

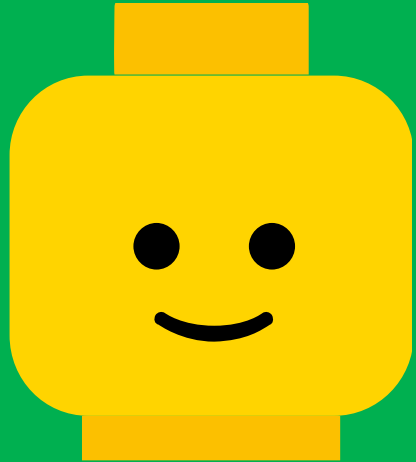


**Building a Community of Playful Learners (one brick at a time!)**



# Characteristics of playful learning experiences





Let's play

CHALLENGE:

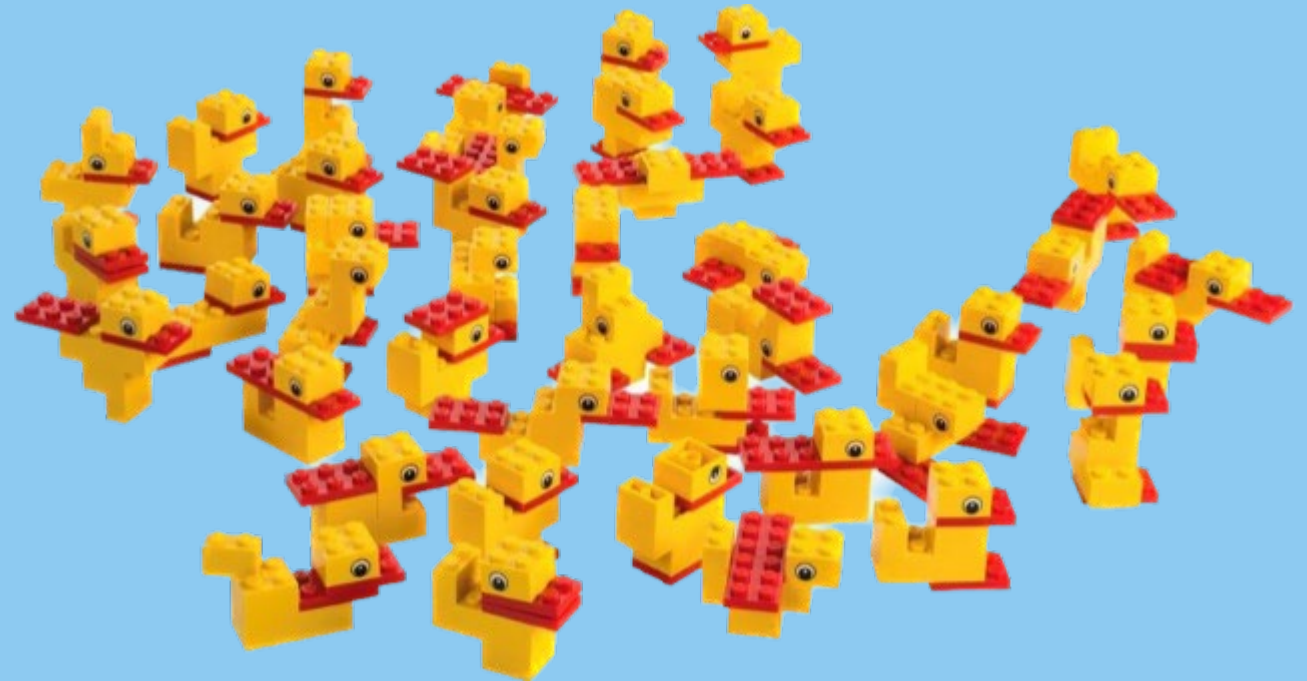
# Build a duck

45





What **strikes you**,  
when you look at  
all **these creations**?



# What happened?

attention

mental imagery

long-term memory

self-regulation

emotional regulation

self-efficacy

visual search

symbolic representations

kinesthetic awareness

spatial visualization

sensory-motor skills

mental rotation

working memory

spatial abilities

fine motor skills

short-term memory

cognitive flexibility

imagination

self-assessment

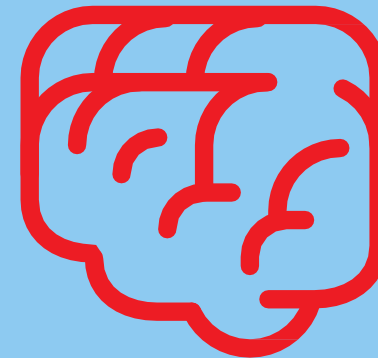
perspective-taking

adaptive social functioning

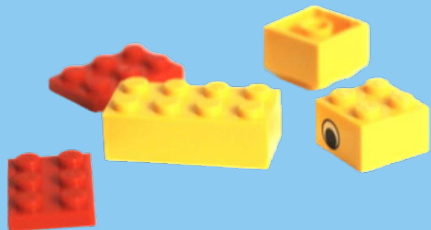
imitation

visual perception

pretense



6 LEGO® bricks



24 skills





# The LEGO Group at a glance

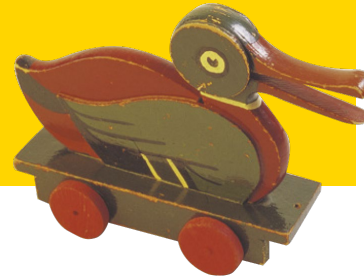
## Family-owned

Danish company  
founded in



## The LEGO name

comes from 'LEg GOdt',  
meaning  
'play well'



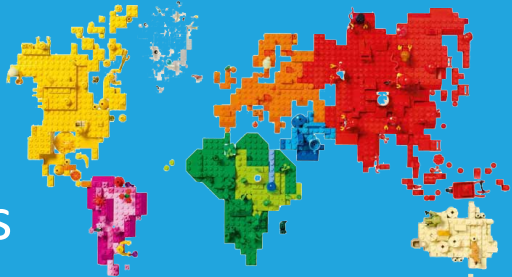
#1

Reputable  
Brand

Source: RepTrak® 2023



111  
countries



27,300+  
colleagues



25% of profits  
to the LEGO Foundation





# Social Responsibility - Established 2016



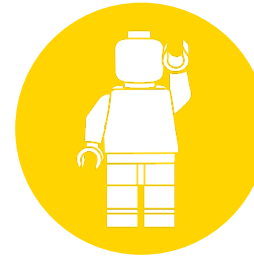


# THIS all began in 2021...



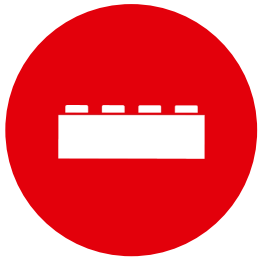
## Sharing a mission

The LEGO Group has worked ad hoc with children's and science museums but always wanted to do more



## The time was right

Museums innovated and adapted to reach even more non-traditional museum goers during the COVID time, and we were incredibly impressed.



## Building partnerships

In 2021, the LEGO Playful Learning Museum Network was established 13 museums in urban centers.

2022 saw an expansion to 16 museums.



## Community of Practice (CoP)

Museum staff discuss how might we collaborate, co-create and integrate even more Learning through Play through out the museum and beyond



# Year Two: Further Deepen Learning Through Play and Strengthen Community Partnerships



**Exposing** and inspiring a total of 1.8M children and 1M caregivers



**Engaging** underserved children in experiences through mutually beneficial, deep partnerships



**Empowering** museum staff with networking, learning and sharing opportunities via a Learning Through Play Community of Practice





# 2022-23 Partners





# Characteristics of playful learning experiences







# Children's Creativity Museum, San Francisco







# Mystery Box Challenge:

A toolkit that museums and organizations can deploy for playful learning





## Co-Creation Partners

- Children's Museum of Sonoma County
- Habitot
- Monterey Youth Museum
- Sacramento Children's Museum
- Santa Cruz Children's Museum



## Significant activity modifications

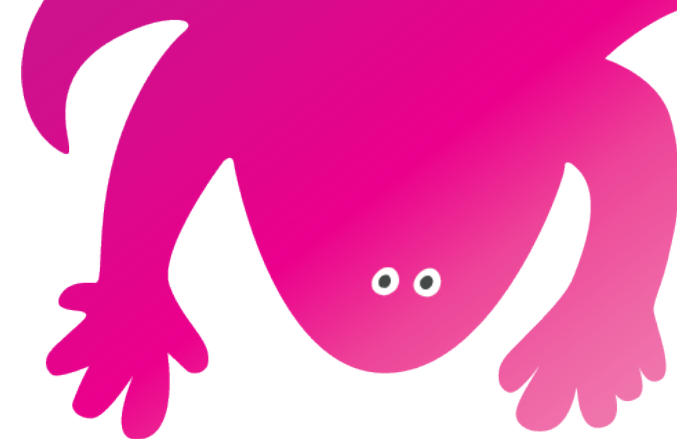
- Strength-based
- Partner-specific limitations
- Co-created completely new practices
- Challenged our assumptions about what can vary and what cannot







Pivoted from professional development model to coaching & technical assistance model





## Pilot Partners

- Galing Bata
- YMCA-San Francisco



## ACM Session Friday 1:15-2:30

Scaling Respectfully: Co-developing Play-Based Activities Across a Museum Network





# LEGO Playful Learning Museum Network



MUSEUM OF DISCOVERY AND SCIENCE





**Mission:  
Connecting  
people to  
inspiring science**

## **4 Strategic Action Pillars of MODS**

- Environmental Sustainability ←
- Physical Science Education
- Early Childhood Education ←
- Health and Wellness Education

# Partnership Overview



To strengthen children and families through innovative education, supportive programming, and community engagement.

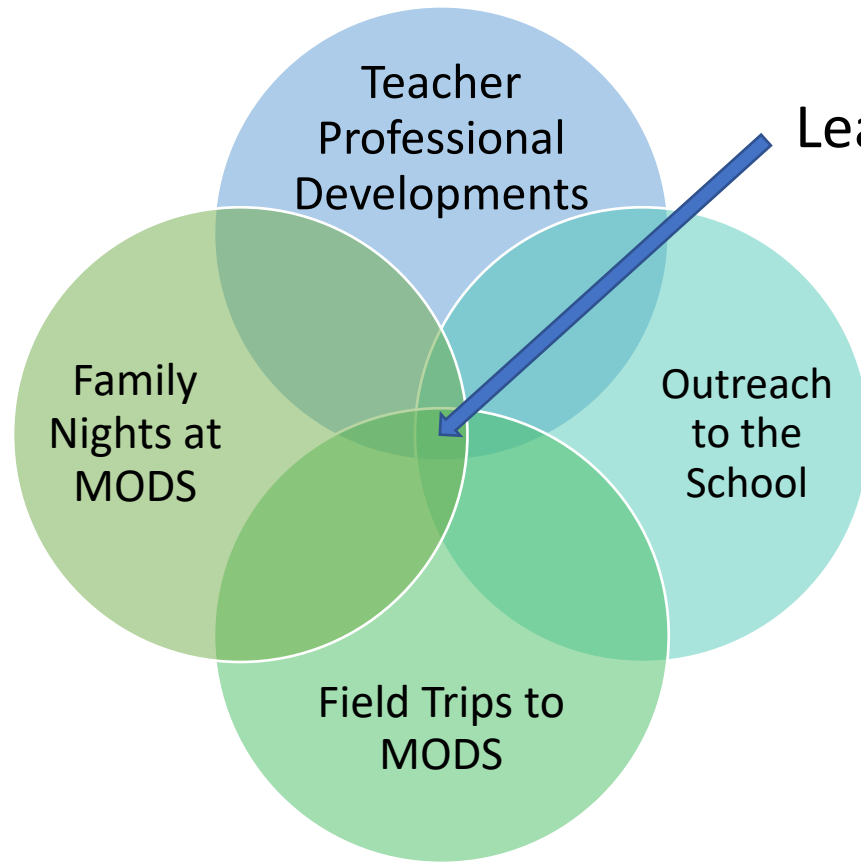


- Children 6 weeks to 5 years-old
- A long-standing partner with MODS
- Using existing trust to co-create something new focused environmental stewardship





# Community of Practice Components



## Learning Through Play

- 80 Students
  - 2 Classroom of 3–4-year-olds
  - 2 Classrooms of 5-year-olds
- Play Support
  - 1 Duplo Box per class
  - 1 class set of Duplo Six Brick per class
  - 4 sets of Duplo Six Brick per family
  - Digital Resource sharing with teachers



# Jack and Jill – MODS Partnership

**Learning Outcome:** encourage children to raise questions about the natural world and make observations to answer those questions.

October

Weather the Storm

- Make a wind resilient city



November – January

Everglades

- Learn about and build habitats for Florida native animals



February – April

STEAM

- Learn about and make Eco-Art



May – July

To Fly

- Learn that wind has energy and make a wind farm





# How to Learn Through Play at Home?

## Special Time!

15 minutes

4 Days a week, or more

### PRIDE

Praise – “I like the way you are stacking those blocks”

Reflect – repeat what they are saying

Imitate – do what they do and listen for their instructions

Describe – narrate what they are doing

Enthusiasm – Smile, Clap, Cheer them on, Express gratitude



# Interim Findings



- **What's working...**
  - Teachers use Learning Through Play useful in classroom
  - Students are starting to link to ideas of sustainability and resilience
  - Scaffolding of activities is working
  - Students are reaching learning outcome
    - Through observational evaluation
  - School staff is using a playful mindset in everyday activities
- **Needs more...**
  - More direct support of teachers
  - More opportunities for families to participate
  - More direct interaction/feedback from families



# Discovery through Design

A LEGO Museum Initiative

Discovery Place's Learning through Play project





**(Project Based)**  
**Age-Appropriate Design Challenges using Sustainable Materials:**

*Discovery Place Kids Huntersville (K-2)*  
*Discovery Place Science (3rd – 8th grades)*

**DISCOVERY THROUGH DESIGN** DISCOVERY PLACE SCIENCE

Choose a Design Challenge below from these Inspiration Stations you visited during your field trip.

	<p><b>Cool Stuff</b> Physics is helpful! Engineer a device that can complete a task for you using simple machines.</p>		<p><b>World Alive</b> Animals want to discover too! Research and design a prototype of animal enrichment that could be used for an animal of your choice at Discovery Place.</p>
	<p><b>Being Me</b> The human body is fragile. Develop protective gear for a body part in an activity that you choose.</p>		<p><b>Fantastic Frogs</b> Frogs are super, but they are in trouble. Design something to educate the public about why and how we can protect them.</p>

**DISCOVERY THROUGH DESIGN** DISCOVERY PLACE KIDS

Choose a Design Challenge below from these Inspiration Stations you visited during your field trip.

<p><b>The Farm</b> Through farms and gardens, people grow their own food by creating an ecosystem of living things. Design a harvesting system that could be used to pick the produce from the Museum's garden.</p>	<p><b>I Can Move</b> Transportation is important to move people and things. Design a boat that can float in water and carry a load.</p>

# Branch 1 - Partner Professional Development

Partnership with Out of School (OST) organizations to facilitate the project design challenges over nine weeks.

**Greater Enrichment Program  
Above and Beyond  
Catawba Nation  
Our Bridge for Kids**

Contact Hours: 12

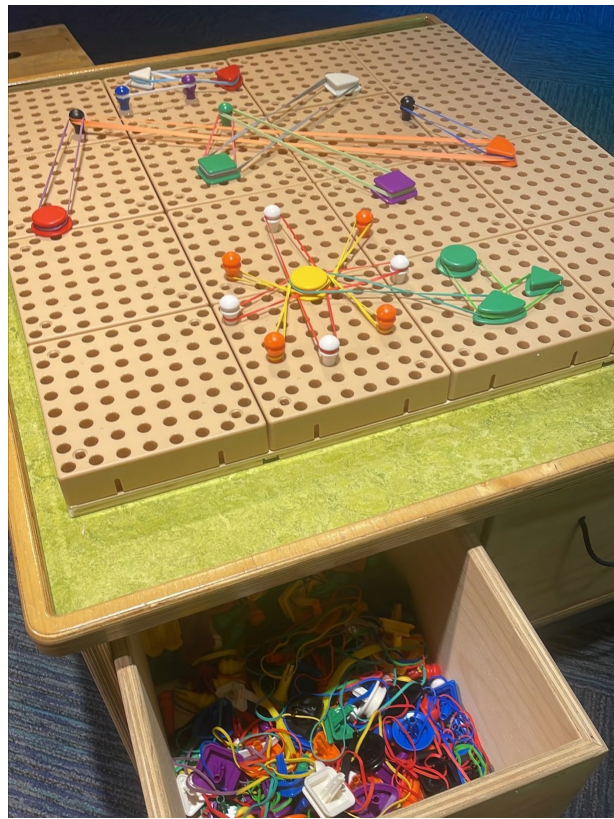
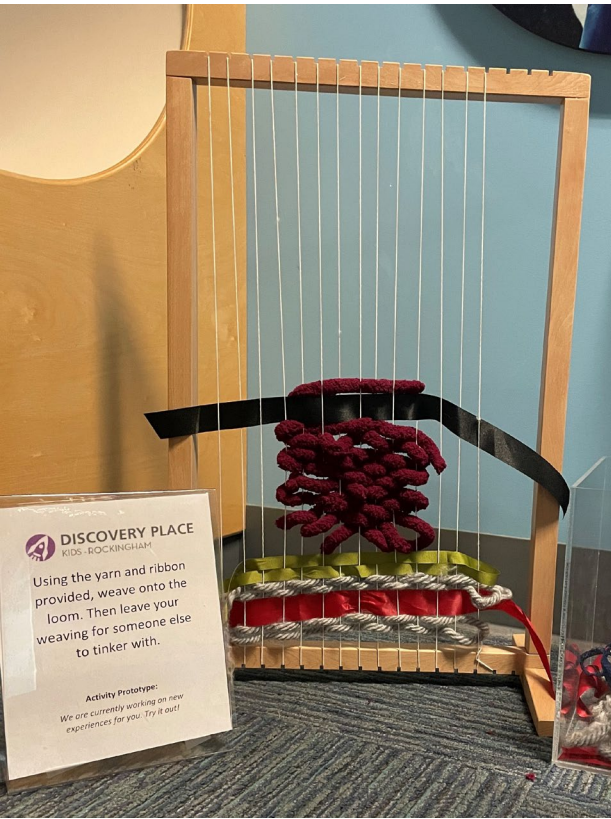


\*Images made by afterschool care professionals while completing a mini design challenge during their professional development session.



# Branch 2: UFTEs

Designed with sustainable materials, UFTEs engage guests in tinkering and active learning while sparking conversation around conservation, biodiversity, pollution, alternative energy, and more.





# Branch 2: UFTEs

## Numbers and Reach



	# children >18 years	# adults (caregivers, teachers, etc.)
Expose (broad reach)	12,368 (target)	25,299 (target)

UFTEs go through two iterations & are evaluated by our Director of Evaluation and LEGO Team Lead for a third iteration and to produce quality experiences for our guest across museums before exhibiting for an extended run.

# Project Evaluation



## Branch 1

- Participation Metrics
- Draw a Scientist Task
- Digital Artifacts
- Surveys

## Branch 2

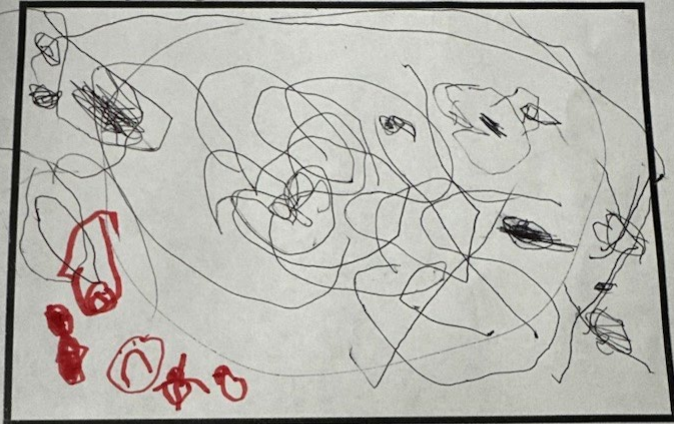
- Attendance Metrics
- Observational Coding
- Interaction Counts

# Draw a Scientist Task



## Draw-A-Scientist

Close your eyes and imagine a scientist at work. In the space below, draw what you imagined.



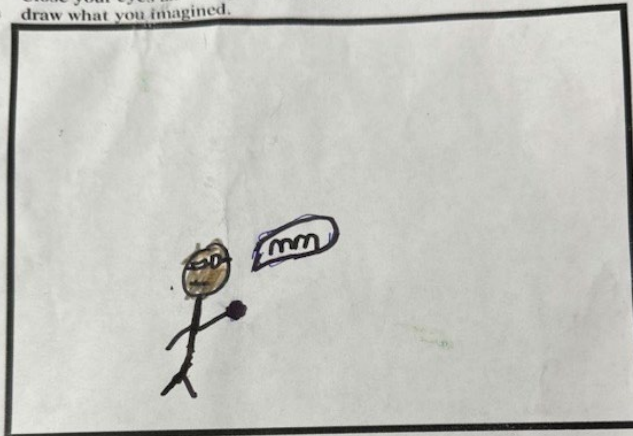
1. Describe what the scientist is doing in the picture. Write at least 2 sentences.

2. List three words that come to mind when you think of this scientist:

3. What kinds of things do you think this scientist does on a typical day? List at least three things:

## Draw-A-Scientist

Close your eyes and imagine a scientist at work. In the space below, draw what you imagined.



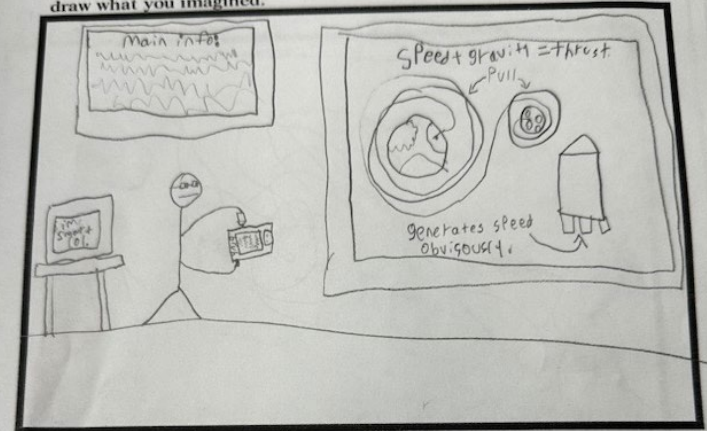
1. Describe what the scientist is doing in the picture. Write at least 2 sentences. thinking about the problem.

2. List three words that come to mind when you think of this scientist: a smart 1 and he like candy.

3. What kinds of things do you think this scientist does on a typical day? List at least three things: Study and he like to read books.

## Draw-A-Scientist

Close your eyes and imagine a scientist at work. In the space below, draw what you imagined.



1. Describe what the scientist is doing in the picture. Write at least 2 sentences. He is an engineer at NASA doing science for the Apollo 11 launch.

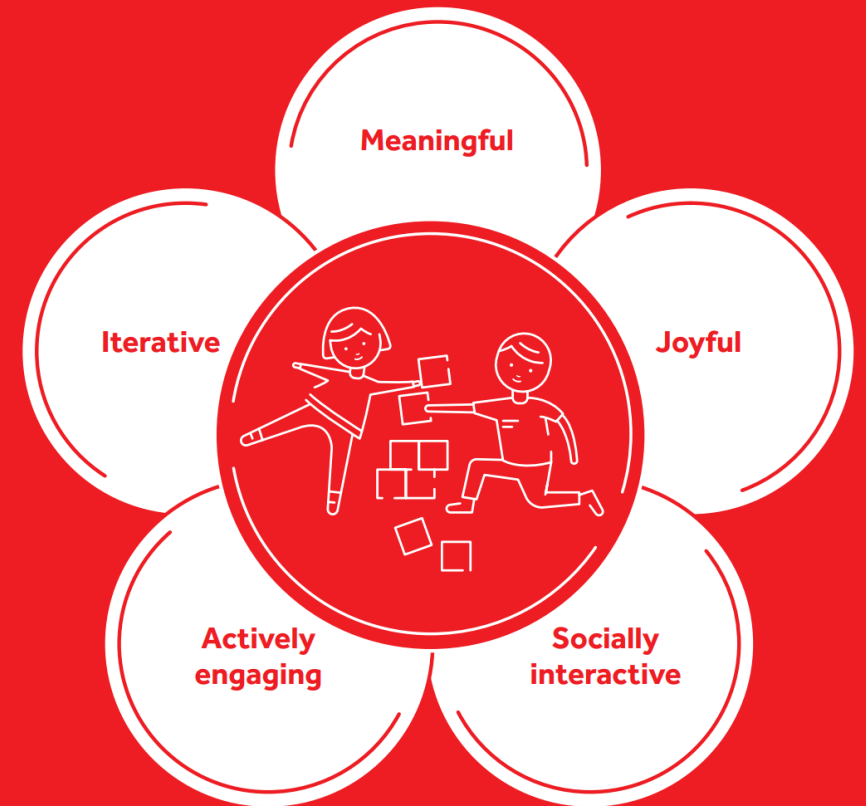
2. List three words that come to mind when you think of this scientist: He is curious, smart, and really focused as you can tell.

3. What kinds of things do you think this scientist does on a typical day? List at least three things: I think he observes the problems he faces and how he can solve it.

# UFTE Evaluations

## Observational Coding of Deep Learning

- (1) **Meaningful**
- (2) **Joyful**
- (3) **Social** (collaboration, co-learning)
- (4) **Active engagement**
- (5) **Iterative** (experimentation, adaptation)





# Partners in Play

Chicago Children's Museum  
in partnership with Friends of the Children



CHICAGO CHILDREN'S MUSEUM

# Why Did We Create *Partners in Play*?

Builds on CCM's *mission to improve children's lives by creating a community where play and learning connect*, and our commitment to **empowering the important adults in children's lives** to support their growth and development through play.

Partners in Play utilizes a **multi-touch model** to create sustained impact.



CHICAGO CHILDREN'S MUSEUM

# Project Overview

Engages **Friends of the Children** as our partner:

1:1 mentorship organization with paid, professional mentors.

Each mentor stays with their child for 12 years, no matter what.

Children served reside in Chicago communities impacted by generational poverty.



Photo: Friends of the Children



CHICAGO **CHILDREN'S** MUSEUM



# Why is this a mutually beneficial partnership?

Friends of the Children: experts in building **sustained, nurturing relationships** with individual children and their families.

CCM: experts in connecting children and adults with meaningful, **critical opportunities to learn through play.**

Together: we can make a difference by creating sustainable “learning through play” opportunities and by providing support through **resources, training, and access.**



Photo: Friends of the Children



# Co-creation: Supporting Partner's Goals

- Partner desired training and resources that were aligned with their goal areas for children:
  - **Prosocial Development**
  - **Self-Awareness and Identity Building**
  - **Independence**
  - **Literacy**
- Desired training on **trauma-informed practices**
- Desired museum access and at-home Play Kits that focused on **STEAM-learning and constructive play**

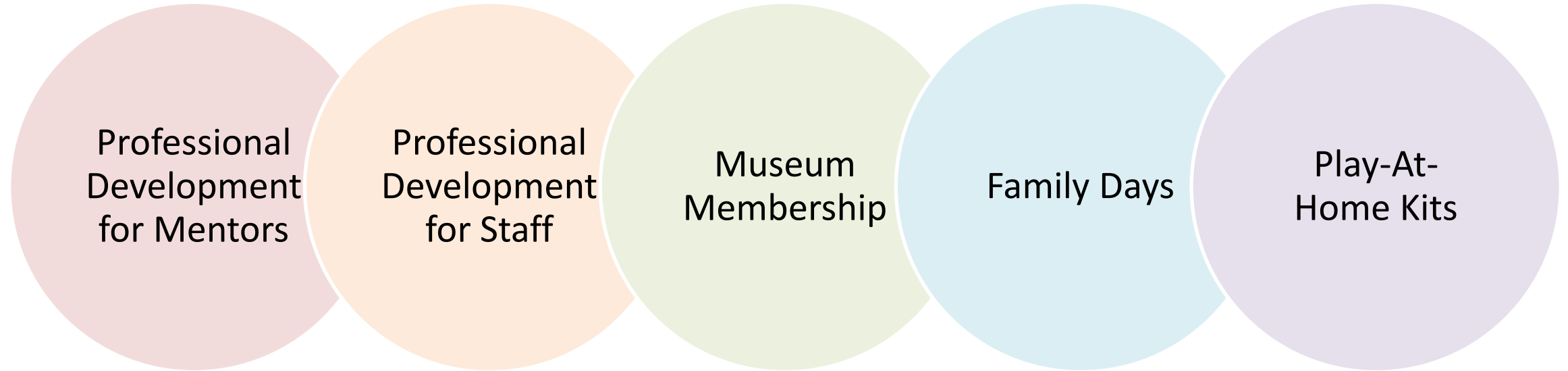


Photo: Friends of the Children



CHICAGO CHILDREN'S MUSEUM

# Components and goals of the initiative



**Increase adults' knowledge of Learning Through Play; create advocates for play**

**Create access to iterative play experiences**

**Expand Learning Through Play to children's extended families and homes**



**CHICAGO CHILDREN'S MUSEUM**

# Outcomes for Mentors

90% of mentors will:

- report professional development sessions and resources increased their knowledge of “learning through play” strategies.
- be able to give examples of how *Partners in Play* resources have positively supported mentees’:
  - Prosocial Development
  - Self-Awareness
  - Independence
  - Literacy Development



Photo: Friends of the Children



CHICAGO CHILDREN'S MUSEUM



# Outcomes for Family Engagement

- 70% of mentees are joined by one or more caregivers at one Family Day.
- 265 Learning Through Play kits are distributed to mentees and siblings
- 100% of mentors engage mentees and families with the kit materials.



CHICAGO CHILDREN'S MUSEUM

# Outcomes for Staff

- 90% of staff report professional development sessions increased their knowledge of how to support LTP at CCM.
- Staff are able to articulate and share their own LTP strategies
- CCM staff members actively participate in LEGO's Community of Practice.



CHICAGO CHILDREN'S MUSEUM



## Interim Findings re: Staff Training

- **Staff trainings best approached as brief 20-30 minute sessions** so info is digestible and embedded in daily routine of morning meetings.
- Create a **forum for dialogue** about the Learning Through Play opportunities that they see as well as **strategies** they employ to enhance LTP.
- **Document and display staff's reflections.**
- **Provide a way for staff to continue the conversation**, such as through "talkback boards"



CHICAGO CHILDREN'S MUSEUM



# Interim Findings: Staff Training

- Staff reflections have articulated knowledge of Learning Through Play connections and shared strategies for supporting learning Through Play.

"Find an area where *you* feel comfortable or interested and start doing something! For example, sit by the blocks and start building. If children show interest in what you're doing, invite them to join you."

"Engage in dialogue that deepens the scenarios that are being played out by children. For instance, join the riders on the [play] bus and ask them: "What is your stop? Where are you going today?"



# Interim Findings: Mentor Training and Outcomes for Children

- **Matching our initiative's goals with the partner's goals for children's development has been critical.**
- 100% of mentors were able to articulate ways that particular museum experiences support their mentees' learning goals through play.

“The Tinkering Lab will get [my youth] used to working and playing with others.”

“My mentees are full of energy, so being able to crawl and climb will promote health and learning.”

“The Climbing Schooner will allow youth to become aware of their capabilities.”

“One of my youths love to solve problems. [Tinkering Lab] will allow her to explore different solutions from an engineering perspective and expand her creativity and imagination.”

“The Castle exhibit encourages youth to engage in storytelling and role-playing—they will interact with their peers.”



CHICAGO CHILDREN'S MUSEUM

# Interim findings: Mentor Training

- **Asking Mentors to share reflections on how they have been supporting their children's Learning Through Play has revealed concrete strategies and behaviors.**

"Engaging in "problem solving" together, especially in the Dinosaur Expedition exhibit."

"Making a plan with [my mentee's] input."

"Incorporating sharing and taking turns" to build social growth.

"Encouraging [my mentees] to use their 5 senses and imagination."

Encouraging "perseverance," especially through the Cloudbuster climbing experience.



CHICAGO CHILDREN'S MUSEUM



# Interim Findings: Mentor Training and Staff Knowledge

- **Mentors/caregivers notice and appreciate when staff are skilled in articulating Learning Through Play.**

"I love how the staff were exploring the exhibits. It really shows that they understand that the museum is more than a place to play. It's a place where learning and playing happen."

"I found most useful: learning more about each exhibit [from staff] and practical ways to engage our youth in learning through play."

"I have enjoyed watching my youth focus on playing while learning. The Children's Museum makes it easier to live out the Friends of the Children program model of teaching while playing."

"I found most useful: the way [CCM Staff] connected Friends of the Children core assets to each exhibit."



CHICAGO CHILDREN'S MUSEUM

# Interim Findings: New Internal Practices

CCM has begun to better **codify the Learning Through Play connections that are possible** in each of our exhibit spaces.

- **One-page 'Learning Through Play' overviews** of our exhibits
- **Bi-monthly “tours” of our museum**, open to all staff and board members to gain deeper understanding of the Learning Through Play connections and equip them to **articulate and advocate** for the importance of learning through play.

## Skyline



### About This Experience

The *Skyline* exhibit invites visitors to design and build a child-sized skyscraper using struts, nuts and bolts and real tools. The *Skyscraper Challenge* component photographs visitors at work and invites them to tell the story and make a documentary about their building process.

## Tinkering Lab



### About This Experience

This facilitated workshop space invites visitors to use their building and problem-solving skills to address engineering challenges. In partnership with Loyola University Chicago and Northwestern University, museum educators and researchers are utilizing *Tinkering Lab* to study how children and families learn about engineering. Evolving programs in the space offer new experiences over time.

### Opportunities for Growth and Development

Through this experience, children have the opportunity to grow skills in the following areas.

- **Cognitive Development:** Use critical thinking and problem-solving skills to solve engineering challenges. Test solutions and fix problems. Build executive function skills as they think through a process and determine what to do first, next and last.
- **Social-Emotional Development:**
  - **Self-Awareness and Identity Building:** Understand their capabilities and grow in confidence as they use tools and materials that may be new to them. See themselves as problem-solvers and scientific thinkers.
  - **Pro-Social Development:** Collaborate with others to build and solve problems. Share materials and tools. Share their creations with others.
  - **Independence:** Make their own decisions about what to create, how to solve a challenge, and what types of materials and tools to use.
- **Physical Development:** Build fine motor skills while working with a variety of hand tools.
- **Language and Literacy:** Build language skills as they describe their building process and tell stories related to their work. Gain new vocabulary related to engineering processes, tools, and materials.

### How Adults Can Support Playful Learning in Tinkering Lab

- The facilitator in the space will provide a brief introduction to the challenge and activity of the day, as well as provide tips on how to begin.
- If children are still unsure of how to start, walk around the room with them and look at the available materials. Look at examples of what others have made or are working on. This can spark ideas!
- When it comes to constructing, follow the child's lead. What is their vision? How can you help? Try not to lead the building/making process *for* them.
- Engage the child in conversation while they are building. Is there a story that goes along with what they are making? Research shows that storytelling and reflection can deepen children's engineering learning.

r skills in the following areas.  
understanding through real life experiences

group and individual ownership and pride in  
gineer, builder.  
ld large-scale structures that require

r own standards for success. Learn from and  
ething that stands up.  
ge size wooden struts. Develop eye-hand

nicate during their building experience—  
; about plans, sharing strategies, and reflecting  
erials.

ther structures for inspiration.  
ne of the construction tools and materials. Use  
going to need more nuts, bolts, and washers.  
?" component to learn an important tip. What

their vision.

# More to Come! What's Next?

- Ongoing museum visits
- Ongoing LTP Trainings for Staff and Mentors
- Family Events
- LTP Kit Distribution, timed with Summer Break
- Further surveying and reflective practice to collect data on outcomes
- Ongoing participation in the LPLMN--Community of Practice to share learnings



Photo: Friends of the Children





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**Building a Community of Playful Learners (one brick at a time!)**