

## Kohl Children’s Museum Early Math Education Initiative Executive Summary 2017-2018

### Participation:

Demand for participation in this program has continued to grow this year; during our recruiting efforts in the spring of 2017 we received over 40 applications. The Museum received 32 applications from Chicago childcare providers as well as applications from Beach Park, Cicero, Calumet City, Gages Park, Maywood, Oak Park and Villa Park. A total of 29 childcare providers from Chicago, and 11 from surrounding suburbs of Cook and Lake County fully participated in the program. From these 40 childcare providers 3 of them received Spanish support during the training and field trips in Spanish. The Early Math Education Initiative Program provides several critical components: Professional developments for childcare providers; focused field trip to the museum, in school museum experience to their home daycare, resources and support from museum staff in the early math initiative. Approximately, 625 children were serviced in the grant program from Chicago, Cicero, Calumet City, Beach Park, Maywood, Gages Lake, Oak Park and Villa Park. 34 participants attended the Winter Math Symposium on February 17, 2018.

### Survey Results Summary:

#### A. In School Museum Experience

- Number of evaluation: 29

|  | Strongly Disagree | Disagree | Undecided | Agree  | Strongly Agree |
|--|-------------------|----------|-----------|--------|----------------|
| The workshop educator was knowledgeable in this subject area       |                   |          |           | 3.45%  | 96.55%         |
| The workshop educator demonstrated strong group management skills. |                   |          |           | 10.34% | 89.66%         |
| The workshop educator gave a quality presentation                  |                   |          |           | 6.90%  | 93.10%         |
| The workshop was a positive experience.                            | 3.45%             |          |           | 6.90%  | 89.66%         |

### Additional Comments:

- “Ms. Natalia was very patient and even remembered some of the children's names as she engaged.”
- “Children enjoyed creating patterns and groups. They enjoyed these activities everyday. Children participation was great.”
- “She was excellent to have in my class and my students really enjoyed the activities.”
- “The children loved this! Thank you for helping the children understand the patterns and sets!”
- “I loved it and this is an amazing workshop in which myself and students learn. Thank you!”

- “I really enjoyed how the children participated with the activities.”
- “It was wonderful, thank you!”
- “Thank you I found this to be very uplifting for my children. They were excited and engaged in their own way.”
- “Great activity, loved it. Lots of learning and follow up with what we are doing daily. :)”
- “She did a great job keeping the children motivated and attentive. The children really enjoyed it! :)”
- “She was very pleasant, friendly and fun. The children were attentive and responsive with her.”
- “Presenter did a great job keeping the children focused.”
- “The educator was knowledgeable & provided great materials.”
- “Good presentation held most of their attention.”
- “Received some ideas how to manage/teach pattern activities in small group settings.”
- “Part of our daily concepts for learning. Reinforcement of work.”
- “The event started later and the kids were a little restless.”
- “We are working on music this month so we have been practicing patterns.”

## B. Museum Focused Field Trip

- Number of evaluation: 23

|  | Strongly Disagree | Disagree | Undecided | Agree  | Strongly Agree | N/A    |
|--|-------------------|----------|-----------|--------|----------------|--------|
| The workshop educator was knowledgeable in this subject area         |                   |          |           | 13.04% | 86.96%         |        |
| The workshop educator demonstrated strong group management skills.   |                   |          |           | 8.70%  | 91.30%         |        |
| The workshop educator gave a quality presentation                    |                   |          |           | 13.04% | 86.96%         |        |
| The workshop was a positive experience.                              |                   |          |           | 4.55%  | 95.45%         |        |
| The museum was clean (both in exhibit areas and in field trip space) |                   |          |           | 9.09%  | 90.91%         |        |
| The museum provided a lunch area in a timely fashion.                |                   |          |           | 4.55%  | 81.82%         | 13.64% |
| The museum provided students with engaging, hands-on exhibits.       |                   |          |           | 4.55%  | 95.45%         |        |
| The museum was adequately staffed.                                   |                   |          |           | 4.55%  | 95.45%         |        |
| The museum provided friendly and helpful exhibit guides.             |                   |          |           | 4.55%  | 95.45%         |        |

### ➤ Additional Comments:

- “We love and enjoy our visit”
- “Good Presentation.”
- “Thank you for making this learning experience an enjoyable & well organized one for our class. :)”
- “Long wait in whole foods.”
- This was an extremely amazing trip.
- “My students had an excellent time and were excited to experience more.”
- “We will be doing these activities at the center!”
- “Thank you!”
- “Thank you so much for this opportunity.”
- “This was an excellent opportunity for our children and parents. Thanks Kohl Museum!!”
- “They had a great time.”

### C. Trainings

- Day 1

- Number of evaluations: 39

|  | Strongly Disagree | Disagree | Undecided | Agree  | Strongly Agree |
|--|-------------------|----------|-----------|--------|----------------|
| This workshop increased my knowledge and skills.   | 2.56%             | 5.13%    | 2.56%     | 12.82% | 76.92%         |
| It was clear that the workshop was presented by persons with education and experience in the subject matter. | 7.69%             | 2.56%    |           | 5.13%  | 84.62%         |
| The material was presented in an organized, easily understood manner.  | 7.69%             | 2.56%    |           | 7.69%  | 82.05%         |
| The workshop included ample discussion, critique and application of what was being presented.                | 7.69%             | 2.56%    |           | 5.13%  | 84.62%         |
| You were provided with enough take-home resource information.  | 2.56%             | 7.69%    |           | 2.56%  | 87.18%         |

➤ Please describe below one feature of the workshop that was most helpful/interesting to you:

- “Hands on activities”
- “The pattern area”
- “The materials and the videos”
- “Recreating and acting out books”
- “Materials we were provided with and how to use them.”
  
- “Knowing that math/patterns are everywhere and how to adjust for younger kids.”
- “I like how to act out stories and music”
- “The list of books & activities to do w/ the children.”
- “The big idea book”
- “This workshop gave me sooooo many ideas to help me with math in the classroom”
- “Take home materials”
- “The group activities”
- “All the hands on activity”
- “Books-making patterns w/ books”
- “I liked the explanations of patterns”
- “The visited to the museum.”
- “Sorting was my favorite. I am very inspired & feel more knowledgeable.”
- “All of it.”
- “I enjoyed presenting the patterns to the class”

- “Showing and explaining how math concepts are all around us.”
- “It broke the concept that math is adding.”
- “The manipulatives + lesson”
- “Patterns can be viewed and sorted out in many ways. "Math is all around us"”
- “I liked the different ways of demonstrating patterns- dancing-growing story patterns”
- “The walks in the museum and finding the patterns.”
- “Resources and materials to use in the classroom”
- “Fantastic”
- “Different ways to work with sets and sorting”
- “The math concepts-patterns, sorting all the good ideas of what is math.”
- “The sorting bag; the group activities; exploring the materials in the museum.”
- “Its important to point out (math) to children that are present in everyday life.”
- “How to explain abstract and mathematical concepts more effectively. I like the part we broke into groups to do activities.”
- “Use words to describe math pattern”

➤ Provide any suggestions/ideas for ways the workshop could be improved/modified.

- Tell the teachers to bring their lunch
- Increase pacing/Differentiate for differing skills/levels
- Larger room
- Open the door before the registration starts.
- I really enjoyed everything Thank You!
- It was overall very good experience. At this time there is no ideas to share because it is already at its best.
- Hope to attend more workshops
- It would be a done more days or week.

## Day 2

- Number of evaluations: 33

|  | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
|--|-------------------|----------|-----------|-------|----------------|
| This workshop increased my knowledge and skills.   |                   |          |           | 6.06% | 93.94%         |
| It was clear that the workshop was presented by persons with education and experience in the subject matter. |                   |          |           | 6.06% | 93.94%         |
| The material was presented in an organized, easily understood manner.  |                   |          |           | 6.06% | 93.94%         |
| The workshop included ample discussion, critique and application of what was being presented.                |                   |          |           | 3.13% | 96.88%         |
| You were provided with enough take-home resource information.  |                   | 3.03%    |           |       | 96.97%         |

➤ Please describe below one feature of the workshop that was most helpful/interesting to you:

- “The capacity activity- comparing the capacity of different containers. I will try in my class.”
- “When we provide materials to children to measure be sure they have the same measuring tools (cups, bowls, etc. so that there is accuracy.”
- “In the video, I saw children understanding how to measure with non-standard units and how they are already thinking about measuring.”
- “I enjoyed the interactions of the activities.
- “The powerpoints and videos”
- “Being able to be hands on with the material.”
- “All of it but the worms”
- “I loved the hands on activities and discussion piece on how to relate it to the classroom.”
- “Variety of activity suggestions”
- “The new knowledge of approach to math.”
- “Looking at how many different ways we can measure not just length & width & that it takes time!”
- “I liked measuring the worms. I also liked the activities where we weighed items.”
- “I really liked interacting in the museum, so I can see how to introduce discussions with kids when we visit the museum.”
- “I love everything. It's all interactive & has so many resources to take to the classroom.”

- “Museum walk/Exploration”
  - “Measurement- How it is done.”
  - “Hands on activities”
  - “The books and the measurement containers.”
  - “How to incorporate math in everyday learning.”
  - “Everything was helpful.”
  - “Measurement station”
  - “Was the weighing different items to figure out the weight.”
  - “How to be more creative with children in being able to measure.”
  - “I liked the measuring the worm with different standardized materials.”
  - “I like the idea to use blocks to count the letters on the name.”
  - “Distinguishing the weight/heavy (big) by eye and finding out differently by measuring”
- Provide any suggestions/ideas for ways the workshop could be improved/modified
- Would have liked to receive more hands on supplies
  - Lovel more extended activities.
  - More activities to take home. Thank you ladies :)

### Day 3

- Number of Evaluations: 26

|  | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
|--|-------------------|----------|-----------|-------|----------------|
| This workshop increased my knowledge and skills.   |                   |          |           | 3.85  | 96.15          |
| It was clear that the workshop was presented by persons with education and experience in the subject matter. |                   |          |           | 3.85  | 96.15          |
| The material was presented in an organized, easily understood manner.  |                   |          |           |       | 100            |
| The workshop included ample discussion, critique and application of what was being presented.                |                   |          |           | 4     | 96             |
| You were provided with enough take-home resource information.  |                   |          |           |       | 100            |

➤ Please describe below one feature of the workshop that was most helpful/interesting to you:

- “Hands on activities”
- “Math is everywhere.”
- “I really enjoyed the measurement activities. My favorite blocks were the magnetic wooden blocks.”
- “How to incorporate books into learning math concepts. We read a lot and now we can incorporate math into everyday reading.”
- “The hands on sue for all the different blocks and seeing new blocks that I haven't seen before.”
- “I learned how 3-dimensional shares are really created from 2-dimensional shapes.”
- “I came away realizing there are more math topics for young children than i realized at the beginning. All the topics were very well informed.”
- “Feedback. The timely feedback was the most helpful. Also being able to see that math is all around us.”
- “Looking at all the different blocks.”
- “Working with the group with the 3D shapes.”
- “The videos, the hands-on with the materials because it allowed us to practice the skills described.”
- “Being able to do hands activities is great! Getting us to move around keeps us focused.”
- “I liked all the hands-on block play, and take home projects.”
- “I really like the workshop”



- “How I can measure & use blocks to teach children about math.”
  - “measurement was very helpful & math”
  - “The symposium was a great opp. to connect w/ other prof. to discuss Math & Students”
- Provide any suggestions/ideas for ways the workshop could be improved/modified.
- How to scale H blocks for 1& 2yr olds. I really had to think it through to make it work & it can be done.
  - Have more hands on activities.
  - PowerPoint needs to be more big.
  - Perhaps conduct the workshop in a room that is more sound-proof. Provide list of resources where materials for math activities may be located.
  - More raffle prizes :)
  - However, please include me on other training. This was very valuable.
  - Power point pictures bigger please because I cant see them
  - Have more hands on activities. not make the class so long.
  - Increase pacing

## D. Pre-Survey

- Number of evaluations: 32

| <b>PRE ATTITUDE SURVEY</b>   | <b>Strongly Disagree</b> | <b>Disagree</b> | <b>Undecided</b> | <b>Agree</b> | <b>Strongly Agree</b> |
|--|--------------------------|-----------------|------------------|--------------|-----------------------|
| I understand the goals of early math concepts.   |                          |                 | 25%              | 53%          | 29%                   |
| I know how to implement early math concepts into my classroom/ childcare program.  |                          | 9%              | 19%              | 62%          | 9%                    |
| I accept the philosophy of early math.   |                          |                 | 25%              | 47%          | 28%                   |
| I feel comfortable with the idea of using early math concepts.   |                          |                 | 19%              | 56%          | 25%                   |
| I am able to make connections between early math concepts and the educational goals of my program.                           |                          | 3%              | 19%              | 59%          | 19%                   |
| Early math promotes curiosity in children.   |                          |                 | 12%              | 50%          | 38%                   |
| Early math involves children in the learning process.  |                          |                 | 9%               | 41%          | 50%                   |
| The use of early math concepts allows children to discover that what they learn is interconnected with everyday experiences. |                          |                 | 13%              | 53%          | 35%                   |
| Young children have the ability to lead their own learning.  |                          |                 | 16%              | 56%          | 28%                   |
| The hands-on experiences of early math assist children in comprehending academic concepts.                                   |                          |                 | 16%              | 50%          | 34%                   |
| I provided opportunities at my site for families to engage in math learning with their children.                             |                          | 6%              | 28%              | 47%          | 19%                   |
| I provided activities for families to do math activities at home.  |                          | 9%              | 44%              | 31%          | 16%                   |
| I would like more resources to provide to families on early math.  |                          | 6%              | 25%              | 44%          | 25%                   |

## E. Post-Survey

- Number of evaluations: 29

| <b>POST ATTITUDE SURVEY</b>  | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
|--|-------------------|----------|-----------|-------|----------------|
| I understand the goals of early math concepts.   |                   |          |           | 5%    | 95%            |
| I know how to implement early math concepts into my classroom/ childcare program.  |                   |          |           | 11%   | 89%            |
| I accept the philosophy of early math.   |                   |          |           | 21%   | 79%            |
| I feel comfortable with the idea of using early math concepts.   |                   |          |           | 26%   | 84%            |
| I am able to make connections between early math concepts and the educational goals of my program.                           |                   |          |           | 11%   | 89%            |
| Early math promotes curiosity in children.   |                   |          |           |       | 100%           |
| Early math involves children in the learning process.  |                   |          |           | 5%    | 95%            |
| The use of early math concepts allows children to discover that what they learn is interconnected with everyday experiences. |                   |          |           | 11%   | 89%            |
| Young children have the ability to lead their own learning.  |                   |          |           | 16%   | 84%            |
| The hands-on experiences of early math assist children in comprehending academic concepts.                                   |                   |          |           | 11%   | 89%            |
| I provided opportunities at my site for families to engage in math learning with their children.                             |                   | 5%       |           | 42%   | 53%            |
| I provided activities for families to do math activities at home.  |                   |          |           | 58%   | 42%            |
| I would like more resources to provide to families on early math.  |                   |          |           | 32%   | 68%            |

## A. Parent Evaluations

- Number of Evaluations: 116

|  | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
|--|-------------------|----------|-----------|-------|----------------|
| I enjoyed the activity.  |                   |          |           | 41%   | 59%            |
| My child enjoyed the activity.   |                   |          | 1%        | 35%   | 64%            |
| My child learned something new from the activity.                      |                   |          | 1%        | 38%   | 61%            |
| My child practiced something that she/he already knew in the activity. |                   |          | 17%       | 32%   | 51%            |

### ➤ Additional Comments:

- It was fun!
- I like this activity because I think it is important for children to develop their learning with these types of activities
- We love the parent child activities.
- Thank you for this activity and project, my child is learning a lot.
- We loved it!
- Very satisfied
- With the pattern activity, we learned not only about patterns but also counting, color, how to describe an object and place items in order by size.
- I would love to do this again; my son was very interested and excited with the different activities.

## B. Symposium workshop Evaluations

- Number of evaluations: 26

Please rate the following on a scale from 1 to 5, with 1 indicating the lowest rating and 5 indicating the highest:

|   | 1 | 2 | 3 | 4      | 5      |
|---|---|---|---|--------|--------|
| Ability to keep my interest                     |   |   |   | 12.50% | 87.50% |
| Quality of handouts                             |   |   |   | 8.33%  | 91.67% |
| Quality of media                                |   |   |   | 4.17%  | 95.83% |
| Responsiveness of presenter to my needs         |   |   |   | 12.50% | 87.50% |
| Ability of presenter to motivate me to try this |   |   |   | 8.33%  | 91.67% |

### ➤ Best thing about this presentation:

- Natural things (loose parts)
- I love the scale the scale that we made.
- Staff, people, the presentation
- Everything was very good
- Cotton ten Frame
- Everything
- I really got lot of new ideas to putting in practice this coming spring and summer :)
- I enjoyed the hands on activities
- Making props to take back to the center.
- The hands-on activities. I really enjoyed myself.
- I loved the variety of the activities.
- Ideas to do outside with the kids.
- All the new ideas
- The easy way to make the balance. The great variety of nature toy ideas. I love it!
- Photos w/ examples/ideas
- Hands on activities
- Using nature fir free for kids
- All of the handouts. Making the balance!

### ➤ This presentation got me thinking about:

- Things that I could do to my back yard.
- A lot of outdoor activities for children's
- out door, nature
- Many ideas to do with children on Math& Science
- more/expand activities

- Ideas and more activities for the children's. Thank you.
- My childhood- and that's ok to encourage children get dirty & active.
- What can we do outside.
- Everything about nature, and I can do a lot think for the kid's outside
- Different ways to learn math and nature
- Outside math.
- New ideas for math night at school.
- I was inspired to have more nature materials indoor and outdoor classroom.
- Getting dirty
- Thank you
- Thank you
- Improves I have to do on my outside classroom and the benefits this will bring to my children
- How I can integrate more ideas to mix in my daycare.
- Having children spend more time outside!
- revamping my centers outdoor space
- Using & finding more nature in neighborhood.
- Extra time to explore the outdoor
- How to use the nature
- Following the tree trimmer around!

➤ **What recommendations would you make to improve the symposium for next year?**

- Teacher should speak more loud
- More activities for all year.

**C. Symposium Evaluations**

- **Number of evaluations: 28**

|  | Strongly Disagree | Disagree | Undecided | Agree  | Strongly Agree |
|--|-------------------|----------|-----------|--------|----------------|
| I was satisfied with the registration process              |                   |          |           | 15.38% | 84.62%         |
| I was satisfied with the materials (handouts)              |                   |          |           | 7.69%  | 92.13%         |
| I was satisfied overall with the speakers/presenters       |                   |          |           | 4.00%  | 96.00%         |
| I was satisfied overall with the facility (museum)         |                   |          |           | 3.85%  | 96.15%         |
| The content of the keynote was appropriate and informative |                   |          |           | 3.85%  | 96.15%         |

|  |  |  |  |       |        |
|--|--|--|--|-------|--------|
| The content of the presentation Getting the Most Out of Sorting was beneficial and informative |  |  |  |       | 100%   |
| The content of the presentation Math Talks was beneficial and informative                      |  |  |  |       | 100%   |
| Museum staff were helpful and courteous  |  |  |  |       | 100%   |
| The symposium was well organized   |  |  |  |       | 100%   |
| I would recommend this early math symposium to others  |  |  |  | 3.85% | 96.15% |

➤ **What additional presenters or session topics would you like to see in future symposiums?**

- Science, blocks, music
- Math is a great topic mixing it up with another content area!
- I would like to see idea of math in the block are more in depth.
- Math in physical science/engineering design
- More of the nature related speaker
- Reading the clock
- Science- art
- Hands on activity
- Get door activity working w/ toy nature
- Literacy & Reading

➤ **What did you like most about the event?**

- It got me to think about different materials and different ways to use them.
- The outdoor Nature classrooms & Natalia
- I liked everything about the event Hands on activities
- Hands on
- The video on the explanation of shapes and they can be used.
- Everything and Food
- Great presentation sessions
- Hands on activities and ideas
- I really liked everything
- Getting ideas
- I liked that it was small enough to feel personal,
- Search responses
- Showing 2 words and phrases

➤ **What recommendations would you make to improve the symposium for next year?**

- More hand-outs I love your Museum!
- Provide a separate session in Spanish
- For it to be earlier in the day. :)
- Could you do it in Spanish?



## Field Trips:

### A. Sets & Patterns- In School Museum Experience



### B. Measurement- Museum Focused Field Trip and Museum Exhibits



### **Childcare Provider Testimonials:**

The children did two different math activities. Once I explained the activities to the children liked the activities. The children worked on patterns and sorting different types of material. When I first introduced the activities to the children, they were very intrigued with what was in my sorting bag. The activities was done during small group, throughout the time 15 students participated and they really enjoyed it and ask to fo the pattern activity all the time. The materials that was used were two different type of manipulative toys to make patterns and different items to sort.

Lolanthe Drew  
Little Genius Community Day Care  
3-5 Year Olds  
Early Math Education Initiative Participant 2017-2018

---

Today we worked on the activity to go with Five Creatures. The children really enjoyed telling everyone who lives in their house, although I think some of them added on their extended families. After we read the story, I introduced the activity we were going to do, to go with the story.

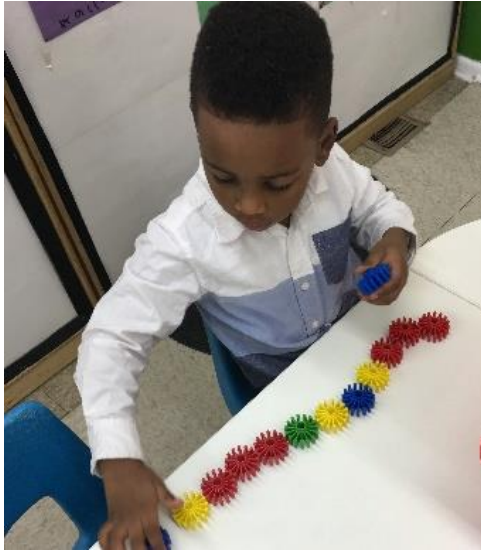
Margarette Fedak  
St. Paul Christian Day Care & Kindergarten  
3-5 Year Olds  
Early Math Education Initiative Participant 2017-2018

---

The book “Big Ideas of Early Mathematics” is a very useful book for me to introduce basic math concepts to the children. Chapter 1 of the book discusses about the “SETS”. The chapter explains binary sets, multiple sets, grouping, sorting, patterns, numbers and numerals. Children made “SETS” with the little ornaments given by the museum. They used different attributes. They were happy to sort them by color, shape and their uses. Children came to know that different attribute belong to each set. They sorted out the little rings according to their color and shape too.

Manori Hettiarachchi  
Blooming Bud Day Care Center  
3-5 Year Olds  
Early Math Education Initiative Participant 2017-2018

**Photos from Childcare Providers:**



Children explored creating patterns after reading children's picture books with underlying pattern concepts.

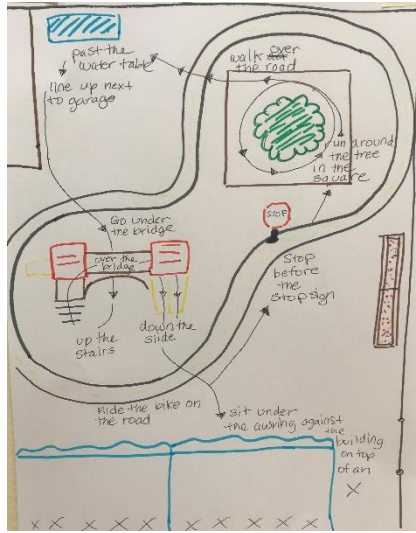
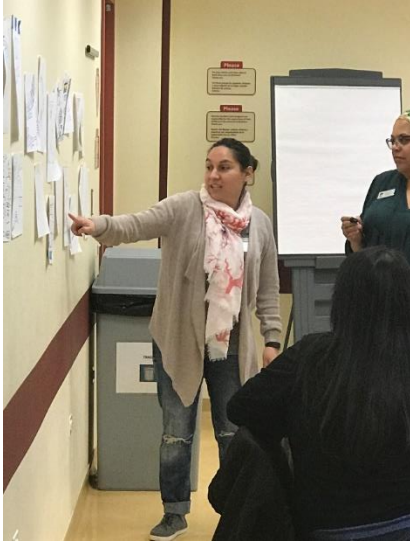


Children investigated spatial relationships and composing shapes with various boxes and blocks.

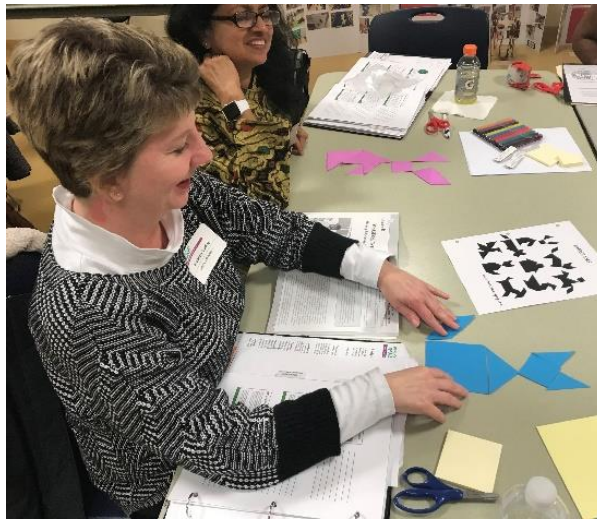


Children investigated measurement by comparing their heights and using balance scales to compare weight of a variety of objects.

## Photos from Professional Development Training:



Participants created obstacle course for children to explore spatial relationships concepts.



Participants investigated shapes and spatial relationships with a pattern blocks and tangram puzzles.



Participants worked in small groups to explore capacity with a variety of materials.

## Photos from Math Symposium 2018

, Jennifer McCray- Erikson Institute was the keynote speaker highlighting the big ideas of Shape. Had break out presentation session on **Math Learning in Nature Based Outdoor Classrooms**, facilitated by Linda Kraft family childcare provider that has a certified outdoor classroom.



Keynote speaker Jennifer McCray, Erikson Institute presented on the Big Ideas of Shape.



Linda Kraft, Family Childcare Owner facilitated a workshop titled, **Math Learning in Nature Based Outdoor Classrooms**. Participants created balance scales and explored a variety of hands-on activities inspired by nature that incorporate early math concepts.