Exhibition Activity Guide

Problem Solve Through Play

Welcome to *PLAY WORK BUILD*!
This exhibition uses play to create connections between design, building, and problem-solving. The questions, design challenge ideas, and book options are all scaled from simple to complex, so use the ones that best fit your students' abilities and needs. The activities in this guide take an average of 45 minutes.

Please be mindful of other visitors' ability to move through the exhibition when choosing where to gather your groups.

Free Play and Design Challenge

***TEACHER TIP: Divide your students into two groups. One group can start at the table of small blue blocks while the other group starts their visit at the big blue blocks. Switch groups so everyone has a chance to explore all areas of the exhibition.**

While your students free-explore the materials in their area of the exhibition, ask **questions** to guide their process:

- What color are the blocks?
- What shapes are you using?
- How heavy is the block?
- Which is heavier?
- What are you building?
- How will you build it?
- Why did you make that choice?
- What did you build it that way?
- Which piece is causing an issue? How can you fix it?

If your students need more direction, give them a **design challenge**:

- Small blue blocks
    - Build a home for a worm
    - Recreate a famous building
    - Build a model of a museum (like the National Building Museum!)
    - Build a structure with a part that moves
- Big blue blocks
    - Build a garden
    - Build something with one hand
    - Connect one blue wall to another without touching the ground
    - Build a structure that can fit your whole group underneath

Debrief

***TEACHER TIP: This can be done as a whole group, in student pairs, in chaperone groups, etc.**

Gather your whole class in the last room of the exhibition. Discuss their process:

- What is something you did that you're proud of?
- What is something you did that you're not proud of?
- Did anything not work?
- What did you do when faced with a problem?
- What steps did you take?
- What did you do first?
- If you could do it again, what would you change?

Review the process as a group. Talk about the process they went through when building. Students may naturally explain that they had a plan or idea of what they wanted to build, built it, and used it or played with it. Along the way they likely had to evaluate, figuring out what worked any fixing whatever didn't work.

Architects and engineers use a similar process, called the design process, to help them create solutions to problems.

Story Reading

***TEACHER TIP: Ask a Visitor Services Representative (in the red Museum shirt) for the book. When finished, please return it to a Representative in the exhibition.**

All of the book options tell a story about trying different ideas, solving problems, and creative solutions:

- *Not a Box* by Antoinette Portis
- *Stuck* by Oliver Jeffers
- *Shh! We Have a Plan* by Chris Haughton
- *Rosie Revere, Engineer* by Andrea Beaty
- *The Most Magnificent Thing* by Ashley Spires
- *What Do You Do With an Idea?* by Kobi Yamata

Extension Ideas

At the Museum:

- Act out the structures students built
- Look at different elements of the building at talk about what problem they are solving
    - For example, the large Corinthian columns are holding up the roof; the doors allow people to enter and exit the building

At school:

- Each student draws or writes a story about one of the structures they built
- Look for a problem at school and discuss how it could be fixed

Curriculum Connections

District of Columbia Common Core Early Learning Standards (OSSE):

- Approaches to Learning (AL)
  - **AL.1.1** Children demonstrate curiosity and a willingness to learn.
  - **AL.1.2** Children engage in and complete tasks.
  - **AL.1.3** Children demonstrate problem-solving skills.
  - **AL.1.4** Children engage in purposeful play.
  - **AL.1.5** Children demonstrate self-direction and independence.
- Social and Emotional Development (SED)
  - **SED.2.1** Children demonstrate a strong, positive self-concept.
  - **SED.2.2** Children develop increasing capacity for self-control.
  - **SED.2.3** Children engage in positive interactions with others.
- Scientific Inquiry (SI)
  - **SI.5.1** Children develop inquiry and process skills.
  - **SI.5.2** Children develop an understanding of the physical properties and uses of materials and objects.
- Physical Development, Health, and Safety (PHS)
  - **PHS.8.2** Children apply hand, finger and wrist movements in ways that demonstrate increasing eye-hand coordination, strength, and control.
  - **PHS.8.3** Children use sensory information to guide motion.