ACTIVITY GUIDE

TREE MACHINE

Climate change is expected to bring hotter summers and more severe rainfall events to Pittsburgh. Participants experiment with technological and natural solutions to make life better for city residents.

IN THIS KIT

- 2 neighborhood trays
- 1 solar power plant
- 1 coal-fired power plant
- 1 shade apparatus (with magnetic base)
- 1 fan (with magnetic base)
- 1 water pump (Brita filter, on magnetic base)
- 3 air fresheners

IN THIS KIT (continued)

- 4 magnetic sponges
- 1 box of magnetic trees
- 3 informational challenge cards

BIG QUESTIONS

- How to trees help reduce the effects of climate change?

HOW TO SET UP

1) Place neighborhood tray on table.

2) Assemble tools and bases (fan, power plants, etc.).

3) Set aside second neighborhood and box of trees.

FINISHED KIT

ABOUT CUSP

CUSP helps urban communities explore climate impacts and solutions through active engagement with local examples.

CUSP Climate & Urban Systems Partnership

NSF

FACILITATION GUIDE

(This works best if children are directed to the activities, while caretakers are engaged in conversation and display information. This script is written for one visitor at a time but can be adapted for groups.)

- This neighborhood is concerned about some of the impacts of climate change. They have set aside some money and this land *(point to empty space on tray)* as an industrial site for addressing some climate-related challenges. Do you want to help pick the best tools for meeting each challenge?

- Challenge 1: Climate change is expected to bring more frequent heat waves to Pittsburgh. How can you reduce temperatures to help our citizens be more comfortable during the summer? *(Discuss cooling options—invite participant to plug in **giant fan** or **shade machine** over neighborhood. When they install their cooling option, notice the plug. They will need to select a power source: **Coal-fired power plant** or a **Solar power plant**, which doesn't pollute the air, but it takes up more space.)*

- Challenge 2: Climate change will also bring more rain storms to Pittsburgh. *(Discuss impacts of increased rainfall—runoff overwhelms sewers, causing combined storm & sewer overflow into waterways.)* How can you reduce runoff and keep our streams and rivers clean? *(Discuss solutions.)* This neighborhood has the option of using a **water pump** (needs electricity) or **giant sponges** to absorb water during heavy rainfalls*. (Participant installs pump or sponges.)*

- Challenge 3: Hot summer days can worsen air pollution, leading to more days that fail to meet air quality standards. How can you improve air quality to help our citizens breathe? *(Discuss Pittsburgh's air quality history and the effects of pollution on city residents, including asthma. Install **air freshener** to clean the air.)*

- *Eventually, the area will become extremely crowded and participants will need to make decisions on what types of tools they want to use to address the heat, precipitation, and pollution challenges.*

- What do you think—are you excited to live in a neighborhood like this? *(Weigh pros and cons of these machines, living near sponges, cords, and power plants.)* What if I told you that there is something you can plant in the ground that will address all of these challenges: cool the air, reduce stormwater runoff, and improve air quality? This solution also costs less and can be powered with water, air, and sunlight... *(What could it be?)*

- *Bring out second neighborhood tray and bin of trees*—Can you help the second neighborhood plant trees to help address the effects of climate change? We could even take this vacant area and use the trees to turn it into a park. Which neighborhood would you rather live in?