Science Innovation in 45 Minutes or Less

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WELCOME! Science Innovation in 45 Minutes or Less

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Practices of Science & STEM Innovation Overlap

1. **Ask Questions**: Problem Identification
2. **Conduct Investigations**: Determine Value through Customer Discovery Interviews
3. **Analyze & Interpret Data**: Validate Problem & Explore Solution Feedback
4. **Develop & Use Models**: Create Rapid Prototype & Build It
5. **Engage in Argument from Evidence & Construct Explanations**: Pitch Ideas for Feedback & Use Feedback for Refinement

Data Driven Decision Making

John Pappajohn Entrepreneurial Center
Environmental Problems Rapid Prototyping

<table>
<thead>
<tr>
<th>Problem 1: Human Consumption</th>
<th>Problem 2: Sustainable Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>How can students be encouraged to recycle paper?</td>
<td>How can your school reduce electrical consumption?</td>
</tr>
</tbody>
</table>

**ACTIVITY STEPS:**

1. Pick a problem & team up (1 min)
2. Conduct customer discovery interviews with someone from another team (5 min)
3. Share & interpret team data results (10 min)
4. Propose a solution on butcher paper/ Your choice: Product or Process (10 min)
5. Pitch for further feedback (2 min pitches for each team/adjust as needed)
## Customer Discovery Interview Log

**Purpose:** To capture customer feedback on a problem, the value in solving the problem, and ideas for a solution.

### Project Name:

### Interview by:

### Problem Investigating:

<table>
<thead>
<tr>
<th>Who is the customer?</th>
<th>Does the customer have the problem?</th>
<th>Who else does the customer think has the problem?</th>
<th>What value does the customer see in solving the problem?</th>
<th>What is their suggestion for a solution?</th>
<th>What does the customer think about your solution?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name?</td>
<td>The problem we are trying to solve is _____.</td>
<td>Who else do you think has the problem? Describe the person (age, role, etc.).</td>
<td>What value is there in solving the problem?</td>
<td>What solution do you have for solving the problem? Why?</td>
<td>The solution we created is _____. What do you like about this solution? Why? What would you change? Why?</td>
</tr>
<tr>
<td>Role? (community member, teacher, student, etc.)</td>
<td>Do you have this problem? When? Why or why not?</td>
<td>What problem do they have?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age range?</td>
<td>Tell me more about this problem.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date of the interview?</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

**Additional data from interview #1** You will dig deeper in your interviews to understand the wants, needs and motivations of the potential customer. Add additional responses here to share with your team.
Wrap Up: Practices of Science & STEM Innovation Overlap

1. Ask Questions: Problem Identification
2. Conduct Investigations: Determine Value through Customer Discovery Interviews
3. Analyze & Interpret Data: Validate Problem & Explore Solution Feedback
4. Develop & Use Models: Create Rapid Prototype & Build It

What are your questions?

What did you learn today?

Data Driven Decision Making

IOWA

John Pappajohn Entrepreneurial Center
## Environmental Problems To Consider

<table>
<thead>
<tr>
<th>Human Consumption:</th>
<th>Sustainable Cities:</th>
</tr>
</thead>
<tbody>
<tr>
<td>● What are things or places where resources are wasted?</td>
<td>● How can your city be a vibrant place where people want to live, work, and raise a family?</td>
</tr>
<tr>
<td><strong>Energy:</strong></td>
<td></td>
</tr>
<tr>
<td>● How can your city diversify its energy resources?</td>
<td></td>
</tr>
<tr>
<td><strong>Water:</strong></td>
<td></td>
</tr>
<tr>
<td>● How can your city reduce the human impact to its watershed?</td>
<td></td>
</tr>
</tbody>
</table>
Want More Information?

- Fill out a **STEM Innovator Opportunities card** for further information about other ways to connect with us!
- You may also email **stem-innovator@uiowa.edu** with any questions, comments or feedback!