The Value and Use of Demonstrations

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Outline

• Why do demos?
• What makes a good demo
• Demos as instruction
• Demos as an example
• Demos to illustrate
• Demos to excite
Why Do Demos?

• Memorable
  – For the right reasons!
• Addresses Different Learning Styles
• Potential for Interaction
  – Interactive Lecture Demonstrations, Sokoloff & Thornton
  – Peer Instruction, Eric Mazur
• Great for Recruiting and Outreach
What Makes a Good Demo?  
**For the classroom:**

- Keep it simple  
  - Keeps it real, less intimidating
- Close relation to course material  
  - Not entertainment
- No trickery  
  - Student trust is valuable
- Always practice it first
- Keep it safe
Demos As Instruction

• Discrepant Events
  – Improve conceptual understanding

• ILD/Peer Instruction
  – Interactive, engaging
  – Conceptual or quantitative

• Example:
  – High Road, Low Road
Demos As An Example

- Example: Potato Gun Ballistics

\[
mv = (M + m)V
\]

\[
fd = \frac{1}{2} (M + m)V^2
\]

\[
v = \frac{1}{m} \sqrt{2(M + v)fd}
\]
Demos to illustrate

• Post Instruction
• Unify Multiple Concepts
• Confidence Building
• Example:
  – Boiling Green Water Sucker
Demos to excite

- Good for outreach and recruiting
- For classes, use in moderation
  - Improves attendance and interest
- Example:
  - Flame Tornado
References