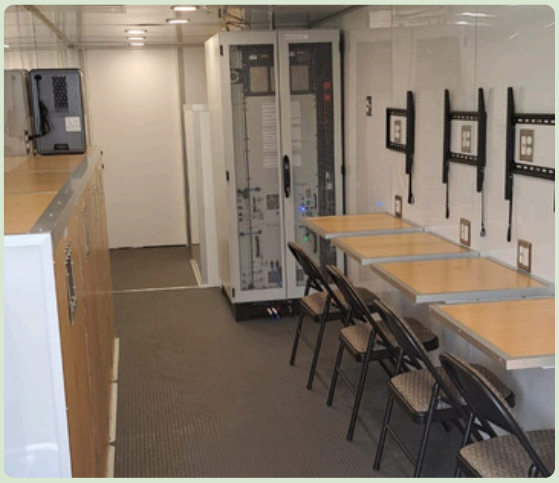


SESAME SOLAR UNIT ENGAGEMENT GUIDE

A framework for OSI staff to effectively implement the SEE framework into Sesame programing

reDirect

A2ZERO
EQUITABLE • SUSTAINABLE • TRANSFORMATIVE

August 2025

Contacts & Acknowledgements

Prepared by Meredith King
reDirect Fellow, Summer 2025
merking@umich.edu

In collaboration with:

Bryce Frohlich
Community Resilience Specialist
City of Ann Arbor Office of Sustainability and Innovations
BFrohlich@a2gov.org

A special thanks to:

Professor Raymond De Young
University of Michigan
School for the Environment and Sustainability

Paige Porter and the reDirect Foundation
for continued support and funding to enable the completion of this project

The City of Ann Arbor
Office of Sustainability and Innovations

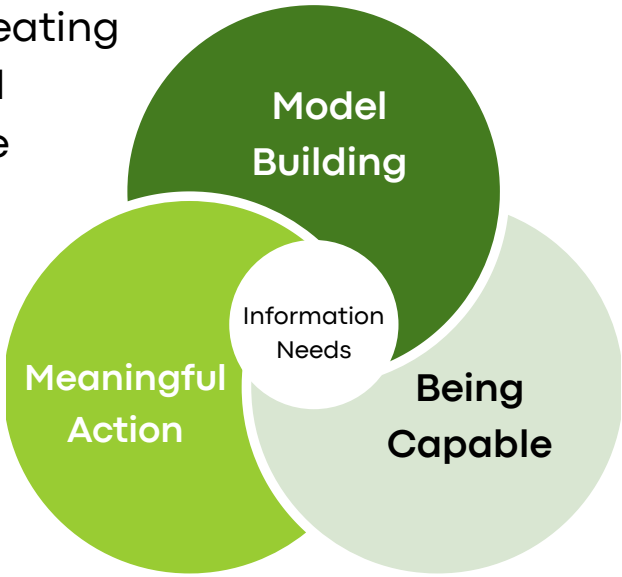
TABLE OF CONTENTS:

THE SEE FRAMEWORK

Supportive Environments for Effectiveness

The SEE Framework supports learning by creating environments that fulfill basic informational needs to increase the impact of the Sesame Solar Unit for long-term behavior change.

A main goal of the unit is to provide **procedural knowledge** (knowing how to take action) so that folks leave the Sesame with concrete ideas of how to get involved with A^{2}ZERO. With numerous possibilities, it's best to use a "small experiments" approach to discover what works well for different audiences, situations, or topics.



reDirect.org

Model Building — the need to explore and understand information in our environments, building on knowledge that is already familiar so it can be quickly retrieved later on

Being Capable — the need to feel competent and clear-headed when finding, learning, and sharing new information

Meaningful Action — the need to make a difference through genuine participation, knowing that our efforts are impactful

Keep an eye out for these markers to see how the SEE framework applies throughout this guide.

MB BC MA

PURPOSE OF THIS GUIDE

Use this guide before planning an engagement activity and while you collaborate with partners. It should be used as part of the training and reservation process. This guide...

- Provides a framework for OSI teams to utilize the unit and create programming that prepares guests to take actionable steps related to A^2ZERO goals
- Prepares OSI staff to activate different spaces in the SSU for engagement purposes
- Documents the ideas and vision of OSI teams that have emerged from past discussions
- Takes a SEE-informed approach to improve effectiveness and impact

This guide references the Sesame Storyboard on Canva, which contains internal & external measurements and a design option. The storyboard breaks the unit into color-coded sections that this guide references with different ways to interact with each section. An activity appendix has also been created with unique engagement ideas and images at the end of the guide.

PURPOSE OF THE SESAME

Community Engagement:

During its first year of deployment, OSI will primarily use the Sesame for community education and engagement. It is a living learning lab, meaning it's a dynamic space for knowledge exchange. It can be used to tell OSI's story and activate community involvement in A^{2}ZERO. It should be treated as a catalyst for meaningful conversations with new audiences and sustainability beginners. The unit will have residencies at several locations (PEACE) to maximize its use & visibility.

Decarbonization Tool:

Another immediate use of the Sesame is to provide clean energy at events such as Green Fair, Local Food Festival, or the Art Festival. It can replace loud, diesel generators and improve air quality. It has the capacity to charge electric bikes/vehicles, phones, and plug into buildings.

Disruption Response:

As the city solidifies safety logistics, the Sesame can be used later to respond to disruptions such as a power outage or severe weather. It could provide power to the community and act as a command center for the Ann Arbor Fire Department or the Office of Emergency Management (OEM).

GENERAL PLANNING PROCESS

The Hands On Museum will offer their expertise to create permanent features, but it is still a dynamic space. A possible approach is to design the living learning lab in 3 sections:

1. Overarching OSI Goals & Values
2. Specific OSI Work to Reach Goals
3. Audience's Role in A^2ZERO's Work

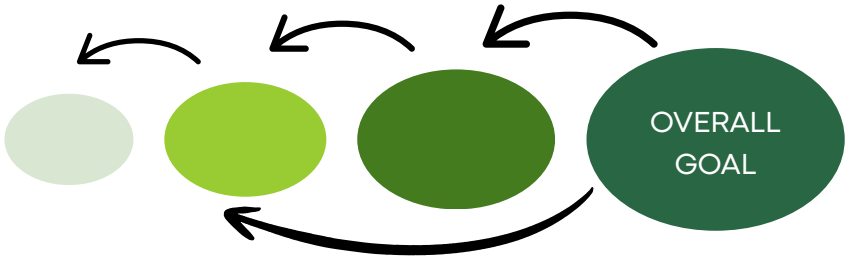
When designing the unit & specific activities consider the following tips:

Identify Your Overall Goal

- What is the main information you want to communicate?
- What do you want people to know or feel like afterwards?

Identify Procedural Knowledge & Call to Action

- **Procedural knowledge=** knowing how to perform a task rather than just knowing why it's important to do
- Example- knowing the steps to prepare for an emergency rather than just knowing the types of climate emergencies in Ann Arbor
- How do you want people to get involved after engaging with OSI?



Once you have identified the desired goals, work backward to plan specific steps that guide your engagement strategy.

ENGAGEMENT RECOMMENDATIONS

Back Ramp Entrance

MB

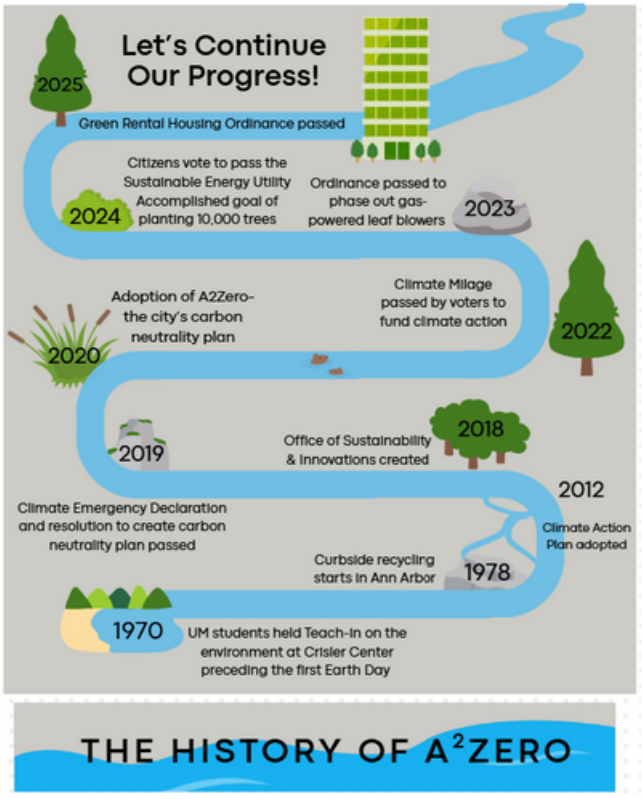
The fold-down ramp is the best spot for people to enter the unit and start their journey since it is the most accessible and eye-catching. Content can be displayed on the ramp, door, or wall. Since this will be the first thing people see, think about **foundational messages** that would prepare them and foreshadow what's to come. This helps citizens start to build a **mental model**. Consider having staff or tables at the ramp to welcome people and explain what the unit is.

Example: timeline of Ann Arbor's sustainability accomplishments on ramp to the inside

- This gives context before stepping into the rest of the story and gives credit to the work done before OSI.

Include a "start here" sign to help people navigate the environment.

Be mindful of how many people you let in the unit at a time.



Sesame Storyboard

Narrow Entrance Inside

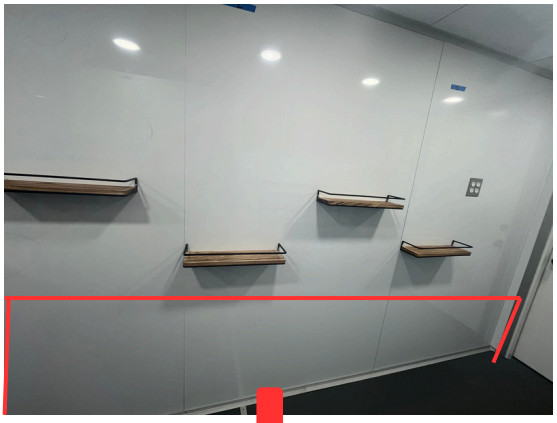
MB BC

- The first few feet of the unit are narrow, so we don't want them to get stuck here. Keep the text **light and easy to absorb**.
- Focus on **broad A^{2}ZERO messaging** before going into specific programs. Each person starts with a different mental model, so **meet them where they are** at.
  - This content would likely be permanent
- Don't put too much content below eye-level, especially if it's not kid-friendly. The shelves can display A^{2}ZERO's action plan, envisioning drawing, and awards.
  - Consider having the materials build off each other in a sequence to contribute to the story you are telling.

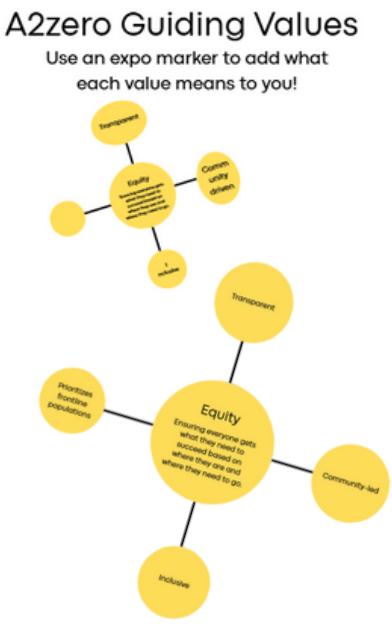
Example:

- A^{2}ZERO's carbon neutrality goal and strategies
- Why this work matters
- OSI values
- Monthly OSI event calendar

Focus on storytelling in this space since stories are easy to understand.



This space is too low for most to easily see except kids.



Sesame Storyboard

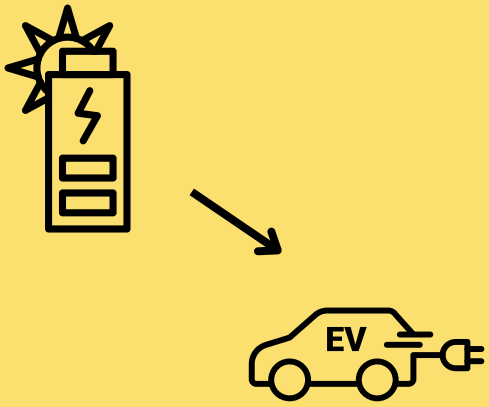
Battery Wall Side

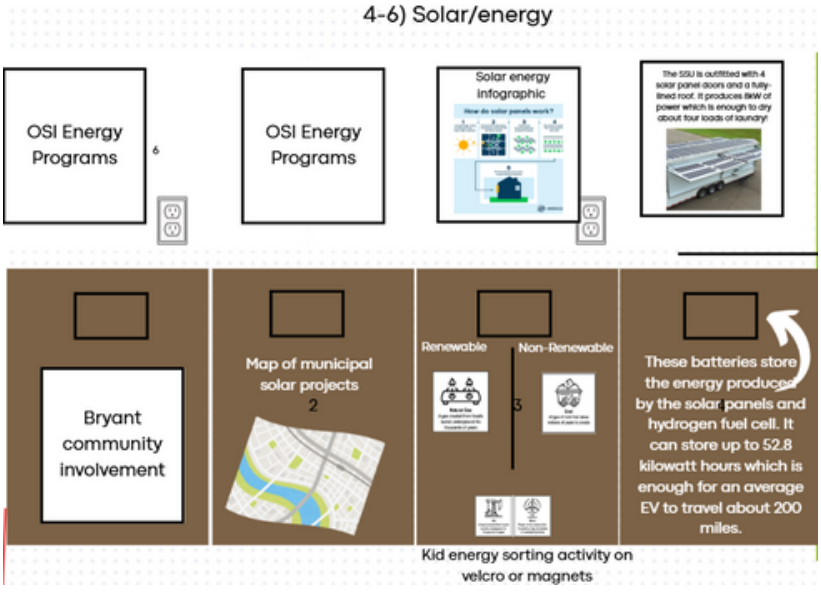
MB BC

- The battery cabinet is further into the unit, where there is more space to spend time and engage with content.
- There is a lot of surface area to present information. Break it into chunks and don't overload people.
  - We can only absorb **3-7 new ideas** at a time.
- Make the **explicit connection** that these batteries store the solar and hydrogen energy produced.

Example: use the battery stacks as an opportunity to talk about renewable energy and OSI programs

- Put energy metrics into context and make it personal by using the EPA energy equivalency calculator. This connects new information to **existing mental models** and promotes efficacy.
  - EX: 52 kWh is enough power to drive 141,689 miles with an EV





Sesame Storyboard

Battery Wall Side (cont.)

- Keep in mind that anything displayed on the shelf may block content on the wall above
  - Display fun, tactile things that people can manipulate
  - **Examples:**
    - Jackery & solar panel
    - HEA equipment
    - Home diagram or dollhouse showing what appliances produce fossil fuels
    - Types of insulation

- Have children's activities at the bottom of the battery cabinets for easy accessibility.
  - **EX**: velcro/magnet energy cards that are sorted into renewable or non-renewable categories
  - **EX**: carbon neutrality scale where folks add carbon-free or carbon-producing energy examples
  - **EX**: resilience team's preparedness or cloud ID games

Hands On Museum

Highlight features of the unit in a way that points toward OSI programs.

Computer Wall Side

MA

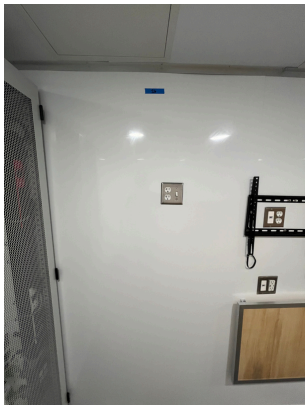
The computer wall is a great space for people to participate and engage with information. This helps them contribute to **meaningful action** and avoid feelings of helplessness or despair.

- The tables can be folded up or down, depending on the activity and space needed
  - Can be set up as a sequence to walk people through a story or assembly line (i.e., creating a mending or emergency kit)
- Chairs allow folks to engage with something for a longer time, but don't let the interior become congested
- Use touchscreen monitors so computer mice are not always necessary
- Include a sign describing the computer display or instructions on how to use it

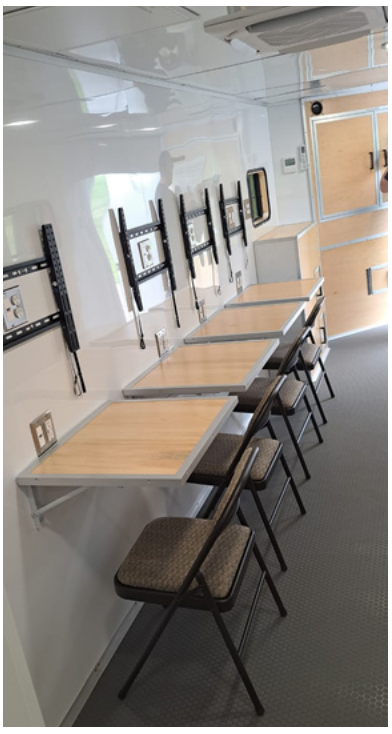
Maximize space by displaying a poster or vinyl wrap on the tabletops.

Example Displays/Activities:

- A^{2}ZERO dashboard or pledge
- Kid computer games about sustainability
- Live air quality monitoring
- GIS storymaps (ambassador projects, trees)
- Picture slideshows
- Survey/feedback form
- Button making



Sesame Storyboard



Computer Wall Window & Shelf

MB

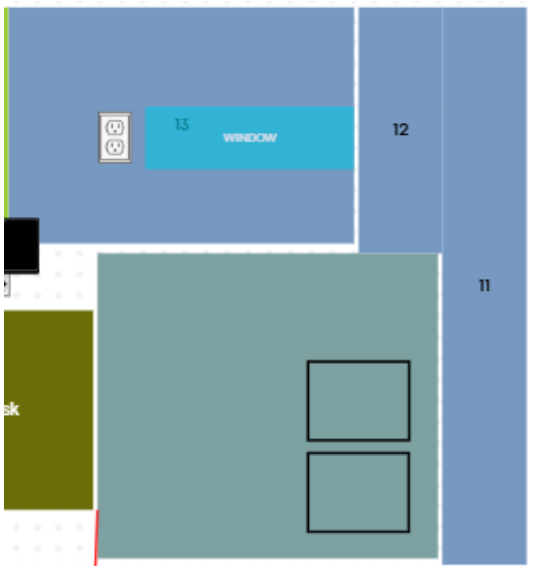
The cabinet area on the computer wall is a nice, contained corner where you could focus on one topic, such as circularity or resilience.

- Grouping similar topics helps with **clarity** and **model building** rather than having them spread throughout the unit
- This space can also build off of the tabletops and computers, especially if sequencing a story

Example (CIRCULARITY):

- Posters that explain what a circular economy is and related OSI programs
- Hang different types of fabric for folks to touch and learn about microplastics
- 9 R's of circularity
- Items to display on shelf: reuseable containers, seed library, cookbook, mending kits

Use QR codes to provide more information without overloading the space.



Sesame Storyboard

Electrical Cabinet

MB

The electrical cabinet contains:

- **Battery combiner**- connects wires from all batteries
- **Solar combiner**- combines input from all solar arrays
- **Inverter**- converts DC to AC and displays energy stats
- **Auto transformer-** steps 120V to 240V
- **Wifi router**
- **Breaker box**

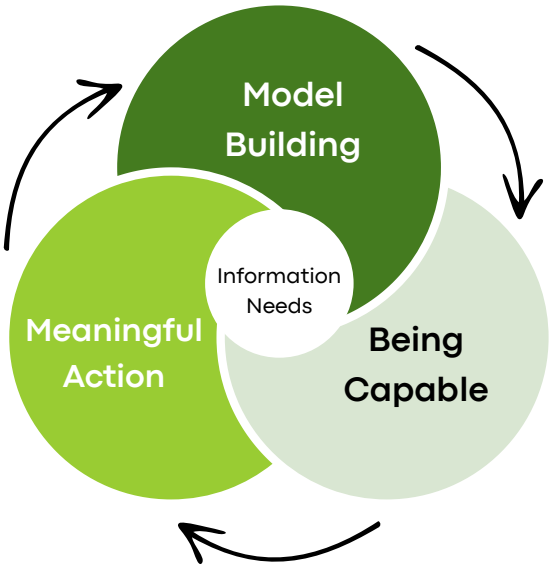
- Since there is permanent signage about Sesame Solar, use this space to explain what a nanogrid is and its uses
  - **Example:** connect it to the Sustainable Energy Utility (SEU) that acts like a microgrid (making this connection aids **model building**)
  - Include a **call to action,** like signing up for SEU waiting list
  - Utilize **QR codes** to share more while saving space
- Magnify the info displayed by the inverter since it shows how much energy is being produced/used in real time
  - Connect it to a computer or provide an explanation of each metric

Sesame Storyboard

Battery-Side Front Door

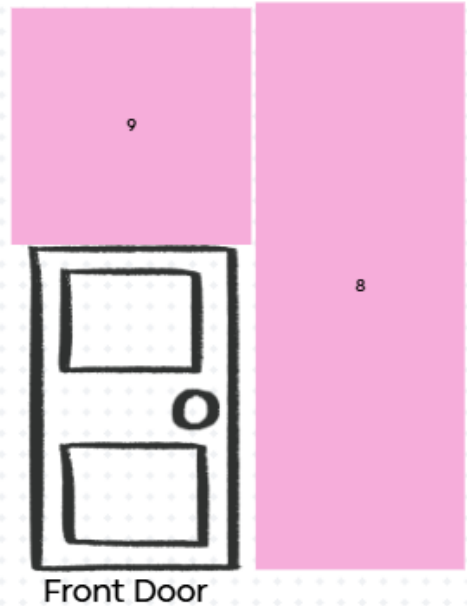
BC MA

Although the SEE framework does not always follow a particular order, at this point in the unit, people likely have gained knowledge to build **mental models** and **feel more capable of taking action**. They may feel ready to make **meaningful contributions.** Thus, communication at the exit should **emphasize actions they can take to be more involved in A^{2}ZERO**.



- Set up auxiliary elements outside of the exit to continue their journey and the conversation (see p. 18)
  - **Example:** Ask folks what they want their city to be like and challenge them to think about how they can contribute
  - Have staff close to the exit for questions and feedback

Sesame Storyboard



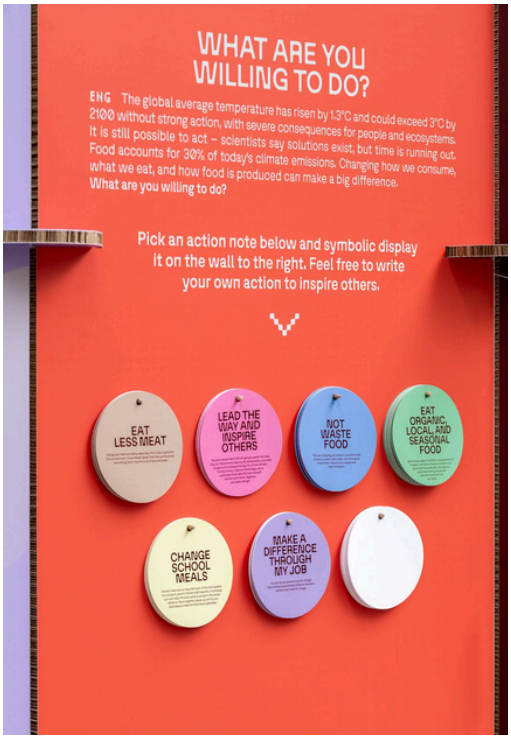
Battery-Side Front Door (cont.)

- There are many ways to get involved, so provide lots of specific examples and group them in related categories (by topic, level of difficulty, or age)
  - Allow space for people to think of their own examples too
  - This makes them **feel capable** and contribute to **meaningful action**
- Consider displaying quotes from other community members who have taken action

Focus on actionable items and provide QR codes to start the process.

<u>Examples</u>:

- Sign up for newsletter
- Become an ambassador
- Schedule an HEA assessment
- Build an emergency kit
- Eat more plant-based food
- Complete A^{2}ZERO pledge



Encourage people to make a commitment by writing it down or grabbing a note with an action on it.

Exterior Space

MA MB

The outside of the unit has the most potential for **customization** and **long-form engagement** since there is more open space. The exterior allows for **bigger groups** to gather and interact with large auxiliary items. Missy would like to avoid permanent designs so it is recognizable in emergencies.

Exterior Features:

- Fold down table with chairs (each side)
  - Host engagement activities or program sign-ups
- TV screen with Bluetooth soundbar (each side)
  - Play music/videos to grab attention
- Hydrogen tanks
  - Opportunity to explain fuel cell
- Blank wall space
  - Display posters/banners/lights, whiteboard activities

Exterior Space (cont.)

MA MB

The Sesame is a blank canvas that acts as a **catalyst for community dialogue**.

- Start conversations with questions to understand the person's **current mental model** and what would make sense to them.
  - Interacting with others and giving feedback is a big part of **meaningful action**.
- Be prepared to answer what the unit is and what it do

Example Auxiliary Items/Activities:

- Clothing swap racks
- Pop-up movie screen
- Charging e-bike
- Screen printing
- Mini fridge plugged in
- Big Jenga with questions on each block
- Cooking demonstration
- Face painting
- Raffle sign-up
- Trivia spin wheel
- Huge community coloring sheet
- Huge crossword puzzle
- Seed planting
- EGLE ecoscapes
- Hang pictures/flyers on twine
- Compost toss game
- Use whiteboard walls for mind map or post-it note collaborative activities

Save time-intensive activities for the exterior to avoid crowding inside.

GENERAL ADVICE

- Be creative to use all the space, such as the sides of cabinets and in between features
  - All walls are whiteboards!
- Make the content relevant to people's everyday lives
- Emotions are part of a mental model, so don't be afraid to appeal to them and all 5 senses
- Remember that your mental model about sustainability is probably more developed than others
- Designs should be durable to avoid frequent updates
- Since the unit's lifespan is 20+ years, focus on kids who can "grow up" with the unit
  - it is often harder to change older folks' minds
- How to provide engagement activity instructions:
  - **"TRY THIS"**- section explains how to interact with the materials (procedural knowledge)
  - **"WHAT'S HAPPENING"**- section explains the broader context that is simulated in the activity

Hands On Museum

LONG-TERM TEAM IDEAS

This section documents how each team sees itself using the SSU:

ENERGY

- Explain what energy is & why we should electrify
- Show how common energy uses contribute to environmental and health issues
- Display HEA equipment (infrared cameras, blower door test)
- Map of solar panels or HEA participants
- Use unit to power string lights or minifridge with ice cream!

CIRCULARITY

- Host swap from unit and have mending stations inside
  - Bring to UM football tailgate
- Create mobile lending libraries to distribute tools, seeds, or food
- Attach mobile air quality monitor to Sesame
- Use as base for free-tree giveaways
  - Have info on identifying invasive species

MUNICIPAL OPERATIONS

- Use for internal engagement to strengthen city relationships
  - Bring to water treatment plant & other facilities
- General public EV charging outreach
- Bring unit to Veteran's Park to highlight solar work
- Replace wooden cabinets with plexiglass for transparency

LONG-TERM TEAM IDEAS

RESILIENCE

- Hand out emergency kits or have people build their own
- Design your own resilience hub with Legos
- Partner with the fire department to bring SSU to schools
- Work with OEM to design emergency response protocols
- Host the unit at PEACE or GBC for an extended period
- Weather conditions equation game (dark sky+humidity= storm)

COMMUNICATION

- Film Greenlight episode from the unit
- Film a tour video for social media
- Host a name contest to give the unit a persona
- Create a mascot for the unit
- Use unit as a way to capture stories & feedback
    - via an electronic form or interactive map with pins

ENGAGEMENT

- Commission local artists to design vinyl wraps
- Play music from unit and hand out popcorn or ice cream
- Host a movie with pop-up screen
- Create magnetic ecoscape on wall for folks to move elements and understand ecological processes
- Host book exchanges, climate cafes, or water sampling events
- Host OSI “open house”

MEASURING IMPACT

Document your progress & results. Consider these metrics when trying to measure successful engagement with the Sesame.

Attendance

- How many people interacted with the unit?

Type of Audience

- Was there a new audience engaged that is not normally involved with A^2ZERO (teenagers)?

Meaningful Conversations

- How many people talked with OSI staff about sustainability?

Increased Program Involvement

- Is there an uptick in participation, sign-ups, or followers?

Emissions Avoided

- How much clean energy was produced?

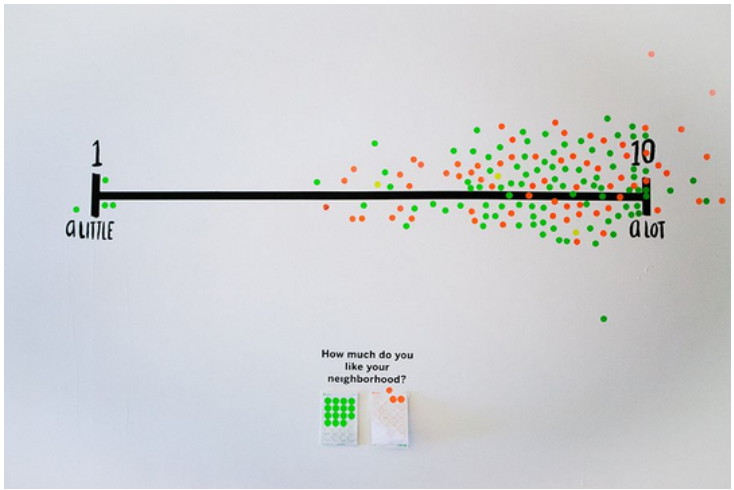
FUTURE CONSIDERATIONS

This list of next steps seeks to aid the transition of this project to future staff since the ReDirect fellow had limited time.

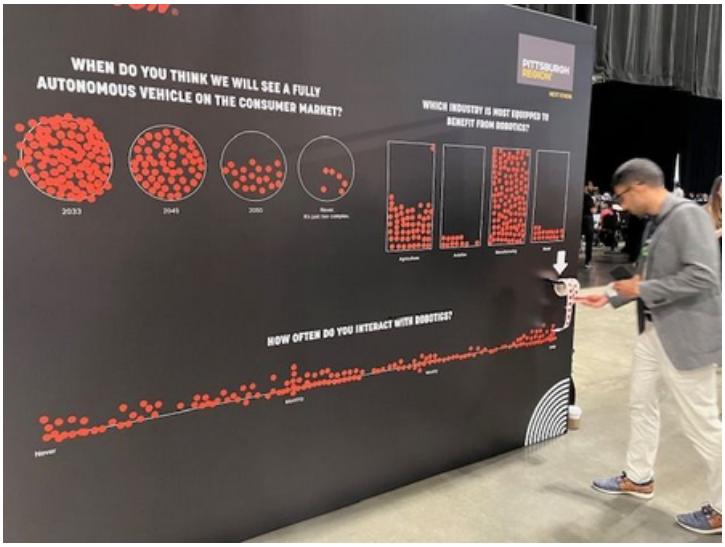
- Film a video walk-through of the unit once it is in a permanent, spacious location to help familiarize staff who have not seen the Sesame in person
- Create a list of boundaries and possibilities in regards to safety and legal considerations so staff have clear guidelines
- Train the Sesame sub-committee so each OSI event can have a point person
- Host a naming contest!

ACTIVITY APPENDIX

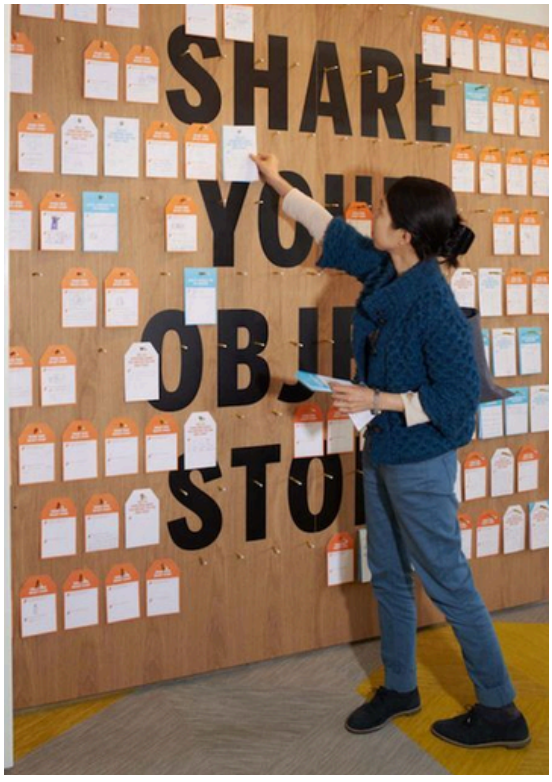
Inspiration for creative engagement activities that can be adapted to multiple topics.



ACTIVITY APPENDIX



ACTIVITY APPENDIX



ACTIVITY APPENDIX