

PI DAY CHAIN REACTION DEBRIEF NOTES

March 14, 2008



ENVIRONMENT

THE AREA WAS SET UP AS A LARGE NUMBER "20" TO CELEBRATE THE 20TH ANNIVERSARY OF PI DAY AT THE EXPLORATORIUM

John: It looked chaotic but I saw a lot of creativity happening. I liked that there was no wrong way to do anything. There was a lot of thinking involved. I enjoyed seeing the physical implementation of ideas.

Ryan: Allowing people to make things on our floor like this, trusting people, and expecting things from them when they come to the museum. That's unusual.

Kristen: I liked that we built a few examples ahead of time. It was nice because we were invested in it and we were learning along with them.

It actually felt pretty calm inside the space when everything was in full swing.

Karen: The environment of Pi Day is circus-like and larger in scale than I think we would use in a normal tinkering studio scenario, but I liked participating in a larger event at the museum.

FACILITATION



LED BY PIE STAFF AND AM EXPLAINERS (WITH 2 VOLUNTEERS). PEOPLE EACH FILLED A VARIETY OF ROLES: GREETER, FACILITATOR, MATERIALS MONITOR, AND PHOTOGRAPHER.

Kristen: I noticed when a facilitation technique helped and when it didn't. Because people were working on building their ideas you could see that evidence. Showing them examples of things others had made seemed very helpful.

Ryan: I liked the way we individually introduced and facilitated the table groups.

It felt like a true collaboration between us and the visitors.

I noticed a nice balance of interacting, facilitating and leaving people alone.

Ryan: For us (explainers), now we've seen how this style of teaching works in a lot of areas, our personal growth has been great.

Walter: Ryan taught me a big lesson in the way he introduced himself, setting people at ease right away. He brings a great level of energy to the activity.

Luigi: It was nice as a facilitator to get truly excited about what people are doing.

Mike: I see our "inquiry" as the opportunity for us to learn about what others do with this activity.

Luigi: It was hard to "not tell" participants what to do, especially when the timing got tight towards the end.

Marcus: I found it hard to offer suggestions to some people. They seemed really independent and knew what they wanted to do.

I found myself doing a lot of watching and just checking in with people.

Karen: As a facilitator it's hard to know when to interject when someone is working by themselves.

Anne: I'd watch people from across the skylight area to see what they were doing before I'd step in to help.

Mike: Holding back is especially good when people were working in there for a long time. If you don't, they could get "over-facilitated".

Walter: I noticed that some people would try the same idea over and over again and it wouldn't work. That was the time that I'd step in and offer a new material, or ask a question.

Ryan: The only frustration I felt was the time limitation. The people who built things with us wanted to work for a long time. Plus it took time to figure out what you wanted to build.

Everyone: Timing is a tricky call because you wanted it all to work in the end for the finale. It seems like the last couple of groups were rushed.

It's hard with school groups because many of them had to leave before they finished. Many wanted to build even knowing they might not finish. How to limit this? Should we limit this?

Could the finale be handled differently if it wasn't part of a big event?

Kristen: I liked the way you could build something really simple if you had limited time or get really complex and spend more than an hour in there.

Karen (later thought): Explainers as facilitators makes the most sense for PIE in terms of long term investment for professional development, and to be assured that the facilitation matches our standards. This was the trickiest in terms of integrating the volunteers. They were heavier handed in their facilitation than I would have liked. Being comfortable with people being frustrated or struggling their way through something is a hard thing.

BEHAVIORS WE NOTICED



BEFORE WE BEGAN WE WONDERED WHAT WE'D SEE. WE HAD ONLY DONE THIS IN A SHELTERED WORKSHOP SETTING BEFORE, NOT OUT ON THE MUSEUM FLOOR AND ESPECIALLY NOT AS PART OF A BIG EVENT LIKE PI DAY.

Ryan: I was struck by how long people stayed and worked. This activity really allowed us to build a relationship with visitors since we worked together for such a long time.

John: Some people never looked up and just worked the whole time.

Kristen: Peoples relationship with their pieces was strong. The makers, other on-lookers, and all of us seemed to care about what was happening. The whole thing had a special dynamic. Everyone was connected.

Karen: I was surprised at how many teens were interested, even when they were building right next to young kids.

Antoine: I was surprised to see excitement, and playing, and frustration in the same activity.

Marcus: I noticed a lot of people feeling proud of their accomplishments.

Ryan: The sense of pride and ownership was high. Lots of people wanted to take photos of what they'd made, and stuck around a long time to see the finale.

Luigi: Kids working together as a team was great. Parents and kids supporting each other was good too.

I liked getting a chance to figure out how to help people without doing it for them. Figuring out what questions to ask, or suggestions to make.

Ryan: People really could figure out things for themselves in ways unimagined. It really shows different ways to do the same thing.

MATERIALS



WE DIVIDED THE MATERIALS INTO FOUR GENERAL SECTIONS:

- GENERAL BUILDING MATERIALS*
- FASTENING MATERIALS*
- SWITCHES AND ELECTRICAL COMPONENTS*
- PI-THEMED OBJECTS*

We used things like:

Collected:

Cereal boxes
Cardboard boxes
Paper towel tubes
Egg cartons
Plastic containers
Wood scraps
Foam core scraps

Consumables:

Tape
String
Balloons

Specialized parts:

Haba parts
Marble machine tracks
Wind-up toys
Kinetic toys
Slow moving motors

We ran out of motors in the end.

Liked the focus of the 'Pi objects' because it gave people a starting point to build around.

Ryan: Sometimes the usefulness of the Pi-objects varied. Some were harder to figure out what to do with, while others suggested a use.

Luigi: I saw so many people get really excited about the tin foil switches. The amazed looks on their faces when they'd touch the foil together was magical.

Walter: Motors really helped slow the action down.

Should we use more pre-built pieces (like in-between each section)?

Ryan: This activity really grounds the idea of a switch.

Kristen: The foil makes a switch very accessible.

John: It might be nice to use heavier duty materials. Wood, screws, drills etc...

Luigi: I'd say the opposite. More tape, less screws. I'd use more common or familiar materials because it lowers the barrier for entering the activity and is less intimidating.

Karen: The more we were rushed, the messier the materials area got. It was helpful to have a dedicated person at the materials.

Needed more of the heavy balls. The ping-pong and Wiffle balls were too light. Duct tape would help with bigger pieces.

We ran out of the big block/domino pieces towards the end.

Kristen: We needed both the mechanical-only contraptions and ones with switching and motors.

Mike: I'm surprised at how little waste we threw away. Most of the materials will get reused again and again.

MISC. OVERALL IMPRESSIONS



Marcus: The amount of space on each table was good because it limited the complexity.

People really liked using switches and motors.

Walter: It was funny that people would build theirs and be satisfied with the way it worked and then want to add more steps.

Wondering about more or less materials? In some cases people did really original things with limited supplies.

Luigi: People cared most about their own piece and were so focused on what they were doing. It was *their* piece.

Ryan: It's valuable to have activities where the final product isn't what it's about. Instead, the process matters more.

THINGS WE'D CHANGE NEXT TIME....

Kristen: No camera people. The camera people were in the way.

Karen: Experiment with the scale of the whole thing. As a "tinkering studio" it would be nice to experiment with this. More intimate?

Walter: Even larger scale materials (instead of a marble, how about a basketball)?

Walter: The overall shape should be considered, if it's roped off the center section is hard to see.

Karen: I'd like to give people a chance to look at the sections more closely afterwards, maybe even setting parts off again. It was hard to see it all because there was such a big crowd for the event.

Luigi: It would be nice to have people present to help their things along (we'd need to not have such a dangerous finale). But the finale was incredible.

Maybe preferred seating for the builders?

Mike: Everyone deserves to have their piece shared.

Kristen: Run through the pieces once, as it is set it off. Leave a little mystery in terms of what happens.

Try it on a normal day, not Pi Day.

Karen: Maybe experiment with the idea of a finale.

EXCERPTS FROM NOTES FROM AN EARLIER EXPLAINER TRAINING WORKSHOP ABOUT CHAIN REACTIONS (FEBRUARY 21 & 22ND)



May: I liked the team / collaborative aspect a lot.

At first I thought it was going to be easy but it was hard, a real challenge, but fun.

Partners were very important

Marcus: Starting out with such weird examples surprised me. When you came by and suggested things it was helpful.

It was better to come up with solutions on your own.

Felt like it was easy to find things I'd want to use.

Ryan : Doing this after marble machines I can see how this really activated the problem solving part of my brain more.

I started from an object I liked and then built around that.

I liked the physical objects and the circuits stuff best

The initial playing with the batteries was important.

Kristen: The collaborative aspect created an experience that the whole room is a part of something bigger.

I wondered if we didn't know each other, would this be as good or the same?

Marble machines felt more like a competition than this did.