

Our *City on the Move* exhibit incorporates all the elements of STEAM (*Science, Technology, Engineering, Art, and Math*). Young children can explore using the mechanics of simple machines to make something move. They can take a theatrical approach by transforming into a train conductor, or use basic engineering to design a building using a variety of block and shapes.

Opportunities for children to engage in activities that promote problem solving, designing, and building will support a child's development in executive function skills, vocabulary, persistence, and organizing information. Exploring a modified design process for young children can lay foundational skills for children to see themselves as problem solvers.

### Try these basic steps:

- **Think about it.** What is the problem? What materials do you need? Make a plan, draw your ideas.
- **Build or create it.** Gather materials you will need.
- **Try it.** Test your creations.
- **Revise or make it better.** What works and what did not? How could you change to make it better?
- **Share.** Show someone what you made, talk about how you made and if you had to make any changes.

*Excerpt from Making & Tinkering with STEM: Solving Design Challenges with Young Children\_ Heroman, Cate.*

### Educational Background:



**Cognitive Development** – Children engaged in STEAM-related activities utilize critical thinking and executive function skills, fostering independence by taking an active role in their learning.



**Language Development** – Guests have opportunities to learn new vocabulary, ask questions, seek information, and engage in conversations about what they observe and discover.



**Motor Skills** – Children practice grasping and holding materials in their hand and fingers to explore objects such as measurement tools, blocks, and other manipulatives.

## Tinkering at Home:

- **Design Challenge 1: *Marble or Ball Run***  
Design a marble or ball run constructed from cardboard or other repurposed materials, using tubes or tracks so a marble or ball rolls from one point to another.
- **Design Challenge 2: *Building Bridges***  
Design and build a bridge that can stand on its own, spans at least 10 inches, and can support up to five pounds.
- **Design Challenge 3: *Float Your Boat***  
Using a 10" piece of aluminum foil, design and build a boat that floats. Test it by adding pennies or other lightweight objects to see how much weight it can hold.