Data Engagement Interview Protocol

What we followed when conducting our own data engagement interviews with our participants

[5 m] Introductions & system refresher
1. Use keynote slides to explain how the AQ system worked, how people used it.
2. Review the visualization interface, text messaging, annotations.
3. Explain purpose of exercise:

We want to use your air quality data to help answer one of your lingering questions.

[10 m] Review participant question
Restate the prompt:
> *Imagine you have monitored and logged your home's indoor air quality for the past year. What would you want to do with it? What would you want to know?*

Get context for their response:

- What is your question? Could you describe an example of this situation?
- How did this question come about?
- Why do you want to answer it?
- What would you do with the answer?

Take question from main sheet and relocate to a centrally visible area.

[10 m] identify a goal
Make sure the chosen question has an actionable or well-defined goal. It shouldn't just be exploration or curiosity.
- Is a specific goal, or something you want to get out viewing data?

[15 m] Problem decomposition
"How would you approach this problem? Assuming you had all the information at your fingertips, how would you try to tackle it?" Keep this conversational and high-level

Probing questions:
- How would you break this problem down to try and solve it?
- What are the steps you would take to try and answer this question?
- How would you determine the presence of <condition> in the data?
- For eAT: "How you imagine having those data sources together?

Explore Data

[5 m] Test dataset (opt)
Use weather dataset to show: (1) how to utilize the analyst, (2) What's analysis tasks are possible

Use the following tasks:
- [Zoom] Show summer months
- [Filter] Show only local data
- [Zoom] Show Temp over Birthday week
- [Compare] plot against temps with half birthday week
- [Modify] Change plot line type to dashed line

Emphasize that this is a demo and that the participant's job is to direct us to show the data they need to answer their question

[20 m] Load participant dataset
Show a participant's entire dataset. Work with them to articulate or refine their goals using the following questions:

- Based on what you described earlier, How do you want to use this data to solve your question?
    - What would you like to see?
    - If you could change anything about how the plot looks, what would it be?
        - Probe: Are the specific monitors you would want to isolate or remove?
        - Probe: Are there specific regions of time you would want to zoom in on?
        - Probe: Are there specific conditions you would want to look for?
- What makes <activity> stand out from the rest of the data?
- What features of this plot are the most important to answering your question?

If they focus on indoor / outdoor spikes:
- what is it that is interesting to you about these spikes? what makes you want to look at them closer?
    - what do you expect \ hope to see? What about this interests you?

Design iterations

[iterate] Getting direction
After presenting any visualization, have the participant guide the next steps:

- What else do you want to see?
- What would you want to see next?

Answering these questions takes time. Be comfortable waiting for data, or use the opportunity to gauge participants' expectations:

- What do you think it will look like? What do you expect to see?

[iterate] Sketching ideas
Incorporate sketching to help the participant express themselves or clarify a point. Invite them to draw a solution if they have something in mind or something that cannot be achieved promptly by our data analysis.

This process will necessarily continue until the participant feels they have enough data to answer their original question.

Crafting the solution

[10 m] (Re)introduce tabular data
Once the participant feels satisfied the information they've seen adequately answers their original question, we should reintroduce the underlying tabular data.

[15 m] Operationalization
- Using the steps you wrote earlier, how would you use answer your question starting from the raw data?
  - Probe: What information would need to determine its features and measurements?
  - Probe: How would you combine this information to help get to an answer?