Mathematizing Spaces
Making our Schools Math Curious Places

Molly Daley
molly.daley@esd112.org
@mdaley15

@mathanywhere
2. REGARD IN MATHEMATICAL TERMS
“All students need and deserve to experience math with **JOY** and **AUTHENTICITY**.”

- *Doing the Math Report from 100K in 10*
authenticity
Utilizing Landscapes
Sharing Attention
Prompting
LANDSCAPES

Photo by C Drying on Unsplash
“...The world is awash in details of color, form, sound- but to function we have to ignore some of it. Children sense the world at a different granularity, attending to parts of the visual world we gloss over; to sounds we have dismissed as irrelevant. What is indiscernible to us is plain to them.” - Andrea Horowitz
Review the Math Behind the Math Lookbook

1) Respond to the questions.

2) What mathematics did the children notice in their landscape?

3) What other mathematics do you notice?

QUANTITY

Shape

POSITION

SIZE
Utilizing Landscapes

- Consider what is permanent
- Consider what is temporary
- Observe what children notice and talk about
- Quantity, shape, position, size
- Notice patterns and relationships
SHARING ATTENTION
Turning children’s early and spontaneous mathematics play into an awareness of mathematical concepts and skills is at the heart of intentional teaching in this area.

1) What mathematics did these students find in their landscape?

2) What do you notice about this mathematical exchange with students?

[Image of a teacher and students with a chart]

http://prek-math-te.stanford.edu/operations/classroom-videos-operations
Sharing Attention

- Observe what children notice and talk about
- Quantity, shape, position, size
- Visit and revisit ideas
- Follow children’s lead (begin and end)
- With landscapes, there is no rush!
John Stevens @Jstevens009 · Aug 10

I was getting ready to drop a #howmany, then try interrupted me by singing. Then I wanted to do a @FractionTalks after it was cut but they were ignoring me as they ate.

I guess birthdays aren’t good for #tmwyk ’round here
On engaging...


https://developingchild.harvard.edu/science/key-concepts/serve-and-return/
Children like to play; they need to play. Their need to play with ideas is no different from their need for physical play.

-Christopher Danielson
Productive Prompts

- Equalize status and lower risk
- Create space for ideas, multiple "answers"
- Promote looking for structure, looking deeper
- Are portable & reusable (allow for sustained inquiry)
- Feel like play
- Provoke curiosity
How Many?
How Many?
How many...?
How many...?
How many...?
how many?
how many?
how many?
How Many? Conversations

- Notice Structure
- Identify Units
- Notice Unit Relationships
- Question Assumptions
  - Is that always true?
  - How do you know?

A quantity is made up of a value and a unit. Quantities can have important relationships within a shared context.
Find Shapes...
HOW-TO
Find Shapes
HOW TO PLAY:

Find Shapes at the Playground!
Find Shapes…
Same
or
different?
Same or different?
1) What prompts could you use to elicit mathematics in these spaces?

2) What permanent or semi-permanent additions might you make to these spaces to invite math thinking and doing?

Enhancing Spaces

• What math thinking, doing, & talk will this invite?
• Is there space for different ways of engaging?
• Who has access to engage?
• What messages does this send about doing math?
Final Reflection

• What are you taking away from this session?

• How do you intend to do when you return to your classroom, school, or community?
Reggio-Inspired Mathematics
A PROFESSIONAL COLLABORATIVE INQUIRY EXAMINING HOW REGGIO-INSPIRED
PRINCIPLES AND PRACTICES MAY ENHANCE THE TEACHING AND LEARNING OF MATHEMATICS

Janice Novakowski
http://janicenovkam.typepad.com/reggioinspired_mathematic/
@jnovakowski38
Turn sidewalks into math playgrounds

Sidewalk math is designed to engage young children in learning mathematical patterns by walking, hopping, jumping, and skipping through colorful designs on the sidewalk. Sidewalk Math has been collaboratively designed by math educators to build critical numbersense skills in young children, by designers to engage children in kinesthetic learning, and by early childhood educators to ensure caregivers feel confident in practicing counting and patternmaking with children.
We provoke math thinking in unexpected public places.

Public Math
https://www.public-math.org/
#publicmath
Public Math

what do you notice?
what do you wonder?
how many?
what comes next?
what repeats?
which one doesn't belong?
WOMI

about

3 triangle
4 square
drain covers
frames
magic number
pattern machines
STOP
transquarencies 1
transquarencies 2
visual patterns

what mathematics?
for whom?
for what purposes?

****

https://sites.google.com/site/womiworldwide/home
MathAnywhere!
@mathanywhere Follows you
Noticing math in everyday places. Inviting math into all kinds of spaces. #mathanywhere
mathanywhere.org Joined January 2017
15 Following 831 Followers
Followed by Patty Cawley Moore, Alisha P, and 9 others
Follow Along!