

Math, Loose Parts, and Nature, Oh My!

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What mathematical concepts did you notice on your nature walk?

How would you describe loose parts?

What does nature provide in your setting?

What concepts or ideas might you try to bring math concepts outside or nature inside?

1. Bring mathematical tools outside.
2. Bring nature inside.
3. Solve real-life problems.
4. Use math inspired books.
5. Share a math invitation.
6. Create math kits, carts, or sheds.
7. Develop an outdoor classroom.

Math Concepts—jot down a few ideas!

- Numbers and Operations
- Geometry and Spatial Reasoning
- Measurement
- Patterns and Algebraic Reasoning
- Displaying and Analyzing Data

Math, Loose Parts, and Nature--Potential Materials List

General

Craft sticks
Pipe cleaners
Apple sauce lids
Milk and other lids
Paper plates
Rope
Twine
String
Stick-lets
Golf tees
Ribbons
Pom poms of various sizes
Sticks

Tools

Magnifying glasses
Tongs
Tweezers
Mirrors
Mirror "books"
Tool apron
Markers
Variety of tape (electric, tree tagging, painters, masking, washi, etc.)

Measuring

Tape measurers
Rulers
Measuring cups
Measuring spoons

Arrays

Egg cartons (2 by 5, 2 by 6, 5 by 5)
Wooden garden trellis

Ice cube trays
Muffin tins

Numbers

Wooden number puzzles
Sumblocks
Numbered rocks
Numbered tree cookies
Numbered footsteps
Numbered tiles
Numbered calendar shapes
Dominoes
Perpetual calendar pieces
Wooden number shapes
Blank calendars
Date Books
Rummikub tiles
Large variety of dice
Dice inside dice
Wooden lawn dice
Variety of number lines
100s chart

Mark Making

Individual chalkboards
Individual white boards
Clipboards
Writing utensils
Paper
Blank hundreds charts
Graph paper
Tally sheets
Blank graph chart

Math Manipulatives

Unifix cubes

Counters

Base 10 blocks
Fraction options

Toys

Unit blocks
Keva planks/Kapla blocks
Magnatiles

Games

Game boards
Game pieces
Timers
Fake money

Containers

Numbered baskets
Divided baskets
Wooden trays
Lunch trays
Cookie sheet with lip
Recycled containers (individual applesauce/mandarin oranges)

To Make:

Ten frame
Number chart
Sammy the yard/meter snake
Stick sets in unit sizes

Printables

Tally scavenger hunts
Graph paper

Math, Loose Parts, and Nature, Oh My!—Resources

[Loose Parts Learning in K-3 Classrooms](https://www.gryphonhouse.com/books/details/loose-parts-learning-in-k-3-classrooms)

<https://www.gryphonhouse.com/books/details/loose-parts-learning-in-k-3-classrooms>

[Math, Loose Parts Nature Play Blog Post](http://insideoutsidemichiana.blogspot.com/2020/09/math-and-loose-parts-in-nature.html)

<http://insideoutsidemichiana.blogspot.com/2020/09/math-and-loose-parts-in-nature.html>

[Math, Loose Parts Nature Play Podcast Episode](https://loosepartsnatureplay.libsyn.com/math-and-loose-parts-in-nature)

<https://loosepartsnatureplay.libsyn.com/math-and-loose-parts-in-nature>

Gull, C., Bogunovich, J., Goldstein, S. L., & Rosengarten, T. (2019). Definitions of Loose Parts in Early Childhood Outdoor Classrooms: A Scoping Review. *International Journal of Early Childhood Environmental Education*, 6(3), 37-52.

https://naturalstart.org/sites/default/files/journal/6_gull_et_al_formatted_draft_v2.pdf

Resources from Juliet Robertson:

[Suggested materials for maths outdoor](#)—good list of basics to consider

[Messy Maths Handout](#)--Great content!

[Sammy the Metre Snake](#)—consider a yard snake in the US

[Messy Maths](#)—great book that goes through all mathematical domains

[Dirty Teaching](#)—general information about learning outdoors

[General suggestions for outdoor maths from NAEYC](#)—good suggestions to consider!

[Math Vocabulary](#)—terms to consider to use

[Kindergarten math vocabulary with definitions](#)

[Nature Notes](#)-- Documentation Option, p. 62-63

[Conference Presentation on Early Maths](#)—inside focused--vocabulary, activities, potential sequencing lists, etc.

[Big and Small Outdoor Action Card Prompts](#)—action prompts to explore big and small

[Math Resources and Tools on Amazon](#) (including book suggestions!)

[Mirrors for Mirror Books](#)