>
<td>$y = x^2 + x - 2$</td>
<td>$(x + 2)(x -1)$</td>
<td>$x = -2, 1$</td>
</tr>
<tr>
<td><img src="image3.png" alt="Graph 3" /></td>
<td>$y = x^2 + x -12$</td>
<td>$(x -3)(x + 4)$</td>
<td>$x = 3, -4$</td>
</tr>
<tr>
<td><img src="image4.png" alt="Graph 4" /></td>
<td>$y = x^2 + 5x + 6$</td>
<td>$(x + 2)(x +3)$</td>
<td>$x = -2, -3$</td>
</tr>
</tbody>
</table>
What is Inquiry Based Learning?
E. Lee May, Salisbury State University, defines IBL:

Inquiry-based learning (IBL) is a method of instruction that places the student, the subject, and their interaction at the center of the learning experience. At the same time, it transforms the role of the teacher from that of dispensing knowledge to one of facilitating learning. It repositions him or her, physically, from the front and center of the classroom to someplace in the middle or back of it, as it subtly yet significantly increases his or her involvement in the thought-processes of the students.
<table>
<thead>
<tr>
<th>Level of Inquiry</th>
<th>Definition of Level</th>
<th>Question</th>
<th>Methods</th>
<th>Solution</th>
<th>Level of Bloom’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Confirmation—Students confirm a principle through an activity in which the results are known in advance.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Remembering and Understanding, Describe, Define, Explain, Infer, Discuss, Interpret</td>
</tr>
<tr>
<td>2</td>
<td>Structured inquiry—Students investigate a teacher-presented question through a prescribed procedure.</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>Applying, Use, Diagram, Make a chart, Solve, Apply, Calculate</td>
</tr>
<tr>
<td>3</td>
<td>Guided inquiry—Students investigate a teacher-presented question using student designed/selected procedures.</td>
<td>✓</td>
<td></td>
<td></td>
<td>Applying, Creating, Evaluating, Analyzing</td>
</tr>
<tr>
<td>4</td>
<td>Open inquiry—Students investigate topic-related questions that are student formulated through student designed/selected procedures.</td>
<td></td>
<td></td>
<td></td>
<td>Applying, Creating, Evaluating, Analyzing</td>
</tr>
</tbody>
</table>

NSTA: Simplifying Inquiry Instruction
Question: How do the factors and constant for the quadratic equation help identify the correct graph?

Procedures: Match each equation, factors, and solution with the correct graph on the worksheet. Once you have completed the worksheet you should be able to answer the question.

Solution: Remember the rules to solving the quadratic equation!
**Activity 2: English (Level 3)**

**Question:** Based on literary references from the past unit, is revenge ever justified?

<table>
<thead>
<tr>
<th>Stories from the Past Unit:</th>
<th>Possible Products:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- The Cask of Amontillado</td>
<td>- Opening Argument for a court case</td>
</tr>
<tr>
<td>- The Most Dangerous Game</td>
<td>- Blog Post/ Advice column</td>
</tr>
<tr>
<td>- A Sound of Thunder</td>
<td>- Thesis Statement</td>
</tr>
<tr>
<td>- An outside source</td>
<td></td>
</tr>
</tbody>
</table>
Activity 3: History (Level 2)

**Question:** How did the Cold War affect the U.S. domestic policies and American society?

**Method:** After analyzing the document packet, create a product that demonstrates your understanding of the Cold War’s effect on U.S. domestic policies and American society.
Lesson Title: Being an American During the Cold War

Teacher: John Smith  
Content Area/Class: U.S. History

Unit: Cold War  
Time: 2-90 minute class periods

SOL/Standard(s) Strand:
VUS.13 The student will demonstrate knowledge of United States foreign policy since World War II by
b) explaining the origins of the Cold War, and describing the Truman Doctrine and the policy of containment of
communism, the American role in wars in Korea and Vietnam, and the role of the North Atlantic Treaty
Organization (NATO) in Europe;

Inquiry Question: (Enduring Understanding(s)/Big Idea(s)):
-How did the Cold War affect the U.S. domestic policies and American society?

Essential Questions (list only those applicable to this lesson):
-What was the impact of the Cold War on Americans at home?

Essential Understanding(s) (refer to VA SOL Curriculum Framework, if applicable. Summarize):
The Cold War set the framework for global politics for 45 years after the end of World War II. It also influenced
American domestic politics, the conduct of foreign affairs, and the role of the government in the economy after
1945.

Essential Skill(s) (refer to VA SOL Curriculum Framework, if applicable. Summarize):
Formulate historical questions and defend findings, based on inquiry and interpretation. (VUS.1c) Develop
perspectives of time and place. (VUS.1d) Apply geographic skills and reference sources to understand how
relationships between humans and their environment have changed over time. (VUS.1g)
ENGAGE: Opening Activity – Access Prior Learning / Stimulate Interest / Generate Questions:
Students will watch the 1951 film “Duck and Cover”, produced by the US government for students during the Cold War. After watching this video, have students “Think-Pair-Share” with a partner discussing how the video makes you feel in general, what it shows about America during this time period, and how does it relate to current policies you face as a student?
https://www.youtube.com/watch?v=IKqXu-5jw60

EXPLORE: Lesson Description – Materials Needed / Probing or Clarifying Questions:
Students will individually analyze primary source documents using the activity handout to determine their meaning.

EXPLAIN: Concepts Explained and Vocabulary Defined:
In groups of 3 or 4, assign each group a document from the worksheet and the corresponding question. Have each group peer review and come to a consensus about the meaning of the document and present to the class during discussion.
### ELABORATE: Applications and Extensions

Students will demonstrate their knowledge and understanding of the key concepts covered in the documents analysis as they pertain to the driving question. Students are free to choose from the following group of options to demonstrate their knowledge:

- Documentary (Newscast)
- Essay (front page news article, blog response)
- Graphic Novel
- Presentation (Animoto, Prezi)

**Guidelines:** Be sure to address the question by incorporating the information from the documents and relevant outside information. Support the theme with pertinent facts, examples, and details.

### EVALUATE:

**Formative Monitoring (Questioning / Discussion):** Guided document analysis and class discussion

**Summative Assessment (Quiz / Project / Report):** Project

### Elaborate Further / Reflect: Enrichment

In the mindset of a student from the 1950s-60s, write a letter to your future self about what it was like to be an American and a student during that time period. Reference key concepts from the American lifestyle and education system at the time.
Brainstorm ideas of inquiry for your subject area using the lesson plan template