



Mississippi Early Childhood Instructional Math Resources

$2+2=4$

Math Learning Supports by Age, Learning Domains, and Developmentally Appropriate Math Skills



Introduction

Early math education is a foundational aspect of childhood development, significantly impacting cognitive growth and long-term academic success. Research shows that early exposure to math concepts—such as counting, pattern recognition, and spatial awareness—can shape a child’s problem-solving abilities, logical reasoning, and confidence in mathematics later in life.⁷ These foundational skills prepare children for school success and are linked to improved life outcomes in terms of academic achievement and future job prospects. This report seeks to provide a comprehensive overview of the math curricula and resources currently available to children ages birth to 8 years old in Mississippi.

Math Learning Supports by Age¹

Learning Domain²: Sensory exploration, understanding of cause & effect, motor skills development, cognition

Educational Settings Implementing Curriculum & Resources⁵:

- Public & private childcare centers
- Home care settings
- Head Start programs



0 - 18 months

Math Curriculum & Resources⁶:

- Creative Curriculum
- My Mississippi Adventures*
- Building Blocks
- Mind in the Making/Vroom

Math Skills^{3,4}: Patterns, matching, shapes, sequencing, spatial relationships

Math Learning Supports by Age¹



Math Curriculum & Resources⁶:

- Creative Curriculum
- My Mississippi Adventures*
- Building Blocks
- Mind in the Making/Vroom

Math Skills^{3,4}: Sorting and classifying, patterns, matching, shapes, sequencing, numbers, spatial relationships

18-36 months

Learning Domain²: Symbolic thinking & problem-solving, increasing vocabulary, understanding simple instructions, cognition

Educational Settings Implementing Curriculum & Resources⁵:

- Public & private childcare centers
- Home care settings
- Head Start programs

Learning Domain²:

Enhanced memory & understanding of sequences, cooperative play & sharing

Educational Settings Implementing Curriculum & Resources⁵:

- Public & private childcare centers
- Home care settings
- Head Start programs

3-4 years

Math Curriculum & Resources⁶:

- MS Beginnings Curriculum
- Creative Curriculum
- My Mississippi Adventures*
- Building Blocks
- Mind in the Making/Vroom

Math Skills^{3,4}: Number sense, sorting, measurement (non-standard), comparing

Learning Domain²: Logical thinking & classification, more complex language skills & storytelling

Math Curriculum & Resources⁶:

- MS Beginnings: Pre-K
- HighScope Infant-Toddler Curriculum
- Creative Curriculum for Preschool
- My Mississippi Adventures*
- Big Math for Little Kids
- Frog Street Pre-K
- Building Blocks
- Eureka Math

Math Skills^{3,4}: Recognizing & creating patterns, counting objects up to 10 & recognizing numerals, basic measurement concepts

4-5 years

Educational Settings Implementing Curriculum & Resources⁵:

- Public and Private Pre-K programs
- Public and private childcare centers
- Home care settings
- Head Start programs

Math Learning Supports by Age¹

Learning Domain²:

Abstract thinking, problem solving, enhanced reading & comprehension skills



Math Curriculum & Resources⁶:

- Eureka Math (Kindergarten)
- Ready in Mathematics
- Bridges in Mathematics (Kindergarten)
- Creative Curriculum for Kindergarten
- Highscope Kindergarten Curriculum
- Building Blocks Math Curriculum

Educational Settings Implementing Curriculum & Resources⁵:

- Public and Private Elementary Schools

Math Skills^{3,4}: Counting beyond 20 and basic skip counting, addition & subtraction without visual aids, understanding place value

Math Curriculum & Resources⁶:

- Eureka Math (Grades 1 - 2)
- Ready in Mathematics
- Bridges in Mathematics
- Go Math!
- Highscope Elementary Curriculum



Learning Domain²:

Analytical thinking, logical reasoning, working in groups & following complex instructions

Math Skills^{3,4}: Multiplication & division basics, understanding fractions & simple decimals, solving word problems using basic math operations.

Educational Settings Implementing Curriculum & Resources⁵:

- Public and Private Elementary Schools

Learning Domain²:

Critical thinking, hypothesis testing, advanced vocabulary & complex sentence structures



Math Curriculum & Resources⁶:

- Eureka Math (Grades 2 - 3)
- Ready in Mathematics
- Bridges in Mathematics (grades 2 - 3)
- Go Math! (Grades 2 - 3)
- Highscope Elementary Curriculum

Educational Settings Implementing Curriculum & Resources⁵:

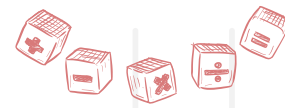
- Public and Private Elementary Schools

Math Skills^{3,4}: Advanced addition, subtraction, multiplication & division, understanding more complex fractions & decimals, basic geometry concepts

Note:

*** My Mississippi Adventures is in development as of September 2024.**

Discussion



Early math education is a crucial component of cognitive development, influencing a child's future academic success and life outcomes. Numerous studies have shown that early exposure to foundational math concepts, such as counting, pattern recognition, and spatial awareness, significantly enhances a child's problem-solving abilities and logical reasoning.⁸ These early skills set the stage for future competence in mathematics, which is not only linked to success in school but also to broader life outcomes, including career prospects and financial literacy.⁹





In Mississippi, the implementation of early math curricula has made strides in reaching young learners across various educational settings. Programs such as Eureka Math, Bridges in Mathematics, and Creative Curriculum are widely adopted across Early Learning Collaboratives (ELCs), Head Start programs, and public schools. These curricula are aligned with Mississippi Early Learning Standards, ensuring that children receive developmentally appropriate instruction in math from an early age.¹⁰

Despite these efforts, there remain challenges, particularly in rural and underserved communities where access to high-quality math resources may be limited. Additionally, while Mississippi's adoption of research-based curricula has improved educational outcomes, there is still room for enhancing collaboration between providers and ensuring that math interventions are tailored to the needs of all students.⁸

Recommendations

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The following recommendations are aimed at enhancing the effectiveness and accessibility of early math education across Mississippi. They build on the current resources and curricula already in place, while addressing potential gaps in accessibility. By focusing on expanding access, strengthening interventions, encouraging collaboration, and incorporating play-based learning, these recommendations seek to ensure that every child, regardless of background, has the opportunity to develop foundational math skills that will serve them throughout their academic journey and beyond.

-  **Expand Access to High-Quality Math Resources:** While there is substantial coverage of math supports across the state, it's important to ensure that rural and underserved areas receive equal access to high-quality math curricula and resources. For example, the Building Blocks Pre-K Math Curriculum has been successfully implemented in many regions across the state, providing significant value to early learners. However, there are regions, particularly in rural areas, where access to such high-quality math resources remain limited.⁶ Expanding professional development for educators in these areas could also enhance the quality of math instruction.⁸
-  **Strengthen Early Math Interventions:** Research suggests that early math skills are a predictor of later academic success.⁸ Implementing targeted interventions for children who may be struggling with foundational math concepts can prevent gaps from widening as they progress through their education.
-  **Enhance Collaboration Among Providers:** Greater collaboration between different educational settings, such as ELCs, Head Start programs, and public schools, can create a more cohesive learning experience for children. Sharing best practices and resources between these programs can strengthen early math instruction statewide.¹⁰
-  **Incorporate Play-Based Learning:** Continuing to integrate play-based learning strategies, particularly in early childhood settings, can make math more accessible and engaging for young learners. Play-based activities help children grasp abstract math concepts in a way that is enjoyable and developmentally appropriate.⁹

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