Germ Buster Demonstration

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THIS IS **NOT** A DEFINITIVE FINAL REPORT

FORMATIVE evaluation studies like this one often:

- **are conducted quickly**, which may mean
  - small sample sizes
  - expedited analyses
  - brief reports

- **look at an earlier version** of the exhibit/program, which may mean
  - a focus on problems and solutions, rather than successes
  - a change in form or title of the final exhibit/program

Imaging Station – Formative Evaluation
Germ Buster Demonstration

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PURPOSE

This study looks at visitors' experiences at the first prototype of an Imaging Station demonstration. The goal of this study is:

- To identify points of confusion in the demo
- To solicit visitor questions about what they saw and heard
- To identify activities and content that visitors find interesting
- To identify connections visitors made between the demonstration and themselves

METHOD

Recruitment

Around 5 minutes before the start of each demonstration, an evaluator approaches visitors in the Traits of Life area and invites them to attend a new demonstration, Germ Buster. At this point, the visitors were NOT asked to provide feedback after the demonstration.

The evaluator would approach as many visitors as possible. There is no selection criterion.

Observations

During the demonstration, the evaluator makes notes of any questions that visitors ask the demo facilitator. S/he also notes the groups that are present for more than half the demo. These groups will be approached for interviews afterward.

Uncued Interviews

- Only groups who stayed for at least half the duration of the demo will be interviewed. Some of these groups might be present during the beginning half, while other groups might be there for a later portion.
- Up to 3 visitors from each group may stay for the interview.
- The evaluator approaches one group at a time as the groups leave the demonstration and continue to other parts of the museum. All the interviews were completed within 30 minutes from the end of demo.

DATA COLLECTED

Time and Date

Data was collected for demonstrations at 12:15pm, 12:45pm, and 3:15 pm on the following days:

Fri, May 7
Sat, May 8

Participants

Demographics reflect the main interviewee of each group.

Gender	Count
Female	6
Male	8
Total	14

Age Group	Count
Under 8	0
Child over 8	1
Teen	0
Adult	12
Senior	1
Total	14

FINDINGS

How interesting is the demo?

Rating	Count
Interesting	6
Somewhat interesting	7
Neutral	0
Somewhat uninteresting	1
Uninteresting	0
Total	14

What makes the demo interesting?

Reason	Count
Seeing proteins kill cells/ seeing it live/ seeing process	6
See how your body works/ seeing something that can happen in you body	4
How cells work / seeing cells	3
Immune system is interesting	2
Learned/see something new	2
Facilitated/ explained well.	2

What makes the demo not interesting?

Reason	Count
Doesn't make sense/ too difficult	1

What do visitors find confusing? (Recurring confusions are in bold)

- **Switching slides / which slide is which**
- **Who's attacking who? Which are sheep cells? Where are the guinea pig proteins?**
- **Vocabulary (e.g. antibodies, proteins, etc)**

What questions do visitors have? (Recurring questions are in bold)

- **How does protein/guinea pig kill/puncture blood cells?**
- **Why isn't the blood red?**
- **Why doesn't the sheep cells attack the guinea pig protein/cells?**
- Where does the guinea pig proteins come from? What kind of protein is it?
- What is the yellow stuff? (Lighting effects on the cells)

Suggestions to improve the demonstration? (Recurring suggestions in bold)

- **Show diagrams first / more visuals**
- **Don't switch slides as often/ put 2 slides side by side for easier comparison**
- **Relate more to human**
- Color code cells/proteins on slide/ label cells vs. proteins.

Personal connections to the demonstration? (Recurring connections in bold)

- **When we get sick/infected, this is what happens**
- **Important to understand how our bodies work**
- **Had bio background/ knew about this and demo helps to visualize**
- We have blood cells
- Good that daughter see woman doing science / role model

SUMMARY with recommendations

- Connection to Human beings
    - Most visitors connect the demonstration to the human beings and to themselves. Some also find the demonstration interesting and relevant as a result of this.

    Recommendation:
    A few visitors mention they would like more explicit explanation connecting the demonstration to how our bodies work. If it fits the goal of the demonstration, it would be worthwhile to emphasize this connection. (E.g. "Imagine the slide is your body and these cells are bacteria….")

- Notes on demonstration logistics:
    - Visitors found it helpful to first see graphics/outline of the process before the actual process.
    - Visitors found frequent switching of slides confusing.

- Confusion with terminology
    - Some visitors found terms such as "antibody" and "proteins" unclear. (E.g. "What is an antibody?" "I thought protein is a nutrient.")

- Confusion with Identification / Analogy

    While visitors generally understood the causal relationship presented (e.g. "A attacked and destroyed B in order to defend A's health."), many expressed confusion in identifying "who's who". Part of the confusion comes from simple visual identification, such as not realizing that the proteins aren't visible or that the red blood cells aren't red.

- Confusion with Identification / Analogy (Continues…)

    The other main cause of confusion is the layers of languages used to describe the immune reaction, namely:

    - Foreign bodies vs. Immune system (in human)
    - Blood cells vs. Proteins
    - Sheep vs. Guinea Pig

Some visitors commented that they lost track of "which is which".

Recommendation:
It might be clearer if the presenter uses only 1 of those 3 sets of languages to describe the reaction demonstrated. Since there are visitor interest and personal connection to drawing the analogy to the human immune system, emphasizing this aspect seems the most promising.

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APPENDIX

Interview questions

1. How interesting would you say the demonstration was to you? Would you say it was …

Uninteresting	Somewhat uninteresting	Neutral	Somewhat interesting	Interesting
1	2	3	4	5

2. Could you say what it was about the demonstration that made it _____ for you?

3. Was there anything about the demonstration that was confusing? If yes, could you tell me what? [Probe to exhaustion]

4. Do you have any questions about what you saw or heard at the demonstration? [Probe to exhaustion]

5. Do you have any suggestions for how we might improve the demonstration? [Probe to exhaustion]

6. Did you find out anything at the demonstration that you thought was particularly meaningful or important in your own life?