Got 99 Problems?
PBL Can Help!

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The Illinois Mathematics and Science Academy
Statewide Educator Innovation
Who Are We?

• Public Residential Math and Science Academy, grades 10-12

• Educator outreach within Illinois, across the country, and globally
Objectives:

• Learn about Problem Based Learning at IMSA
  • Immerse in a brief PBL experience
  • Explore training structures
  • Discuss future options
What is Problem Based Learning (PBL)

Problem Based Learning is a student-centered, inquiry-based instructional approach utilizing a real-world, ill-defined (messy) problem to both introduce and explore specific content.
Hello,

My name is Nicole and I have a small homemade perfume business. I plan to open an online store and ship my products across the US. To do so, I must consider shipping factors.

I plan to use packing peanuts in a way that is both environmentally friendly and economical. Below are two options I have found, labeled A and B. One is Styrofoam and another is "sustainable", I can't recall which is which. I am providing samples of both along with some current pricing information.

<table>
<thead>
<tr>
<th></th>
<th>Peanut A</th>
<th>Peanut B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>44.89</td>
<td>24.49</td>
</tr>
<tr>
<td>Amount of Product</td>
<td>2000/bag</td>
<td>500/bag</td>
</tr>
</tbody>
</table>

There is more to overall cost of use than simply the sticker price of the peanuts. Sometimes things listed as good for the environment are not so sustainable when put into practice. I am hoping you can you help to determine which peanut is, in fact, the most usable, economical and environmentally friendly, considering my products are liquids in containers that may break.

I look forward to your suggestions so I can open my business in 2 weeks!

Thank you,
Nicole R.
Understanding the Problem

Two important questions arise: *what do we know about the problem and what more do we need to know to solve the problem?* We typically ask these questions in a whole class setting using a Know/Need to Know chart. *Please fill in your answers to these questions for the perfume problem on the chart below.*

<table>
<thead>
<tr>
<th>Know</th>
<th>Need to Know</th>
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Problem Statement Helps
Define the Journey

How do we ______ in such a way that we consider_______?
PBL Basics:

Three Stages of Problem Based Learning

- Understanding the Problem
- Exploring the Curriculum
- Resolving the Problem
PBL Basics

• Messy Real World Problem
• Multiple routes to solution
• Connected to curriculum
• Students lead with facilitation
• Real stakeholders who may use solution
• Uses authentic assessments, but can relate to traditional/standard tests and quizzes
• Familiar: rooted in inquiry-based, problem-centered instruction
Updating the Traditional

- Traditional yields best results
- One complaint: difficult to immediately implement
- Common question: how do we assess
- One consideration: experience with inquiry

How do we develop PBL training that shows the accessibility of the technique?
3 Course Training

Begin with the traditional

Focus on Design Elements

Address Preparation and Adaptation
Options

• Standard 3 course option – asynchronous, with instructor support.
• Offered various times throughout the year
• Currently $50/per course

• In person training options
• 3-6 hour versions, week long workshops
• Offered periodically, varied pricing

• Custom Option
• Can be blended with online experience
• $$ but optimal for large groups
Thank You!

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Please tell us how we did!

3 Hour Micro Certification courses:

![QR Code]