

Playing with Math and Science Resources

3-Dimensional Science

- [A Framework for K-12 Science Education Practices](#)

Early Childhood Math Foundations

- [Catalyzing Change in Early Childhood and Elementary Mathematics by NCTM](#)
- [Big Ideas of Early Math by Erikson Institute](#)
- [Erikson Institute's Early Math Collaborative](#)
- [Graham Fletcher](#)

Sorting

- [Challenging Young Children through Simple Sorting and Classifying: A Developmental Approach by Daniel Platz](#)
- [Preschool Math: All Sorts of Sorting! By Education.com](#)
- [Sorting and acting with objects in early childhood: an exploration of the use of casual cues by Nazzi & Gopnik](#)
- [Do You Know Which Ones Will Grow? By Susan A. Shea](#)
- [Sort it Out! By Barbara Mariconda](#)
- [Where Is My Baby? By Harriet Ziefert & Simms Taback](#)
- [Sorting Rocks with Child 32 by Erikson Institute](#)

Patterns

- [What Children Know and Need to Learn About Patterns and Algebraic Thinking by Herbert P. Ginsberg](#)
- [Cool Ways to Teach Your Preschooler About Patterns by Hank Pellisier](#)
- [Pre-K Math: Patterns by Karen Cox](#)
- [Pattern Bugs \(Math is Fun!\) by Trudy Harris](#)
- [Pattern Fish \(Math is Fun!\) by Trudy Harris](#)

Subitizing

- [Mathematics in the Early Grades: Counting & Cardinality by Interactive STEM](#)
- [Subitizing: What Is It? Why Teach It? By Douglas Clements](#)
- [Subitizing Games: Assessing Preschoolers' Understanding of Number by Macdonald and Shumway](#)
- [How Many? by Christopher Danielson](#)
- [Ten Black Dots by Donald Crews](#)

- *Math “Em All by Erikson Institute*
- *Which One Doesn’t Belong by Christopher Danielson*
- *Tiny Polka Dot*
- *Roll and Circle by Counting with Kids*
- *Dot Card Transition Activity by Erikson Institute*
- *Savvy Subitizing Cards by Building Math Minds*

Drawing

- *Helping Children Sketch and Draw From Observation by The Illinois Early Learning Project*
- *How Process-Focused Art Experiences Support Preschoolers by National Association for the Education of Young Children*
- *Elementary Supply List by The Art of Education University*
- *Observational Drawing: Observing and Reflecting Upon What One Sees by Iowa Regents’ Center for Early Developmental Education*
- *Misunderstanding Children’s Art by Rhoda Kellogg*
- *Ish by Peter H Reynolds*
- *Lines that Wiggle by Candace Whitman*
- *The Imaginary Garden by Andrew Larsen*
- *I Am NOT Just a Scribble by Diane Alber*

Loose Parts

- *Community Play Things*
- *PennState Extension: Early Childhood*
- *How Not to Cheat Children: The Theory of Loose Parts*
- *STEM Play Guide: Loose Parts Play and Tinkering*
- *Loose Parts Series by Lisa Daly*
- *Loose Parts: A Beginners’ Guide by Martin*
- *Loose Parts Play by Landscape for Learning*
- *Incorporating Loose Parts in the Early Childhood Classroom to Promote STEAM by Dr. Diana Wehrell-Grabowski*