



## Museums for America

Sample Application MA-10-18-0108-18  
Project Category: Learning Experiences

### Marbles Kids Museum

Amount awarded by IMLS:	\$103,817
Amount of cost share:	\$104,616

Attached are the following components excerpted from the original application.

- Abstract
- Narrative
- Schedule of Completion

Please note that the instructions for preparing applications for the FY2019 Museums for America grant program differ from those that guided the preparation of FY2018 applications. Be sure to use the instructions in the FY2019 Notice of Funding Opportunity for the grant program and project category to which you are applying.

## Marbles Kids Museum—*Play Counts* Abstract (Learning Experiences)

Marbles Kids Museum respectfully requests \$103,817 over two years from the Institute of Museum and Library Services Museums for America “Learning Experiences” to develop actionable, accessible resources that prepare staff, volunteers, and interns to provide play-based early math learning opportunities that will ignite the imaginations of children and caregivers. *Play Counts: Building Capacity to Facilitate Early Math Learning* will replicate Marbles’ proven early literacy professional development initiative to give frontline team members tools and strategies to engage infants, toddlers, and pre-school-aged kids in activities and conversations that lay the foundation for critical early math skills. Project partners include Wake County Public School System’s Office of Early Learning; Dr. Sandra Linder, Associate Professor of Early Childhood Mathematics Education at Clemson University; and Susan Gates, Special Advisor on Education at SAS.

The National Council of Teachers of Mathematics and the National Association for the Education of Young Children emphasize the importance of early math learning in a position statement that “affirm[s] that high-quality, challenging, and accessible mathematics education for 3- to 6-year-old children is a vital foundation for future mathematics learning.” The Erikson Institute, which has worked for 50 years in the field of child development, states that “early mathematics achievement is highly predictive of later school success in both mathematics and reading; yet children’s math achievement varies widely at kindergarten entry.” These statements are part of a growing body of research indicating that early math skills are a stronger predictor of academic success than early literacy skills. In their chapter on *Key Predictors of Later School Success*, Duncan, Dowsett, and Lawrence describe pre-academic math skills as “more consistently predictive of later achievement than early reading skills.” Yet there are no known resources in Wake County, North Carolina that intentionally provide accessible, high-quality early math learning opportunities and instruction. This gap in services means that Wake County children might be missing out on fundamental early learning key to academic achievement.

The two-year project will involve research, content development and video production, implementation, and evaluation. Year one work will involve researching early math learning content and best practices, working with a content coach, understanding community need related to early math learning, and creating content for professional development video modules. Year two work will focus on content development, professional development, implementation, and dissemination to caregivers and members of the museum community.

*Play Counts* will equip Marbles frontline team members with tools and strategies to engage guests in activities and conversations that lay the foundation for critical early math skills. A series of 8 short videos will describe and model these strategies. This tailored, actionable professional development will directly impact the early math learning opportunities for the estimated 90,000 pre-school-age and younger guests who visit Marbles each year. Team members will take on playful character roles such as a mathematician who sparks curiosity and engages young children in play-based math activities. Caregivers who see their kids interacting with Marbles team members will gain new ideas for prompting fun, contextualized early math learning after they leave the museum. This will be supplemented by hands-on resources and caregiver workshops. Finally, *Play Counts* will provide resources for the museum community. Marbles will share the modules, strategies, and outcomes at an institute for museums in the Carolinas and Virginia and will also share the resources and outcomes in conferences and presentations.

*Play Counts* will deepen staff understanding of what early math skills are, how to foster these skills, and why investment in early math is critical to long-term success in school. Engaging, relevant, module-based professional development will enable Marbles staff, volunteers, and interns to meet an unmet need in Wake County, NC—out-of-school support in early math learning. *Play Counts* will provide foundational early math skills that will improve the long-term educational outcomes of Marbles’ youngest learners. We will work with an external evaluator to track progress and outcomes related to four key goals: (1) Research and develop early math resources, activities, and exhibit enhancements that engage children and their families in a children’s museum setting; (2) Enhance frontline museum staff’s capacity to facilitate early math engagement with our youngest guests and their families; (3) Provide engaging and effective early math learning experiences for young children and their families in museum settings. (4) Create a replicable model of professional development for museum educators. Possible tools to evaluate outcomes include brief surveys and observations of exhibit play.

## Marbles Kids Museum—*Play Counts* Narrative (Learning Experiences)

### Project Justification

#### Project Overview

Marbles Kids Museum respectfully requests \$103,817 over two years from the Institute of Museum and Library Services Museums for America “Learning Experiences” to develop actionable, accessible resources that prepare staff, volunteers, and interns to provide play-based early math learning opportunities that will ignite the imaginations of children and caregivers. *Play Counts: Building Capacity to Facilitate Early Math Learning* will replicate Marbles’ proven early literacy professional development initiative, OPT-IN, to give frontline team members tools and strategies to engage infants, toddlers, and pre-school-aged kids in activities and conversations that lay the foundation for critical early math skills. Marbles aims to inspire imagination, discovery and learning through play, and our unique environment naturally encourages play-based early math learning referenced as critical by early learning scholars (described in Project Need section). *Play Counts* will deepen staff understanding of what early math skills are, how to foster these skills, and why early math is critical to long-term success in school. As our frontline team engages young learners in imaginative math play, caregivers will be exposed to what early math exploration looks like and leave Marbles with strategies (and tangible resources) to continue play-based learning at home.

In 2014, Marbles launched a professional development initiative to help members of the frontline team foster early literacy among museum guests. The initiative, OPT-IN, provides the following simple, concrete strategies for engaging our guests in early literacy learning:

O-Observe and Join (Joining in what a child is doing. Ensuring that play is child-led.)

P-Participate (Connecting with kids in play. Modeling and supporting the development of new skills.)

T-Talk (Infusing play with talk that fosters language development: commenting, asking open-ended questions, creating conversational space, introducing new vocabulary in the context of play, providing specific praise.)

I-Inspire (Thinking aloud to provide cognitive modeling, scaffolding new learning.)

N-N<sup>2</sup>exit (Naturally exiting the play interaction.)

These strategies were described and modeled in 20 short (5- to 8-minute) videos, each of which Marbles’ frontline team members (composed of staff, volunteers, and interns) view on their own to allow for self-pacing, review and repetition and then discuss in facilitated debriefs at the beginning of each shift. OPT-IN’s tailored, actionable strategies have resulted in 1) Marbles team members becoming more confident in facilitating play interactions and 2) guests reporting an increased level of interaction between team members and their children. Marbles has shared the OPT-IN approach at conferences including ACM 2015 and 2017; Synergy 2015; NCAeyc 2014, 2015, and 2016; and the 2015 Youth Literacy Partners meeting. At each presentation, peer museums express a strong desire to have access to the OPT-IN professional development series, but because OPT-IN was funded and developed for internal purposes only, the capacity to disseminate has been limited. In developing *Play Counts*, we will intentionally build in methods for sharing resources and outcomes with caregivers in hosted workshops and with peer museums through an institute that takes place at the end of the period of performance and via online hosting of videos accessible to institute participants.

Our year one work will involve researching early math learning content and best practices, working with a content coach, understanding community need related to early math learning, and creating content for professional development video modules. Our year two work will focus on content development, professional development, implementation, and dissemination to caregivers and members of the museum community.

#### Project Need

Early childhood mathematics is defined by the Institute for Childhood Success as mathematics learning that takes place between birth and age eight. The Institute’s October 2017 issue brief by Dr. Sandra M. Linder, Associate Professor of Early Childhood Mathematics Education at Clemson University and content coach for *Play Counts*, states that early math experiences should not be described as worksheets and flash cards, but rather as “play-based

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and contextualized to connect with children’s experiences.” Linder goes on to say that early math learning should promote problem solving and reasoning through open-ended tasks that encourage communication and collaboration, thereby creating an effective early childhood mathematics environment. Duncan, Dowsett, and Lawrence’s chapter on *Key Predictors of Later School Success* tells us that children’s “pre-academic and academic math skills develop through learning opportunities in everyday activities and specific instruction.” Marbles is well positioned to offer the play-based learning activities and instruction that young children need in order to develop critical early math skills—activities and instruction that might not otherwise be available to infants, toddlers, and children who are not in a preschool or daycare setting and everyday opportunities that caregivers with an aversion to math might not readily present to their children.

On-the-ground experts in the field, the National Council of Teachers of Mathematics (NCTM) and the National Association for the Education of Young Children (NAEYC), have also taken a stance on the importance of early math learning with a position statement that “affirm[s] that high-quality, challenging, and accessible mathematics education for 3- to 6-year-old children is a vital foundation for future mathematics learning.” Furthermore, Chicago’s Erikson Institute has worked for 50 years in the field of child development. Its Early Math Collaborative states four core values: 1) Math learning is for everyone, 2) Math learning is crucial in early childhood, 3) Math learning follows developmental progressions, and 4) Math learning depends on effective teaching. The Collaborative elaborates on its second value stating that “early mathematics achievement is highly predictive of later school success in both mathematics and reading; yet children’s math achievement varies widely at kindergarten entry.”

Erikson’s statement is part of a growing body of research indicating that early math skills are a stronger predictor of academic success than early literacy skills; and Duncan, Dowsett, and Lawrence describe pre-academic math skills as “more consistently predictive of later achievement than early reading skills.” Yet there are no known resources in Wake County (Marbles’ primary area of service and NC’s second most populous county) that intentionally provide accessible, high-quality early math learning opportunities and instruction. This gap in services means that Wake County children might be missing out on fundamental early learning key to academic achievement. The outcomes for children who do not have a strong foundation in numeracy are disturbing: children with persistent math problems (elementary students in the bottom 25%) were “considerably less likely to graduate from high school and much less likely to attend college.” The chances of attending college for child with persistently low math achievement is 33.8 percentage points lower than for a child with no math achievement problems.

Marbles will work closely with longtime partner Wake County Public School System’s Office of Early Learning to develop activities that prepare future kindergarteners for math success. Previous collaborations with WCPSS on targeted out-of-school activities include Access to Achieve (IMLS-supported), Kick-off to Kindergarten (IMLS-supported) and Title I elementary and preschool family events. Through Marbles collective efforts with project partner WAKE Up and Read, Wake County has seen an increase in school readiness as measured by the Kindergarten Initial TRC Text Reading Comprehension Assessment. We expect to see similar growth through collective, targeted efforts to prepare our youngest museum guests for success in early math. See the Office of Early Learning’s letter of commitment, which notes the lack of Wake County resources providing early math learning opportunities and the way in which *Play Counts* will support kindergarten readiness priorities. In addition to content coach Dr. Sandra Linder of Clemson University, Marbles will involve local experts in math early learning, including technology giant SAS’s special advisor on education, Susan Gates (see letter of commitment), and the schools of education at universities such as UNC-Greensboro and NC State University.

### Project Benefit

*Play Counts* will equip Marbles frontline team members (currently more than 50 employees) with tools and strategies to engage guests in activities and conversations that lay the foundation for critical early math skills. A series of 8 short (5- to 8-minute) videos will describe and model the specific strategies. Using videos provides consistent delivery of information across a diverse team with varied schedules, allows team members the flexibility to view modules independently as individual workday schedules permit, and provides opportunity for self-pacing, review

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and repetition. Team members will debrief each module topic and strategy in 1:1 coaching sessions as well as during ongoing group trainings.

The tailored, actionable professional development that the Marbles team receives will directly impact the early math learning opportunities for the estimated 90,000 pre-school-age and younger guests who visit Marbles each year. We envision a rollout of these new strategies in stages, with team members taking on playful character roles such as a mathemagician, who sparks curiosity and immediately engages young children in fun, play-based math activities, with the flexibility to fine-tune and improve the strategies after each guest interaction. We will develop early math mobile play kits that contain math instructional materials such as tens frames, magnatiles, and blocks. Play kits will be integrated into the exhibit floor for easy access and activation by our frontline team in 1:1 pop-up play interactions with guests.

Caregivers who see their kids interacting with the mathemagician and other Marbles team members will gain new ideas for prompting fun, contextualized early math learning after they leave the museum. The pop-up play that is modeled by our team members will be supplemented by hands-on resources that further equip caregivers for at-home early math play, including play posters and action cards with actionable ideas and activities, and caregiver workshops that take a deeper dive into strategies for integrating play-based early math learning in children's everyday activities.

Finally, *Play Counts* will provide resources for the museum community. Marbles will share the 8 video modules, facilitation strategies, and outcomes of the professional development support at an institute for museums in the Carolinas and Virginia and will also share the resources and outcomes in conferences and presentations (see Sharing Project Results section).

### Project Link to Strategic Plan

Marbles' 2016-18 Strategic Plan outlines fundamentals as well as outcomes and strategies. *Play Counts* advances Marbles Strategic Plan, including four of our Core Play Initiatives—Ready Set Learn, Create Innovate, Explore Experiment, and Connect. The early learning play promoted and encouraged in *Play Counts* will build intellectual, social, and emotional skills for success in learning and in life (Ready Set Learn). It will support team members working directly with our guests to encourage imagination, creativity, and self-expression (Create Innovate) that leads to discovery and kindles curiosity (Explore Experiment). It will teach cooperation and collaboration, strengthen families through multigenerational play, and unite our community in a common mission to foster early math learning at a critical age (Connect). *Play Counts* advances the following strategies in our strategic plan:

- Expand capacity for core target age group (2-7), strengthen offerings for secondary age groups (infants and 8-13), and roll out innovative programs to attract new audiences.
- Employ formal and informal feedback and evaluation systems to monitor and adjust programs and services and to provide meaningful information to stakeholders.
- Train and empower team members to provide and prioritize friendly, right-fit customer service that wins the hearts of our guests.
- Build on successful frontline team training models and experiment creatively with play and programs on a daily basis to surprise and delight museum and theater guests.
- Provide robust training and professional development opportunities, from onboarding to individual job functions to mission-based motivation.

### Project Advancement of Museums for America and Learning Experiences Goals

*Play Counts* will directly address Museums for America's goal to strengthen the ability of an individual museum to serve its public. By equipping our staff, volunteers, and interns with tools to engage our youngest guests in early math learning, we are meeting a critical need of this target audience—a need that is currently not being met by non-school community organizations in Wake County. *Play Counts* employs the following IMLS-recommended strategies as we work to better serve our public: 1) Collaborate with and learn from other community-based organizations

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such as afterschool associations, summer learning programs, early childhood service providers, youth mentoring programs, libraries, archives, universities, and community development organizations; 2) Deploy new technologies and develop innovative digital tools and platforms that can diversify, strengthen, grow, and sustain the museum’s learning, collections, and community engagement initiatives; 3) Incorporate formative and summative evaluation strategies to learn from projects and build institutional capacity; 4) Invest in the professional development of museum staff, volunteers, and interns to enhance their skills and ensure the highest standards in all aspects of museum operations. 5) Incorporate interdisciplinary approaches to museum programming; 6) Explore STEM-related programs that engage audiences in meaningful inquiry-based interactions with researchers and practitioners, and 7) Strengthen early learning best practices in order to better serve families and caregivers with young children, including cross-generational learning opportunities. Marbles’ approach to engaging our guests in early math will be grounded in cognitive science and early childhood education research as well as best practices from museums and institutions that have implemented similar strategies.

### Project Work Plan

#### Project Activities

Content coach Dr. Sandra M. Linder shares the following components of math-rich environments: 1) Having readily available tools and materials (e.g. blocks, concrete manipulatives, standard and nonstandard tools for measurement, etc.) throughout the space that are useful in engaging young children in mathematical tasks; 2) Encouraging mathematical discourse and communication...by understanding and making connections to young children’s interests and current schema about the world around them; 3) Modeling positive dispositions and promoting the value of mathematics; 4) Strategically increasing formal opportunities (circle time, small group time, etc.) related to early mathematics; and 5) Capitalizing on informal learning opportunities (center time, outdoor/indoor play, snack/lunch, etc.) related to early mathematics. Additionally, Erikson Early Math Collaborative outlines seven big ideas in early math: 1) sets, 2) number sense, 3) counting, 4) number operations, 5) pattern, 6) measurement, and 7) data analysis. *Play Counts* will work in four phases (research, content development and video production, implementation, and evaluation) to combine Dr. Linder’s components of early math learning with the big ideas in early math, bringing in new information and best practices as we learn and develop *Play Counts* strategies and related play-based tools to encourage imaginative early math play among our guests. At the end of the fourth phase, Marbles will share what we have learned in an information-sharing phase.

#### Research

- Marbles will evaluate existing museum-based early math exhibits and programs.
- Marbles will send at least three staff members to the NCTM Annual Meeting & Exposition and Erikson Early Math Summer Institute to learn content and pedagogy related to the seven big ideas in early math learning.
- Marbles Play Initiatives Team will facilitate focus groups with content experts and community partners.
- Marbles will work with content coach Dr. Sarah Linder to prioritize key concepts in early math that should be explored in a play-based setting and develop recommended strategies for engaging museum guests in exploratory early math play.

#### Content Development and Video Production

- Marbles Play Initiatives Team will develop content for 8 video training modules, each focusing on a simple, actionable strategy for engaging guests in early math experiences.
- Marbles will work with a video production company to produce, film, and edit modules.
- Marbles Play Initiatives Team and Training Coordinator will create a video portal and develop individual pacing guides and content plans for facilitated discussions and coaching sessions corresponding to each module.
- Marbles Play Initiatives Team will develop activities to include in pop-up play kits and define the role of the mathemagician(s) in modeling play and modeling imaginative early math play for caregivers.

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### Implementation

- Marbles team members will view all 8 video modules over the period of four months, implementing new strategies on a rolling basis upon completion of debrief and reflection.
- Marbles frontline team members will roll out newly learned play-based math learning strategies, using characters such as a mathemagician to engage children and caregivers and will integrate early math mobile play kits into exhibits to facilitate pop-up play interactions.
- Team members will engage in ongoing reflection and dialogue with colleagues about the efficacy of the implementation and share successes and problem-solve challenges with teammates.
- Marbles' Training Coordinator and Director of Play Enrichment will provide ongoing coaching, modeling, and feedback on team members' early math play facilitation to enhance effectiveness.

### Evaluation

- Marbles, in partnership with an external evaluator, will conduct ongoing formative evaluation of both the professional development content and dissemination during the research and content development phases.
- Marbles will conduct pre-and post-tests of team members, gauging their overall understanding of what early math skills are, how to foster these skills, and why investing in early math is critical to long-term success.
- Marbles will survey caregivers before and after implementation to determine changes in caregivers' understanding of what early math skills are and how to support early math learning through play.

### Information Sharing

- Marbles will repurpose and modify professional development modules to create caregiver workshops focused on fostering early math learning through everyday activities and play at home. Workshops will be offered on a quarterly basis for up to 50 attendees. Fees will be waived for caregivers who are unable to pay.
- Marbles will convene an institute at the end of the period of performance to share professional development resources and lessons learned with peer museums in the Carolinas and Virginia; we anticipate 25 attendees.
- Marbles will also share *Play Counts* professional development tools and lessons learned at annual conferences of ASTC, ACM, NCAeyc, and Child Care Services Association ASK.

### Project Risks and Accounting in Work Plan

One risk to success is the degree to which the professional development program can meet the specific needs of individual staff members who have diverse interests and skills. To address the needs of individual staff members, we will conduct pre-assessments with participants in each training module to ensure that each module meets the needs of the staff and addresses specific concerns. The pre-assessment data will be used to shape the direction of the module and the ways in which we scaffold the support for module implementation.

### Project Planning and Management

**Hardin Engelhardt**, Director of Community Engagement has 24 years of experience in education, leading projects including IMLS-funded Access to Achieve and Ready, Set, School during her 9-year tenure at Marbles. As the project director, Engelhardt will oversee research, content development, module creation, and dissemination. **Billie Barefoot**, Early Childhood Play Lead, has 4 years of experience facilitating hands-on play experiences at Marbles and other institutions. **Celeste Kathleen**, Community Engagement Coordinator, has 5 years of experience leading informal STEM education experiences, at Marbles and other institutions. Barefoot and Kathleen will create and test play scenarios for training modules and develop content for caregiver resources. **Jordan Pearce**, Training Coordinator and former Marbles frontline team member, leads ongoing professional development for the museum. Pearce will be responsible for the ongoing implementation of the project, including ensuring that all frontline staff view videos, participate in daily briefing, engage in self-reflection, and receive coaching. **Sofia Lawrence**, Director of Play Enrichment, has a teaching license in addition to her 6 years of experience creating and facilitating professional development workshops and trainings. Lawrence will manage the development and production of training videos and conduct play training with the frontline team. **Michael Gilbert-Singletary**, Director of Play

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Dynamics, has over 10 years of experience creating and delivering play experiences both at informal learning institutions including the Museum of Life and Science and the American Museum of Natural History. Gilbert-Singletary will oversee the development of the early math activities and experiences, play kits, and dramatic play (mathemagician) as well as creation of caregiver resources. **Mary Beth Ausman**, External Evaluator, has evaluated a wide variety of programs for museums and cultural institutions in partnership with K-12 public schools, universities, and human service agencies. Ausman will work with Marbles to develop and implement both formative and summative evaluations for *Play Counts*. **Dr. Sandra Linder**, Associate Professor of Early Childhood Mathematics Education at Clemson University and content coach, will provide expertise on the early math activities, experiences, and play kits that are developed as well as facilitation strategies included in the professional development videos. In addition, Dr. Linder will share her expertise at the institute at the conclusion of the project.

### Timeline of Activities

#### YEAR 1 (November 2018-October 2019)

- November 2018-July 2019: Research existing early math programming and participate in content training
- May-July 2019: Conduct focus groups with content experts and community partners
- August-September 2019: Work with content coach to identify topics for 8 video modules; develop activities, experiences, and dramatic play for use in professional development modules
- October 2019: Film mock ups of modules in an “iPhone test.” Conduct formative evaluation of draft videos and make revisions based on findings

#### YEAR 2 (November 2019-October 2020)

- November-December 2019: Film content for 8 video modules, edit and produce final video modules
- January-April 2020: Implement professional development. Roll out of early math activities, experiences, play kits, and dramatic play for museum guests
- February 2020-Ongoing: Share results at ACM and other conferences (see Sharing Project Results section)
- June-August 2020: Evaluate changes in staff knowledge and behavior. Staff attend content training
- September-October 2020: Host institute for children’s museums in the Carolinas and Virginia. Present and share professional development resources at various conferences (see Sharing Project Results section)

### Resources Needed to Carry Out Project

YEAR ONE (November 2018-October 2019). Staff time, training, and evaluation costs comprise the majority of year one resources. Community Engagement Coordinator, Celeste Kathleen, will spend 5% of her time developing play scenarios and caregiver resources; this work will be covered by IMLS. Marbles will cover staff time and benefits for all other project staff as part of cost share. Hardin Engelhardt (10%) will provide general oversight, including content development and formative evaluation. Other staffing resources will include the work of Sophia Lawrence (10%) and Jordan Pearce (5%) to research and develop the content for the *Play Counts* videos, Michael Gilbert-Singletary (10%) to develop play activities and related materials, and Billie Barefoot (10%) to assist Kathleen in developing play scenarios and caregiver resources. Team members will participate in professional development to enhance their understanding of early math learning. Additional costs include materials for mobile play kits and focus group expenses. Year one will also involve working with an external evaluator on formative evaluations and with a content coach on early math concepts and strategies.

YEAR TWO (November 2019-October 2020). In year two, Kathleen will continue to spend 5% of her time developing play scenarios and caregiver resources. Engelhardt will continue to oversee the project, focusing much of her time on the end-of-year institute for museum professionals in the Carolinas and Virginia. Lawrence will continue to develop professional development videos and implement training, with Pearce spending 15% of her time overseeing professional development implementation. Gilbert-Singletary will continue to develop play-based activities, including mathemagician scripts, for implementation and roll out, and Barefoot will test activities with guests and oversee project roll out, including caregiver workshops. Filming and production of the 8 video modules

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will involve contracting with an external vendor. Team members will continue to increase their understanding of early math learning through professional development and the support of a content coach. The professional development materials as well as outcomes will be evaluated in partnership with the external evaluator.

### Tracking Progress Towards Performance Goals and Intended Results

Marbles will contract with Mary Beth Ausman to provide additional expertise and assistance with evaluation planning, data collection, analysis, and reporting. Marbles and Ausman will develop formative and summative evaluation plans for tracking progress and outcomes related to four key goals: 1) Research and develop early math resources, activities, and exhibit enhancements that engage children and their families in a children's museum setting; 2) Enhance frontline museum staff's capacity to facilitate early math engagement with our youngest guests and their families; 3) Provide engaging and effective early math learning experiences for young children and their families in museum settings. 4) Create a replicable model of professional development for museum educators. Possible tools to evaluate outcomes include brief surveys and observations of exhibit play. Findings from the formative evaluation in year one will inform adjustments to the project in year two. Please see supporting documentation for a logic model developed by Mary Beth Ausman.

### Sharing Project Results

At the end of year two, Marbles will host an institute for 25 representatives from children's museums in the Carolinas and Virginia to share and disseminate professional development tools and create an informal community of practice for children's museums seeking to increase early math learning through play-based activities. We will also share *Play Counts* professional development tools and lessons learned at the following conferences: ASTC, October 2020; ACM, spring 2020; NCayec, September 2020; Child Care Services Association's ASK, February 2020.

## **Project Results**

### Performance Measure Statement and Related Data Collection

*Play Counts* will address the two of the three Learning Experience Performance Goals: 1) Train and develop museum and library professionals and 2) Develop and provide inclusive and accessible learning opportunities. We will measure the effectiveness by collecting data on the following Performance Measure Statements: 1) My understanding has increased as a result of this training, 2) I am confident I can apply what I learned in this program/training, and 3) My interest in this subject has increased as a result of this training. We will collect data on the number of training participants, total responses, responses per answer, and non-responses. We will also collect data about guest engagement with members of the Marbles' frontline team.

### Intended Results

*Play Counts* will deepen our overall staff understanding of what early math skills are, how to foster these skills, and why investment in early math is critical to long-term success in school. Engaging, relevant, module-based professional development will enable Marbles staff, volunteers, and interns to meet an unmet need in Wake County, NC—out-of-school support in early math learning. *Play Counts* will provide foundational early math skills that will improve the long-term educational outcomes of Marbles' youngest learners.

### Changes in Audience's Knowledge, Skills, Behaviors, and/or Attitudes

The external evaluator will track progress and outcomes per the four goals in the tracking progress section of this proposal. See logic model for details on our theory of change related to changes in knowledge, skills, and behavior.

### Tangible Products

*Play Counts* will result in a series of 8 professional development video modules and related training materials that address strategies to engage young learners in play-based early math experiences.

### Sustaining Benefits

Marbles will sustain the benefits of the project by supporting ongoing staff development and training to promote early math learning experiences for our guests and sharing knowledge and resources with peer institutions.



