

2025 Edition

The Mississippi

EARLY MATH RESOURCE GUIDE

For Educators and Families

supporting math learning from birth to age 8



An Initiative of the Systems Change Lab
Social Science Research Center



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KELLOGG
FOUNDATION



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Introduction



About This Guide

The Early Childhood Math Resource Guide is a practical, easy-to-use tool that helps educators, families, and community partners support children's math learning from birth through second grade. It was developed to show how math begins early—and how everyday moments can be powerful learning opportunities.

This guide draws on research-based strategies from the U.S. Department of Education's Institute of Education Sciences (IES) What Works

Clearinghouse Practice Guide, [**Teaching Math to Young Children**](#).

It adapts these evidence-based recommendations to align with Mississippi's Early Learning Standards (Infants through Pre-K) and the Mississippi College- and Career-Readiness Standards (CCRS) for Mathematics (Kindergarten–Grade 2).

The content is structured to support instructional planning and implementation through developmental guidance, instructional strategies, and ready-to-use ideas. It is grounded in what research shows works best—and built with real-world early learning settings in mind.



Who This is Guide For

This guide is intended for early childhood educators, caregivers, family support professionals, and advocates working with children from birth through age 8 in Mississippi.

It is especially relevant across a wide range of early childhood settings, including:

- Licensed child care centers and family child care homes
- Head Start and Early Head Start programs
- Early Learning Collaboratives (ELCs)
- Public and private Pre-K classrooms
- Early elementary schools (Kindergarten–Grade 2)
- Resource & Referral Centers (R&Rs)
- Early intervention, home visiting, and family engagement programs

This guide supports a diverse group of professionals—such as child care staff, early interventionists, Head Start teachers, public Pre-K providers, and early elementary educators—by offering:

- Practical ways to embed math into daily routines and play
- Flexible strategies that support inclusive learning needs
- Developmentally grounded guidance aligned with state standards
- Real-life examples and enrichment resources for classrooms and homes

Children learn best when families and educators work together. This guide is designed to support that partnership—treating both groups as co-teachers in helping children explore and understand math across settings.



What's Inside This Guide

This guide is organized by age groups so users can follow how math skills grow across stages. Each section builds on the one before and offers practical strategies grounded in developmental research and aligned with Mississippi's Early Learning Standards.

Each age group section includes:



Developmental Snapshot

How children at this stage typically engage with math



Core Math Concepts

Key skills grounded in developmental research and aligned to MS standards



Instructional Strategies, Tools, and Materials

Guidance for educators, families, and inclusive supports



Suggested Materials

Everyday and classroom-friendly items to support hands-on learning



Real-Life Math Moments

Examples of how to embed math into play and routines



Math Talk Examples

Sample vocabulary and prompts to build math language



Try This

Mini-prep activities for classrooms and home settings



Enrichment Resources

Aligned online tools, lesson links, and printable extensions



Progress Monitoring

Informal strategies to observe and respond to learning



Sample Lesson with Planning Guidance

A built-in example and support tool to help you create your own math lesson



What's Inside This Guide

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Each section also includes a "Looking Back" summary to highlight the skills and concepts explored in the previous age band, helping you understand how current learning builds on earlier experiences. It closes with a "What's Ahead" preview to show what children will typically explore next—offering developmental context and continuity across age groups and settings.

Each section is designed to be self-contained and flexible—whether you're printing a single age band for families, multiple bands for teachers, or the full guide for coaching and professional development.



Age Groups Covered

The guide is divided into seven age-based sections, allowing users to find developmentally appropriate math strategies based on where a child is on their learning journey. Each section builds conceptually on the one before and offers flexibility to support children's individual growth and learning pace.



Ages 0-18 Months

Exploring math through movement, routine, and sensory play



Ages 18-36 Months

Stacking, sorting, matching, and noticing quantity



Ages 3-4 Years

Making patterns, comparing sizes, and recognizing shapes



Ages 4-5 Years

Building number sense, extending patterns, and exploring more or less



Ages 5-6 Years

Beginning addition, measuring, and using math to solve simple problems



Ages 6-7 Years

Solving problems, using number strategies, and comparing with tools



Ages 7-8 Years

Working with data, operations, and real-world math applications



Using This Guide Step-by-Step

1. Select an age group

Go to the section that matches the child's age or developmental level. Each section is color-coded and labeled clearly by age.

2. Read the Developmental Snapshot

Use it to understand how children at this stage typically learn through play, exploration, and routine.

3. Focus on Core Math Concepts

These concepts provide the "why" behind the strategies—highlighting what children are naturally ready to explore.

4. Choose Strategies that Match Your Role

Each section includes strategies for educators, caregivers, and inclusive supports.

5. Try a few activities and observe

Use the "Real-Life Math Moments" and "Try This" sections to spark engagement. Watch how children respond and build on those moments.

6. Incorporate Math Talk

Use the language examples to model early math vocabulary. Pair them with gestures or visuals to support understanding.

7. Use Enrichment Resources as needed.

Explore the optional tools, printables, or online links to deepen or reinforce learning.

8. Build Your Own Lesson

At the end of each age band, there is a sample lesson with built-in guidance to help create your own math activity using the strategies and materials from that section.



Helpful Reminders Before Beginning

Before beginning, keep these foundational ideas in mind.

Skills Repeat, but Mastery Evolves

You may notice similar math skills across multiple age sections. That's intentional. What changes over time is a child's level of independence, flexibility, and depth of understanding. Mastery is not expected at each stage.

Everything Must Be Taught

Even skills that seem simple—like pointing, counting, or sorting—need to be explicitly taught. Don't assume children already know them. Every child benefit from repetition, modeling, and guided practice.

Adapt Strategies to Fit Your Child

There's no one-size-fits-all approach. Pay attention to what the child enjoys or finds meaningful. For example, a child may be more engaged in sorting socks than plastic bears—and both are equally valid.

Standards Are Not Milestones

Learning standards describe what children should be taught. They are different from developmental milestones, which describe what most children tend to do at a given age. Use both as guides but follow the child's pace.

Guiding Principles to Keep in Mind

Use these simple cues to support learning throughout the day:

- Follow the child's lead
- Teach through everyday moments
- Offer choices
- Repeat concepts often
- Adapt based on the child's needs and strengths





AGES

0-18 MONTHS

Exploring with senses,
discovering cause and
effect, and building early
spatial awareness

In This Section

This section provides developmentally appropriate math resources for children ages 0 – 18 months.

Developmental Snapshot

How children in this stage typically engage with math

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Core Math Concepts

Key math ideas aligned with Mississippi's Early Learning Standards

[Go to section >](#)

Instructional Strategies, Tools, and Materials

Practical guidance for educators, caregivers, and inclusive learning

[Go to section >](#)

Suggested Materials

Everyday objects and learning tools to support math exploration

[Go to section >](#)

Real-Life Math Moments

Ways to embed math into daily routines, transitions, and play

[Go to section >](#)

Math Talk Examples

Sample phrases to build vocabulary and support math thinking

[Go to section >](#)

Try This

Ready-to-use activities for classrooms and home settings

[Go to section >](#)

Enrichment Resources

Tools, printables, and links to extend learning

[Go to section >](#)

Curriculum and Implementation Supports

Commonly used Pre-K curricula and educator development tools

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Sample Lesson with Planning Guidance

A model lesson with prompts to help you create your own

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What's Ahead

A look at what children typically begin to explore in the next stage

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Developmental Snapshot

Even in the first year of life, babies are starting to build early math skills.

They explore the world by touching, reaching, and moving toward objects, which helps them begin to understand space and shape. Through daily routines like diaper changes, feeding, and play, babies start to notice simple patterns and get used to the order of things. They also begin to notice when something is added or taken away, which lays the foundation for understanding numbers. These everyday experiences help babies make sense of the world and begin to build the thinking skills that support early math learning.

Why This Stage Matters

Although it may not look like traditional math, the simple routines and interactions babies experience every day are shaping how they think and learn. Early math learning happens when caregivers talk, play, and respond to babies in ways that help them notice patterns, compare objects, and make sense of cause and effect. These early moments are more than just playing. They help build the brain connections needed for problem-solving, number sense, and memory.

By supporting math thinking in the earliest years, caregivers set the stage for children's future confidence and success in school.

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Core Math Concepts

These early math concepts do more than build number sense. They also help babies develop memory, attention, problem-solving, and the ability to compare and predict. When caregivers and educators talk, play, and explore with babies, they're helping shape the brain pathways that support lifelong learning in math and beyond. Here are some of the early math ideas babies start to explore from birth to 18 months:

- **Noticing what's more or less** – Babies may look surprised when a toy disappears or when more are added.
- **Understanding simple patterns** – Daily routines (like feeding after naps) help babies recognize what happens first, next, and last.
- **Developing spatial awareness** ⓘ – Babies learn about distance, direction, and position as they reach for toys, track objects with their eyes, or crawl toward something across the room. These early movements help build an understanding of where things are in space.
- **Playing with size and shape** – Babies grab, mouth, and bang objects, to learn how things feel and fit together.
- **Cause and effect** – Shaking a rattle or dropping a spoon teaches that one action leads to another.
- **Object permanence** ⓘ – Babies start to understand that things still exist, even if they're out of sight like playing peek-a-boo or hiding a toy under a blanket.

These early experiences might not look like math, but they help babies develop the mental building blocks they'll use for counting, comparing, and problem-solving later on.

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For reference to full Mississippi Early Learning Standards, visit:

[Mississippi Department of Education Early Learning Standards \(2018\)](#) ↗



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Instructional Strategies, Tools, and Materials

Babies learn through doing—by seeing, touching, hearing, and moving. These are simple ways educators and families can support early math thinking through play, routines, and exploration. Inclusive strategies and common materials are included to make math feel natural and accessible for every child.



Educators

- Use simple math talk during routines like diapering or snack time ("You have two wipes. One, two!")
- Offer toys that encourage exploration, like soft blocks or nesting cups
- Use songs with patterns (e.g., clapping, bouncing, peek-a-boo) to build early rhythm and sequencing
- Repeat actions and phrases often. Babies learn through repetition and predictability



Families & Caregivers

- Count out loud during everyday moments like getting dressed or picking up toys
- Compare sizes of household items ("This spoon is big. This one is little.")
- Let babies drop, fill, and dump items from containers to explore cause and effect
- Name what your baby sees and does ("You grabbed the red ball!")

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Inclusive Supports

Use high-contrast images for babies with visual differences

Support playing on the floor by adapting seating or cushions as needed

Offer toys with a variety of textures, weights, and sounds

Reinforce math talk with gestures, facial expressions, or visual cues



Suggested Materials

- Soft stacking blocks
- Rattles and sensory balls
- Mirrors (baby-safe)
- Nesting cups and containers
- Scarves or fabric swatches for peek-a-boo
- High-contrast picture cards
- Music with rhythms or fingerplay songs
- Everyday objects like lids, spoons, and socks

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Real-Life Math Moments and Activities

Math learning happens naturally when adults engage with babies during everyday care, play, and routines. Encourage language that connects real-world experiences to math vocabulary and symbols.

These moments don't require special materials. Babies just need your attention, language, and encouragement.



Educators

- Count fingers and toes during diaper changes or greetings
- Use stacking or nesting toys to explore size, order, and balance
- Let babies reach for toys placed at different distances to build spatial awareness
- Incorporate pattern-based songs during group time (e.g., bounce, clap, bounce, clap)



Families & Caregivers

- Compare items during mealtime ("You have more peas than carrots")
- Explore sequences during bath time ("First we wash your hands, then your feet")
- Set up containers for dropping and dumping games
- Play peek-a-boo using toys or scarves to build object permanence

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Real-Life Math Moments and Activities

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Inclusive Supports

Use consistent matching routines (e.g., always two socks, one for each foot)

Use yes/no cards or gestures to check for engagement and preferences

Provide adapted grip-friendly toys for babies developing fine motor skills

Create small-group floor time for individualized interaction



CAREGIVER TIP: Use real objects and actions when you talk. Babies understand best when they can *see*, *touch*, or *hear* what you're describing.

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“ Math Talk Examples

Talking to babies about what they see, do, and feel helps them build early thinking skills which includes the foundations of math. Even if babies can't talk yet, they're always listening and learning from your words, tone, and facial expressions.

Use simple math words during routines, play, and transitions.

Here are a few examples, grouped by concept:



Number and Quantity

“ You have two socks. One, two!

“ You ate one cracker. Now there's one left.

“ Let's count your toes! One, two, three...



Size and Comparison

“ This block is **bigger** than that one.

“ Let's find the **smallest** cup.

“ That bear is **heavier**. Can you lift it?



Shape and Matching

“ That's a **round** ball and it rolls!

“ This one has **corners** so it's a square.

“ Let's find two that **look the same**.

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Spatial Language

“ Let's put the cup **on top** of the box.

“ Your toy is **under** the blanket. Can you find it?

“ You rolled over and now you're **next to** the ball!

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Patterns and Routines

“ Clap, clap, and stomp. Can we do it again?

“ First we get dressed, then we go outside.

“ We always sing this song after your nap!



CAREGIVER TIP: Babies don't need to understand every word. You're helping them make connections by pairing language with actions. Over time, this helps build vocabulary, memory, and math confidence.



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Try This

Babies don't need worksheets or formal lessons to learn math. They learn best through play, movement, and interaction. These simple, low-prep activities support early math thinking while strengthening relationships and curiosity.

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Peek-a-Boo Counting

Cover your face or a toy with a cloth and count: "One, two, three... peekaboo!". Repeat with pauses and expression to build anticipation, memory, and pattern recognition.

Stack & Knock

Use soft blocks or nesting cups. Stack a few and let the baby knock them down. Count out loud as you build ("One block, two blocks...") to introduce number language.

More or Less

Offer one item (e.g., a cracker), then another. Ask: "Do you want more?" or "Which hand has more?" This helps babies start noticing quantity and comparison.

Drop Zone

Let babies drop small, safe items into a container and dump them back out. Say: "In it goes!" or "You dropped it—now it's gone!" to support cause-and-effect and spatial awareness.

Tummy Time Tracking

Place toys or images to the left and right of the baby. Encourage head turning or reaching. Use words like "beside," "far," or "close" to introduce spatial language naturally.



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Progress Monitoring: Observing Development and Knowing When to Ask for Help

Babies grow and learn in many different ways and at their own pace. There's no one "right" timeline. Still, it's important to watch how babies interact with people, objects, and routines. These everyday moments offer clues about how they're learning and thinking.

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What to Look For:

- Does your baby respond to your voice or facial expressions?
- Do they track moving toys or try to reach for things?
- Are they starting to notice when objects disappear or change?
- Do they explore with their hands, mouth, or eyes?
- Do they show interest in repetition like dropping a toy or hearing a song again?

These early actions help build memory, attention, and early math thinking.

What to Do if You're Concerned:

All babies develop differently, but if something doesn't feel right, it's okay to ask questions or seek support. Trust your instincts.

Here are some steps you can take:

- Talk with your child's teacher or program director
- Contact your local Early Intervention program for a free developmental screening



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- Reach out to a Family Resource Center or [Resource & Referral Center](#) in your area
- Ask your pediatrician if a screening or referral would be helpful

Getting support early can make a big difference and you don't need to wait for a diagnosis or concern to start the conversation.



CAREGIVERS: You are your child's best advocate. Trust your instincts and don't wait to ask questions or request help.

Want Help Tracking Development?

- Try the CDC's [Learn the Signs. Act Early.](#) tools. These free checklists and resources help families and caregivers know what to look for and when to take action.
- [View milestones for birth to 1 year](#)
- Download the free CDC Milestone Tracker App
- Printable checklists and tips in English and Spanish



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Enrichment Resources by Core Math Concept

These tools and activities offer easy ways to support early math skills through exploration, songs, movement, sensory play, and everyday routines.



Number Sense and Awareness

→ **Math in the Bath - NAEYC**

Simple and fun activities to explore math with infants and toddlers.

→ **Two Little Butterflies Finger Play Activity and Video - LTLT**

During this finger play game, children will learn about the numbers one and two.

→ **Number Peekaboo - LTLT**

A fun video activity that builds infants' and toddlers' sense of numbers.

→ **Counting Books - LTLT**

An activity that helps build early counting concepts. Also, see the recommended list of early childhood math books.



Patterns & Routines

→ **Brain Building Through Back-and-Forth Interactions**

- Vroom

Sign up for Vroom's free app and website for daily prompts that encourage turn-taking, pattern-building, and repetition which are perfect for routines like diaper changes, feeding, or playtime. Many tips are designed for infants and include pattern-rich language and gestures.

→ **Exploring Math with Infants and Toddlers - HeadStart**

A video and additional resources on math concepts during daily routines and interactions.

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Shapes and Spatial Awareness

→ **A Variety of Infant Lesson Plans - Early Math Counts**

Numerous lessons that teach infants where things are in space through reaching, dropping, and observing. It includes tips for fostering spatial vocabulary (in, on, under) through play and everyday routines.

→ **Reaching, Rolling, and Crawling: Learning Spatial Relationships – Vroom**

A collection of Vroom tips that support spatial awareness through movement. Includes simple prompts like, "Can you roll to the ball?" or "Let's reach for the cup that's far away." *Note: Requires free registration. Search "spatial" or "movement" for related tips.*



Curriculum & Implementation Supports

This resource guide is designed to complement a variety of early childhood math curricula used across Mississippi. While not tied to any single program, it reinforces foundational math skills and practices common to many Pre-K classrooms. Below are examples of curricula commonly used with 4- and 5-year-olds, along with resources that support implementation.

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Commonly Used Curricula (Infants and Toddlers)

This resource guide is designed to complement a variety of infant and toddler programs that are accessible in early learning environments across Mississippi. Below are examples of commonly used curricula and professional development tools that support math learning in the earliest years.

→ [Creative Curriculum for Infants, Toddlers & Twos](#) ↗

Emphasizes responsive caregiving, sensory-rich routines, and exploratory play. Math is woven into daily caregiving experiences like diapering, feeding, and shared floor play.

→ [HighScope Infant-Toddler Curriculum](#) ↗

Focuses on active learning and consistent routines. Supports early math through movement, repetition, object exploration, and caregiver interactions.

→ [Vroom](#) ↗

A free app and website offering science-backed tips that turn everyday moments into brain-building opportunities. Many prompts support comparison, quantity, and routines using math-friendly language.

→ [Mind in the Making \(MITM\)](#) ↗

A framework focused on building executive function skills, including attention, persistence, and memory, through everyday caregiver-child interactions. Math readiness is supported by building these cognitive skills.



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→ [**Erikson Early Math Collaborative – Infants and Toddlers Collection**](#)

Videos and activity guides showing how math learning emerges through simple, everyday actions in the infant-toddler years.

→ [**DREME Network – Family Math and Early Math Resources**](#)

Offers practical math supports for families and educators, including ideas for integrating math into play and routines for very young children.

→ [**Mississippi Department of Education – Office of Early Childhood**](#)

Provides statewide support for implementing high-quality early learning programs, including curriculum alignment and professional development.

General Caregiver Support Tools

→ [**Erikson Early Math: Infants & Toddlers Collection**](#)

Video examples and guidance for caregivers exploring math with the youngest learners.

→ [**The Baby Brain Map**](#)

The Baby Brain Map is a developmental tool that offers practical strategies to support healthy growth and emotional well-being based on early brain science.



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Sample Lesson Plan and Guidance

This lesson will reflect how infants explore early math concepts like object permanence, cause and effect, and spatial awareness through simple, hands-on play.

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It will include:

- A clear lesson title
- A focus on an appropriate math concept
- An easy-to-follow objective
- Materials, instructions, vocabulary, what to observe, and extension ideas
- Aligned Mississippi Early Learning Standards.

Lesson Title

Exploring “In and Out” with Containers

Provide a clear title that reflects the math focus of your lesson and communicates the type of activity you’re leading.

Target Math Concept(s)

Spatial awareness, object permanence, and quantity awareness

Choose a concept from the Core Math Concepts for this age band that reflects the skill or idea you want to teach.

→ See Section: Core Math Concepts



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Sample Lesson Plan and Guidance

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Objective

Babies will explore the ideas of “in” and “out” by placing and removing objects from containers, strengthening their understanding of location, movement, and object permanence.

Write an objective that describes what children should be able to do or understand by the end of the lesson.

→ See Section: Progress Monitoring

Materials Needed

- Plastic bowls, nesting cups, or soft bins
- Small soft toys, balls, or baby-safe household items
- Optional: light scarves or sensory items to hide and reveal

List materials that are accessible and engaging.

→ See Section: Suggested Materials

Instructions

1. Sit on the floor with the baby and show them a small object.
2. Place the object in a container while saying, “In it goes!”
3. Dump it out or let the baby remove it while saying, “Out it comes!”
4. Repeat several times, switching containers or items.
5. Hide a small object under a scarf or inside a cup.
Ask, “Where did it go?” then reveal it.
6. Encourage the baby to try putting the object in or taking it out.

Describe the steps you will follow. You can adjust the number of steps or level of challenge based on your group’s needs.

→ See Section: Instructional Strategies



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Sample Lesson Plan and Guidance

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Vocabulary to Use

In, out, more, where, gone, found, again, inside

Identify 3–5 math words or phrases to introduce or reinforce.

→ See Section: Math Talk Examples

What to Look For

- Does the baby try to reach into or dump out the container?
- Do they show excitement or curiosity when something reappears?
- Are they repeating the action or looking for hidden items?
- Do they track where objects go with their eyes or hands?

These are indicators of learning you might observe. They can guide your decisions about whether to **scaffold** , reinforce, or extend the concept.

→ See Section: Progress Monitoring

Extension Ideas

- Use clear containers to help babies visually track the objects
- Add scarves or lids to vary the experience
- Use spatial words during diaper changes, clean-up, or feeding ("Let's put the wipe in the bin")

Add follow-up options that help reinforce or extend the skill.

→ See Section: Enrichment Resources

Mississippi Early Learning Standards:

- **MELS.IT.1** – Uses senses and motor actions to explore objects
- **MELS.IT.2** – Explores spatial relationships through movement and play
- **MELS.IT.3** – Begins to understand object permanence
- **MELS.IT.6** – Shows curiosity about people and things



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→ What's Ahead: 18 – 36 Months

As babies grow into toddlers, their bodies and brains are changing quickly and so are their math capabilities.

You'll start to see children:

- Begin sorting by simple features like size or color
- Use gestures or early words to express "more," "all gone," or "big"
- Imitate patterns in songs, clapping, or stacking
- Follow short sequences like "first snack, then outside"
- Explore comparing objects (e.g., "this one is heavy!")

In the toddler years (18–36 months), children build on the sensory exploration and routines they experienced as babies. With more movement, language, and independence, math becomes more intentional even though it still happens through play, not worksheets.

The next stage will focus on supporting toddlers as they begin to sort, match, compare, and explore quantity and position more actively.

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Links

Core Math Concepts at This Stage



Early Learning Standards (2018) – Mississippi Department of Education

Progress Monitoring



CDC's Developmental Milestones



Resource & Referral Centers – Mississippi Department of Human Services

Enrichment Resources by Core Math Concept



Math in the Bath - NAEYC



Number Peekaboo - LT LT



Counting Books - LT LT



Brain Building Through Back-and-Forth Interactions – Vroom



Exploring Math with Infants and Toddlers - HeadStart



A Variety of Infant Lesson Plans - Early Math Counts



Reaching, Rolling, and Crawling: Learning Spatial Relationships – Vroom

Links

Curriculum and Implementation Supports



Vroom



Mind in the Making (MITM)



HighScope Infant-Toddler Curriculum



Creative Curriculum for
Infants, Toddlers & Twos



Infants & Toddlers
Collection - Erikson
Early Math



The Brain Baby Map



AGES

18-36 MONTHS

Building number sense, early counting, exploring patterns, and shape awareness

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This section provides developmentally appropriate math resources for children ages 18 – 36 months.

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How children in this stage typically engage with math

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Core Math Concepts

Key math ideas aligned with Mississippi's Early Learning Standards

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Practical guidance for educators, caregivers, and inclusive learning

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Developmental Snapshot

Toddlers between the ages of 18 and 36 months are constantly moving, walking, climbing, stacking, sorting, and exploring just about everything in their environment.

Because of their growing curiosity and budding independence, they can be quite a challenge to keep up with at this stage. Their thinking and language skills begin to expand as well. They begin to count out loud, identify quantities in small groups, compare sizes, while beginning to understand basic patterns and sequences. They also start using symbolic thinking like pretending a block is a phone as well as show stronger memory and attention spans. These milestones are critical for developing basic math concepts such as number sense, classification, and spatial reasoning.

Why This Stage Matters

During this period of rapid brain development, toddlers are learning how to organize, compare, and interpret the world around them. Interacting with children in everyday activities is how math learning happens at this stage. Caregivers can nurture this growth by asking questions, using math language, and encouraging problem-solving during play. These experiences help toddlers develop confidence, persistence, and reasoning skills that prepare them for more formal learning in preschool and beyond.

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Core Math Concepts at This Stage

Toddlers are ready for more intentional math exploration while still learning primarily through play and everyday experiences. Here are the key mathematical concepts children typically begin to explore between 18 to 36 months.

- **Early counting and number recognition** – Beginning to say number words in sequence, even if not always accurately, and starting to understand that numbers represent quantities
- **Sorting and classifying** – Grouping objects by color, size, shape, or function (“All the red blocks go here”)
- **Comparing quantities and sizes** – Using words like “more, less, bigger, or smaller” and beginning to make visual comparisons.
- **Pattern recognition and creation** – Noticing and extending simple patterns in songs, movements, and object arrangements
- **Shape awareness** – Identifying and naming simple shapes like circles, squares, and triangles during everyday activities, books, toys, and the environment
- **Spatial relationships** ⓘ – Understanding positional words (on, under, beside, inside) and how objects relate to each other in space
- **Measurement concepts** - Exploring length, weight, and capacity through filling, pouring, and comparing objects
- **One-to-one correspondence** – Beginning to match objects in pairs and understand that each object gets counted once

These concepts develop through active exploration, repetition, and responsive interactions with caring adults. Toddlers learn best when math is embedded in meaningful contexts rather than isolated lessons.

For reference to full Mississippi Early Learning Standard, visit:

[Mississippi Department of Education Early Learning Standards \(2018\)](#) ↗

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Instructional Strategies, Tools, and Materials

Toddlers learn best through active exploration, repetition, and hands-on discovery. They need opportunities to touch, move, sort, and experiment with materials while hearing rich mathematical language from caring adults. These strategies support math learning while honoring toddlers' developmental needs for movement, choice, and independence.



Educators

- Use concrete materials that toddlers can manipulate, sort, and explore (e.g., blocks)
- Provide multiple opportunities for the same concept. Toddlers need lots of repetition to internalize new ideas
- Follow the child's interests and extend their natural curiosity with math language and questions
- Create predictable routines that include counting, sorting, or comparing as natural parts of the day
- Offer choices during math activities to support developing autonomy
- Use movement and music to reinforce math concepts through songs, fingerplays, and active games.



Families & Caregivers

- Count everyday objects during routines (steps, crackers, socks, toys)
- Use math language during play ("You built a tall tower!")
- Create simple patterns with household items or during daily activities
- Let toddlers help with measuring during cooking or other activities
- Point out shapes and numbers in the environment during walks or errands

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Instructional Strategies, Tools, and Materials

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Inclusive Supports

Provide materials with various textures, sizes, and weights for different sensory preferences

Respect cultural diversity by incorporating familiar objects and multiple languages when possible

Offer activities at different complexity levels so all children can participate successfully

Use visual supports like picture cards or simple charts to reinforce concepts

Support communication with gestures, signs, or visual cues alongside verbal math language

Adapt activities for different physical abilities (floor play, table work, standing activities)



Suggested Materials



Manipulatives

- Stackable blocks or interlocking bricks
- Shape sorters and chunky puzzles
- Nesting and stacking cups



Visual & Sensory Tools

- Books with counting, patterns, or shapes
- Textured or weighted toys
- Matching cards (colors, animals, shapes)



Everyday Math Items

- Socks for matching or comparing
- Measuring cups and spoons
- Toy food or dishes for pretend play and counting



Music & Movement

- Fingerplay songs
- Action songs that include numbers or directions

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Real-Life Math Moments and Activities

Toddlers are constantly learning through daily routines, active play, and experiences with adults.

These moments are perfect opportunities to explore math ideas such as quantity, shape, sequence, and comparison. When caregivers talk about what they see, ask questions, and encourage toddlers to try things on their own, they help build math confidence and curiosity. Most of all, special tools or preparation are not required—just attention, language, and engagement through playful activities.



Educators

- **Snack time counting:** Count crackers, fruit pieces, or napkins as you distribute them
- **Clean-up sorting:** “Let’s put all the blocks in this bin and all the books on the shelf”
- **Transition patterns:** Create clapping or movement patterns while waiting or moving between activities
- **Outdoor exploration:** Compare sizes of leaves, count flowers, or create patterns with natural objects
- **Art activities:** Sort crayons by color, compare paper sizes, or create pattern paintings



Families & Caregivers

- **Getting dressed:** Count buttons, compare sock sizes, or sort clothes by color
- **Grocery shopping:** Count items as you put them in the cart, compare sizes of fruits, name shapes of packages
- **Bath time:** Fill and dump containers, compare water levels, count bubbles
- **Bedtime routines:** Count stuffed animals, arrange books by size, or create movement patterns
- **Car rides:** Count red cars, identify shapes in signs, or create clapping patterns with songs

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Real-Life Math Moments and Activities

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Inclusive Supports

Offer adapted or grip-friendly tools for sorting, stacking, and counting

Create quiet or small-group spaces where children with sensory needs can focus and engage

Provide multiple ways to show understanding (pointing, moving, vocalizing, choosing)

Use consistent routines that help all children anticipate and participate in math moments

Use familiar objects and contexts that connect to children's home experiences

Support communication differences with visual cues, gestures, or alternative communication methods

Adapt timing and pacing based on individual children's attention spans and energy levels



CAREGIVER TIP: Follow the child's lead! If a toddler is interested in stacking blocks, that's a perfect time to introduce counting, comparing heights, or talking about balance. The best math learning happens when it builds on what children are already curious about.

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“ Math Talk Examples

Toddlers are rapidly developing language skills and can understand much more than they can express.

Using rich mathematical language during everyday interactions helps build vocabulary, mathematical concepts, and thinking skills. Even if toddlers can't repeat the words yet, they're absorbing the language patterns and meanings.

Use clear, simple language and invite toddlers to respond, even if they are still learning to talk. Here are a few examples, grouped by concept:



Size and Comparison

“

This box is too small for all the toys. We need a bigger one.

“

Does this cup or that cup have more water?

“

You're getting taller! You used to be shorter than this table

“

That's the smallest ball. Can you find the biggest one?"



Sorting and Classifying

“

All the red ones go together. All the blue ones go together.

“

These are the round ones. These have corners so they're squares

“

Let's put all the cars in this box and all the animals in that one.

“

Which ones are the same? Which one is different?



Patterns and Sequences

“

Red, blue, red, blue... what comes next?

“

First we wash our hands, then we eat a snack, then we play outside.

“

Clap, clap, stomp! Can you do it again? Clap, clap, stomp!

“

You always put your shoes on after your socks. That's the right order!

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“ Math Talk Examples

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Spatial Relationships



The ball rolled under the table. Can you get it?



Let's put the book on top of the shelf.



You're standing beside your friend.



Is the toy inside the box or outside the box?



Number and Counting



One step, two steps, three steps up!



You have two crackers. Let's count them: one, two!



How many blocks are in your tower? Let's count together.



You put on one sock. Now you need one more to match!



Shapes and Geometry



That plate is round like a circle



The window has four corners. It's a rectangle!



Can you find something else that's the same shape as this ball?



Look at all the triangles on your shirt!



CAREGIVER TIP: Don't worry if toddlers don't respond with the "right" answer or any words at all. They're listening and learning from your mathematical language. By talking and describing what you see them doing, you're building their math vocabulary and thinking skills.

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Try This—Everyday Activities That Build Math Skills

Toddlers learn math best through hands-on exploration and play. These activities use simple materials and can be adapted based on individual children's interests and developmental levels. Remember that the process is more important than any "correct" outcome.

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Sorting Treasures

Collect safe household items or natural objects in a basket. Let toddlers sort them by color, size, texture, or type. Start with just two categories and add more as children show interest.

Tower Counting

Build towers with blocks, cups, or boxes. Count each piece as you add it: "One block, two blocks, three blocks—oh, it fell down! Let's count again." Let toddlers knock down and rebuild.

Size Line-Up

Gather 3-5 objects of different sizes (spoons, shoes, toys). Help toddlers arrange them from smallest to biggest. Use words like "tiny," "medium," "huge."

Pattern Dancing

Create simple movement patterns: stomp-clap-stomp-clap, or march-march-spin. Start with just two movements and let toddlers help continue the pattern.

Shape Hunt

Look for shapes during daily routines. "I see a circle on your plate!" "The door is shaped like a rectangle!" Make it a game to find shapes throughout the day.



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Try This—Everyday Activities That Build Math Skills

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Fill and Pour Station

Set up containers of different sizes with scoops, funnels, and measuring cups. Let toddlers explore how much fits in each container. Perfect for sensory tables, bath time, or outdoor play.

More or Less Game

Put different amounts of objects in two containers. Ask, "Which has more?" or "Which has less?" Start with obvious differences (1 vs. 5) and gradually make them closer.

Number Book Making

Create simple books using photos of familiar objects. "One shoe, two shoes, three balls." Let toddlers help count and turn pages.



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Progress Monitoring: Observing Development and Knowing When to Ask for Help

Toddlers develop at their own pace, and math understanding shows up in many small, everyday moments rather than formal assessments. As toddlers play, talk, sort, stack, and move, they're building the thinking skills that form the foundation for early math. Observing how they engage with people, materials, and routines helps caregivers and educators notice both growth and potential concerns.

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What to Look For:

- Is your toddler beginning to count or notice quantities during play?
- Do they show interest in sorting, matching, or stacking objects?
- Are they using spatial words or gestures (e.g., "up," "in," "more")?
- Can they follow simple two-step directions (e.g., "Get your cup and bring it here")?
- Do they show persistence when solving simple problems (e.g., figuring out how to fit a lid)?
- Are they starting to use pretend play with patterns or sequences (e.g., feeding dolls in a row)?

These actions support attention, memory, and early reasoning skills which are essential to mathematical thinking.

What to Do if You're Concerned:

Every child develops differently, but if you notice significant delays or concerns about a child's mathematical thinking, communication, or overall development, it's important to seek support early.

Here are some steps you can take:

- Document specific observations about the child's interests and abilities
- Talk with your program director, child's teacher, or pediatrician



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Progress Monitoring: Observing Development and Knowing When to Ask for Help

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- Contact your local Early Intervention program for a free developmental screening
- Reach out to a Family Resource Center or **Resource & Referral Center**  in your area
- Trust your instincts—if something doesn't feel right, it's okay to ask questions

Want Help Tracking Development?

Try these free resources:

- **CDC Learn the Signs. Act Early** - Developmental milestones for 18 months to 3 years
- CDC Milestone Tracker App - Free download with customizable checklists
- **Ages & Stages Questionnaires** - Screening tools available through many programs



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Enrichment Resources by Core Math Concept

These tools and activities offer easy ways to support early math skills through exploration, songs, movement, sensory play, and everyday routines.

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Number Awareness and Counting

→ [**Teaching Toddlers Numbers & Counting - PBS Kids**](#) 

Fun and simple activities to teach counting through everyday routines that helps to build a foundation for more complex mathematical concepts.

→ [**Number: Counting and Cardinality - Young Mathematicians**](#) 

Free games, videos, and activities. Includes resources in multiple languages.



Sorting and Classifying

→ [**Patterns and Sorting Games - Young Mathematicians**](#) 

Activities and video examples of toddlers sorting natural materials, with guidance for educators on facilitating these experiences.

→ [**Explore Early Math Topics - DREME**](#) 

A collection of ideas and activities to promote children's understanding and skills in early math. Includes helpful descriptions and explanations on why their important.



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Enrichment Resources by Core Math Concept

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Patterns & Routines

→ **Explore Early Math Topics - DREME**

A collection of ideas and activities to promote children's understanding and skills in early math. Includes helpful descriptions and explanations on why they're important.

→ **Pattern Activities - LT LT**

Research-based activities and videos showing how toddlers develop pattern recognition through movement, music, and objects.



Shapes and Spatial Awareness

→ **Shape Songs and Activities - Super Simple Songs**

Free videos teaching shape names through catchy songs and movements. Includes downloadable materials.

→ **Shapes and Spatial Relationships in Toddlers - Young Mathematicians**

Articles and tips for families about supporting spatial development through play. Search "spatial" or "math" for relevant content.



Size and Measurement

→ **Children Learning Measurement - DREME**

Detailed explanations about why and how to teach measurement to young children.

→ **Measurement with Young Children - Young Mathematicians**

Activities and games that help with teaching children about size and measurements.



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Curriculum & Implementation Supports

This resource guide complements various toddler curricula used across Mississippi early childhood programs. It provides additional math-focused activities and supports that can enhance any curriculum approach while remaining accessible to programs with limited resources.

Common Curricula for Infants and Toddlers

This resource guide is designed to complement a variety of infant and toddler programs that are accessible in early learning environments across Mississippi. Below are examples of commonly used curricula and professional development tools that support math learning in the earliest years:

→ **Creative Curriculum for Infants, Toddlers & Twos** 

Emphasizes exploration and discovery through interest areas. Math is integrated into all learning areas with focus on manipulation, exploration, and early problem-solving.

→ **HighScope Infant-Toddler Curriculum** 

Uses active learning framework with key developmental indicators. Math concepts are embedded in the "plan-do-review" sequence and exploration time.

→ **Frog Street Toddler** 

Provides structured activities for math concept development while maintaining focus on play-based learning and social-emotional development.

Professional Development and Support Tools

→ **ZERO TO THREE: Professional Development** 

Webinars, articles, and tools focused on infant-toddler development, including mathematical thinking and learning.

→ **Head Start Early Childhood Learning & Knowledge Center** 

Extensive library of resources on curriculum implementation, assessment, and supporting dual language learners in early math.

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Curriculum & Implementation Supports

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→ **Erikson Early Math Collaborative** 

Video libraries, research summaries, and activity guides specifically focused on early math development from birth through elementary years.

→ **Mississippi Department of Education – Office of Early Childhood** 

State-specific resources, training opportunities, and support for implementing high-quality early learning programs.

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Implementation Support Tools

→ **NAEYC: Developmentally Appropriate Practice** 

Guidelines for ensuring all activities and interactions are appropriate for toddler development and learning.

→ **STEM for Inclusion in Early Education - STEMIE** 

A collection of evidence-based resources for building critical STEM concepts in young children in inclusive settings.

Family Engagement Resources

→ **Family Math Night Materials - DREME** 

Fun ideas and ready-to-use materials for family friendly early math learning, available in multiple languages.

→ **Early Family Math** 

Hundreds of downloadable fun activities, games, and puzzles in many languages.

→ **Family Math – PBS SoCal** 

Activities, games, tips, and videos covering multiple math concepts.



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Sample Lesson Plan and Guidance

This lesson demonstrates how toddlers explore mathematical concepts through hands-on investigation and play. It includes clear objectives, materials, instructions, and assessment guidance that can be adapted for different settings and group sizes.

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Lesson Title

Sorting by Color - Making Rainbow Groups

Provide a clear title that reflects the math focus of your lesson and communicates the type of activity you're leading.

Target Math Concept(s)

Classification, sorting, color recognition, and vocabulary development

Choose 1-2 concepts from the Core Math Concepts section that align with your learning goals.

→ See Section: Core Math Concepts

Objective

Toddlers will sort familiar objects by color, use color vocabulary, and demonstrate understanding that objects can be grouped by shared characteristics.

Write an objective that describes what children should be able to do by the end of the lesson. Keep it realistic for toddler attention spans and abilities.

→ See Section: Progress Monitoring



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Sample Lesson Plan and Guidance

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Materials Needed

- Colored objects that are safe for toddlers (blocks, scarves, balls, toy cars, etc.)
- 3-4 containers or baskets
- Colored paper or fabric to line containers (optional)
- Books about colors (optional extension)

Choose materials that are readily available and can be adapted based on what you have. Consider safety, size, and appeal to toddlers.

→ **See Section:** Suggested Materials

Instructions

1. Sit with toddlers on the floor in a circle with all materials visible
2. Show objects one at a time: "Look! I have a red block. This is red."
3. Place colored containers where everyone can see them
4. Demonstrate sorting: "Red block goes with the red things"
5. Invite toddlers to choose an object and find where it belongs
6. Describe their actions: "You put the blue ball with the other blue things!"
7. Allow exploration and play. Some children may mix colors or create their own systems
8. Celebrate all attempts: "You're putting things together that are the same!"

Provide step-by-step guidance while remaining flexible. Toddlers may not follow the sequence exactly, and that's okay.

Describe the steps you will follow. You can adjust the number of steps or level of challenge based on your group's needs.

→ **See Section:** Instructional Strategies



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Sample Lesson Plan and Guidance

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Vocabulary to Use

Red, blue, yellow, green, same, different, together, sort, group, match

Include 4-6 key words to emphasize during the activity. Use them naturally and repeatedly.

→ **See Section:** Math Talk Examples

What to Look For

- Does the child show interest in the materials and activity?
- Can they identify any colors, even if not all correct?
- Do they attempt to put similar objects together?
- Are they using any color words or math vocabulary?
- Do they show understanding through actions, even if not words?
- Do they respond to mistakes with frustration or a desire to continue exploring?

Focus on process and engagement rather than perfect accuracy. Look for signs of mathematical thinking

→ **See Section:** Progress Monitoring

Differentiation Ideas

- **For children who need more support:** Start with just two very different colors; provide hand-over-hand guidance; use fewer objects
- **For children ready for more challenge:** Add more colors; ask "What else is red?"; encourage them to lead the sorting
- **For children with special needs:** Use high-contrast colors; provide larger objects; offer choices between two options



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Sample Lesson Plan and Guidance

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Extension Ideas

- Take a color walk around the room or outside
- Read books about colors during story time
- Sort snack items by color before eating
- Create color collages with magazines or natural materials
- Sing color songs with movements

Provide ways to continue learning throughout the day and connect to other activities.

→ **See Section:** Enrichment Resources

Mississippi Early Learning Standards Alignment:

- MELST.1 - Shows curiosity and motivation to learn
- MELST.15 - Uses senses to explore and understand the environment
- MELST.18 - Demonstrates understanding of classification
- MELST.19 - Shows understanding of number and quantity concepts
- MELST.25 - Uses language to communicate for a variety of purposes

Reference specific standards to show how the activity supports required learning goals.

Assessment Notes: Record brief observations about each child's participation, understanding, and interests. Note what vocabulary they used, how they approached the activity, and what might be good next steps for their learning.

Keep documentation simple and focused on information that will help plan future activities.



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→ What's Ahead: 3-4 Years

As toddlers grow into preschoolers, their mathematical thinking becomes more sophisticated and intentional.

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You'll start to see children:

- Count with more accuracy and understand that numbers represent specific quantities
- Create and extend more complex patterns using colors, shapes, and movements
- Sort and classify objects using multiple attributes (big red circles vs. small blue squares)
- Use comparative language more precisely ("This one is longer" "That group has fewer")
- Show interest in numerals and begin to recognize some written numbers
- Engage in more complex spatial reasoning and construction play
- Begin simple measurement activities using non-standard units
- Show increased attention span for math-focused activities and games

In the preschool years (3-4 years), children build on the foundation of exploration and discovery from their toddler experiences.

With increased language skills, longer attention spans, and growing independence, math activities can become more structured while still maintaining the hands-on, play-based approach that works best for young children.

The next stage will focus on supporting preschoolers as they develop more formal mathematical concepts while continuing to learn through investigation, play, and meaningful interactions with peers and adults.



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Links

Core Math Concepts at This Stage



Early Learning Standards (2018) – Mississippi Department of Education

Progress Monitoring



CDC's Developmental Milestones



Resource & Referral Centers – Mississippi Department of Human Services



Ages and Stages Questionnaires

Enrichment Resources by Core Math Concept



Teaching Toddlers Numbers & Counting – PBS Kids



Number: Counting and Cardinality – Young Mathematicians



Patterns and Sorting Games – Young Mathematicians



Measurement with Young Children – Young Mathematicians



Explore Early Math Topics – DREME



Pattern Activities – LT LT



Shape Songs and Activities – Super Simple Songs



Shapes and Spatial Relationships in Toddlers – Young Mathematicians



Children Learning Measurement – DREME

Curriculum & Implementation Supports



Creative Curriculum for
Infants, Toddlers & Twos



Infant-Toddler Curriculum
- HighScope



Frog Street Toddler



ZERO TO THREE:
Professional Development



Erikson Early Math
Collaborative



Mississippi Department
of Education – Office
of Early Childhood



NAEYC: Developmentally
Appropriate Practice



Head Start Early
Childhood Learning &
Knowledge Center



STEM for Inclusion in Early
Education - STEMIE



Family Math Night
Materials - DREME



Early Family Math



Family Math – PBS SoCal



AGES

3-4

Classifying and comparing,
recognizing numbers,
and using language to
describe math ideas.

GRADE: **PRESCHOOL**

In This Section

This section provides developmentally appropriate math resources for children ages 3 – 4 years.

Looking Back

A quick review of the skills and concepts explored in the previous age group

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Math Talk Examples

Sample phrases to build vocabulary and support math thinking

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Developmental Snapshot

How children in this stage typically engage with math

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Try This

Ready-to-use activities for classrooms and home settings

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Core Math Concepts

Key math ideas aligned with Mississippi's Early Learning Standards

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Enrichment Resources

Tools, printables, and links to extend learning

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Instructional Strategies, Tools, and Materials

Practical guidance for educators, caregivers, and inclusive learning

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Curriculum and Implementation Supports

Commonly used curricula and educator development tools

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Suggested Materials

Everyday objects and learning tools to support math exploration

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Sample Lesson with Planning Guidance

A model lesson with prompts to help you create your own

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Real-Life Math Moments

Ways to embed math into daily routines, transitions, and play

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What's Ahead

A look at what children typically begin to explore at this age

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Looking Back

At 18–36 months, children began exploring math through simple activities such as stacking blocks, sorting toys, filling containers, and counting out loud – sometimes very loudly!

They began to recognize simple patterns, use words like “big” or “more” and compare the sizes of things around them. At this stage, children benefit from everyday routines, lots of repetition, and simple conversations because these things help to spark their curiosity and build their math vocabulary.

Developmental Snapshot

Three and four-year-olds are becoming more intentional in their thinking and playing.

They can focus their attention for longer periods, play well with friends, and use more detailed language to describe their observations and ideas. Their growing independence allows them to tackle more challenging problems while still needing concrete, hands-on experiences to build understanding.

At this stage, you'll notice children begin to count with more accuracy and purpose, do more with simple patterns, compare amounts in a more organized way, and use math to solve everyday problems. They're developing stronger memory skills and can follow multi-step directions, making this an ideal time to introduce more structured math activities while maintaining the playful, exploratory approach that works best for young children.

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Why This Stage Matters

This is an important time for building children's confidence with math and their ability to solve problems. In addition to hands-on exploring, they are beginning to do more "symbolic thinking" like understanding that a number represents a group of objects. However, they still need hands-on experiences to help connect concepts and ideas in a way they can understand. The math skills developed now directly prepare children for the more formal mathematical learning they'll encounter in Pre-K and kindergarten.

When children feel successful and engaged with math at this stage, they develop positive attitudes toward mathematical thinking that last throughout their school years.

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Core Math Concepts

Three and four-year-olds are ready to build on their earlier explorations and start thinking about math in more meaningful and consistent ways. Here are the key concepts children typically develop between ages 3 to 4:

- **Rote counting  and beginning number recognition** – Counting to 10 or higher in sequence and starting to recognize some written numerals
- **Quantity concepts and comparison** – Understanding "more," "less," "same," and "empty" through direct comparison of groups
- **Advanced sorting and classification** – Grouping objects by multiple attributes and explaining their sorting rules
- **Pattern creation and extension** – Making their own simple patterns and continuing patterns started by others
- **Shape identification and description** – Naming common 2D shapes and beginning to describe their properties



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Core Math Concepts

Continued

- **Spatial reasoning ** and **positional language**
 - Using and understanding words like “next to,” “between,” “in front of,” and “behind”
- **Beginning measurement and comparison** – Comparing length, height, and capacity using direct comparison and non-standard units
- **One-to-one correspondence ** – Matching objects systematically and understanding that each item gets counted once
- **Introduction to simple addition and subtraction** – Understanding “adding more” and “taking away” through concrete experiences

These concepts develop through guided play, purposeful questioning, and repeated practice in meaningful contexts. Children at this stage benefit from explicit instruction combined with plenty of opportunities for independent exploration and discovery.

For reference to full Mississippi Early Learning Standards, visit:

[Mississippi Department of Education Early Learning Standards \(2018\)](#) 

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Instructional Strategies, Tools, and Materials

Toddlers learn best through active exploration, repetition, and hands-on discovery. They need opportunities to touch, move, sort, and experiment with materials while hearing rich mathematical language from caring adults. These strategies support math learning while nurturing toddlers' developmental needs for movement, choice, and independence.



Educators

- Use intentional questioning to extend children's mathematical thinking ("How do you know?" "What would happen if...?")
- Create learning centers with open-ended materials that invite mathematical exploration and problem-solving
- Establish predictable routines that incorporate counting, patterns, and comparison as natural parts of the day
- Document children's mathematical thinking through photos, observations, and work samples
- Plan small group activities that allow for differentiated instruction and peer interaction
- Model mathematical language and thinking aloud during activities
- Connect math concepts across different areas of learning (art, science, dramatic play)



Families & Caregivers

- Ask open-ended questions during everyday activities ("Which pile has more?" "What do you notice about these shapes?")
- Encourage children to explain their thinking and problem-solving strategies
- Create opportunities for measuring and comparing during cooking, cleaning, and errands
- Play simple games that involve counting, patterns, or matching
- Read books that highlight mathematical concepts and vocabulary
- Point out numbers, shapes, and patterns in the environment during daily routines

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Instructional Strategies, Tools, and Materials

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Inclusive Supports

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Provide materials at different complexity levels so all children can participate successfully

Offer multiple ways for children to demonstrate understanding (verbal, physical, drawing)

Honor cultural diversity by incorporating familiar objects and multiple languages

Support language development with gestures, visual cues, and peer partnerships

Use visual supports like number lines, picture schedules, and step-by-step cards

Adapt activities for different physical abilities and sensory needs

Create quiet spaces where children can focus without distractions

Suggested Materials



Manipulatives

- Counting bears, links, or other small objects for sorting and counting
- Pattern blocks and geometric shapes
- Building blocks and construction materials
- Puzzles with varying levels of complexity



Visual & Sensory Tools

- Number cards and numeral stamps
- Measuring tools (rulers, measuring cups, balance scales)
- Books featuring math concepts and problem-solving
- Art materials for creating patterns and documenting thinking



Everyday Math Items

- Collections of natural objects (shells, rocks, leaves)
- Containers of different sizes for comparing capacity
- Play money and cash register for dramatic play
- Dice and simple board games



Technology & Digital Tools

- Simple apps or websites that reinforce counting and pattern recognition
- Digital cameras for documenting mathematical discoveries
- Interactive whiteboard activities (if available)


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Real-Life Math Moments and Activities

Three and four-year-olds can engage in more complex mathematical thinking during daily routines and play. These moments provide authentic contexts for applying math concepts while building problem-solving skills and mathematical vocabulary.



Educators

- **Morning meeting math:** Count days on the calendar, identify today's date, discuss weather patterns and create graphs
- **Center rotations:** Set up math-rich learning centers with materials that invite exploration, comparison, and problem-solving
- **Dramatic play extensions:** Add calculators, measuring tools, and number cards to housekeeping and store play areas
- **Art and math connections:** Create patterns with stamps, compare paint colors, or build sculptures with geometric shapes
- **Outdoor mathematical exploration:** Measure shadows, count and classify natural objects, or create patterns with playground equipment
- **Story time extensions:** Act out story problems, count characters, or identify shapes in book illustrations



Families & Caregivers

- **Cooking and baking:** Measure ingredients, count items, compare amounts, and discuss time and temperature
- **Grocery shopping:** Compare prices, count items, identify shapes on packages, and estimate quantities
- **Household chores:** Sort laundry by type or color, match socks, count items, and organize by size
- **Bedtime routines:** Count books, arrange stuffed animals by size, or create bedtime patterns
- **Travel and errands:** Count traffic lights, identify house numbers, compare building heights, and notice patterns in architecture

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Real-Life Math Moments and Activities

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Provide visual schedules and supports to help all children anticipate and participate in math activities

Use consistent language and gestures to support children who are learning English or have communication differences

Offer choices in how children can participate (counting aloud, pointing, using manipulatives)

Use familiar cultural objects and contexts to make math relevant and meaningful

Create partnerships between children to support peer learning and social interaction

Adapt timing and expectations based on individual children's attention spans and developmental needs



CAREGIVER TIP: Three and four-year-olds love to be helpful! Give them "math jobs" like counting napkins for snack, sorting materials for cleanup, or measuring ingredients for cooking. When children see math as useful and important, they develop positive attitudes toward mathematical thinking.



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“ Math Talk Examples

Children at this age can engage in more complex mathematical conversations and benefit from rich vocabulary and open-ended questions. Use these examples to model mathematical thinking and encourage children to explain their reasoning.



Number and Counting

“

Let's count how many friends are here today. One, two, three... We have six friends!

“

I see you have five blocks. Can you show me what five looks like with your fingers?

“

You counted to eight. What number comes after eight?

“

How many more do we need to make ten?



Size and Comparison

“

This container holds more water than that one. How can you tell?

“

You made your tower taller than mine. What did you do differently?

“

Which group has fewer blocks? How do you know?

“

That's the longest line I've ever seen! Let's measure it.



Sorting and Classifying

“

You put all the triangles together and all the circles together. You sorted by shape!

“

I notice you have three different groups. Can you tell me your rule for sorting?

“

What's the same about all the things in this pile?

“

How else could we sort these objects?



Patterns and Sequences

“

I see your pattern: big, small, big, small. What comes next?

“

You made an ABAB pattern with the red and blue blocks. Can you make a different pattern?

“

First we wash our hands, then we eat lunch, then we brush our teeth. What's our pattern?

“

Can you clap the same pattern that I clap?



“ Math Talk Examples

Continued



Spatial Relationships

“

The ball rolled under the table and behind the chair.

“

Put the book between the red crayon and the blue crayon.

“

You're standing in front of the swing and next to your friend.

“

How did you fit all those blocks inside that small box?



Shapes and Geometry

“

That's a rectangle. I can tell because it has four sides and four corners.

“

Look around the room. Can you find something else that's shaped like a circle?

“

You used triangles and squares to build your house. What other shapes could you add?

“

This ball is round like a sphere, but this plate is flat like a circle.



Problem Solving

“

You have a problem to solve. There are five children and only three chairs. What could we do?

“

That didn't work the way you expected. What else could you try?

“

How do you think we could make this tower more stable?

“

You figured it out! Can you tell me how you solved that problem?



CAREGIVER TIP: Give children time to think and respond. Count to five in your head before rephrasing or asking a different question. Mathematical thinking takes time, and children need space to process and formulate their ideas.

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Try This—Everyday Activities That Build Math Skills

These activities are designed for 3-4 year olds and can be adapted based on individual children's interests and developmental levels. Focus on the process of exploration and thinking rather than getting the "right" answer.

Number Hunt

Look for numbers in the environment - on houses, signs, books, and toys. Start a number collection by taking photos or drawing the numbers you find. Ask children to predict what number comes next or identify numbers they recognize.

Shape Detectives

Go on shape hunts indoors and outdoors. Use a simple chart to record findings. Challenge children to find shapes within shapes (like triangles in a star) or create their own shapes using various materials.

Pattern Band

Create patterns using instruments, body movements, or classroom materials. Start with simple AB patterns and gradually introduce more complex sequences. Let children be the "pattern leader" and have others follow along.

Estimation Station

Fill clear containers with different amounts of objects (beans, blocks, buttons). Ask children to estimate "about how many" before counting together. Compare estimates to actual amounts and discuss what they notice.

Cooking Math

Involve children in simple cooking or snack preparation. Count ingredients, measure amounts, compare quantities, and discuss sequences ("First we mix, then we pour, then we bake").

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Try This—Everyday Activities That Build Math Skills

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Building Challenge

Provide building materials and specific challenges: "Can you build something taller than this book?" or "Use exactly 10 blocks to build something." Encourage children to plan, build, and explain their constructions.

Sorting Museum

Create a collection of interesting objects and challenge children to sort them in different ways. After sorting, ask them to explain their rule and see if others can guess how they organized the objects.

Measure Everything

Use non-standard units (paper clips, blocks, footsteps) to measure different objects around the room or yard. Compare measurements and discuss findings. "This table is eight blocks long. How many blocks long is your chair?"

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Progress Monitoring: Observing Development and Knowing When to Ask for Help

Three and four-year-olds demonstrate their mathematical understanding through play, conversation, and problem-solving activities. Observing how they approach challenges, use mathematical language, and persist through difficulties provides valuable insight into their developing skills and thinking processes.

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What to Look For:

- Does your child count objects accurately using one-to-one correspondence?
- Can they identify and name basic shapes and describe some of their properties?
- Do they create patterns independently and extend patterns started by others?
- Are they using mathematical language spontaneously during play ("I need more," "That's bigger," "Let's count them")?
- Can they sort objects and explain their sorting rule?
- Do they compare quantities and use terms like "more," "less," and "same" correctly?
- Are they beginning to recognize some written numerals?
- Do they show persistence when solving mathematical problems?
- Can they follow multi-step directions involving spatial or numerical concepts?

These behaviors indicate developing mathematical thinking and readiness for more complex concepts.



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Progress Monitoring: Observing Development and Knowing When to Ask for Help

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What to Do if You're Concerned:

If you notice significant challenges with mathematical concepts, problem-solving, or overall development, it's important to seek support. Early intervention can make a significant difference in a child's learning trajectory.

Steps you can take:

- Document specific observations about the child's mathematical thinking and behavior
- Talk with your program director, child's teacher, or pediatrician about your concerns
- Request a developmental screening through your local Early Intervention program
- Contact a Family Resource Center or **Resource & Referral Center**  in your area
- Trust your instincts—if something seems concerning, it's always appropriate to ask for guidance

Want Help Tracking Development?

Try these free resources:

- **CDC Learn the Signs. Act Early**  - Developmental milestones for 18 months to 3 years
- CDC Milestone Tracker App - Free download with customizable checklists
- **Ages & Stages Questionnaires**  - Screening tools available through many programs



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Enrichment Resources by Core Math Concept

These tools and activities offer easy ways to support early math skills through exploration, songs, movement, sensory play, and everyday routines.

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Number Awareness and Counting

→ **Counting Activities: Learning Trajectories** 

Research-based progression of counting activities with guidance for supporting children at different developmental levels..

→ **Number Arrangements Video: Erikson Math** 

Teacher guides students through creating visual representations of different numbers.



Patterns & Sequences

→ **Patterns and Structure: Young Mathematician** 

Collection of hands-on pattern activities using common classroom materials.

→ **Pattern Resources: DREME** 

Activities and resources for supporting pattern recognition and more.



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Enrichment Resources by Core Math Concept

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Shapes and Spacial Awareness

→ **Shapes and Spatial Skills: PBS Kids** 

Simple activities to help kids identify shapes and strengthen their spatial awareness.

→ **Shapes & Spatial Awareness: DREME for Teachers** 

Activities for exploring shapes in guided small groups or centers.



Measurement and Comparison

→ **Measurement Activities: PBS Kids** 

Practical measurement activities using classroom and household materials.

→ **Measurement with Young Children - Young Mathematicians** 

Practical ideas for developing measurement skills.



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Curriculum & Implementation Supports

This resource guide complements various toddler curricula used across Mississippi early childhood programs. It provides additional math-focused activities and supports that can enhance any curriculum approach while remaining accessible to programs with limited resources.

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Commonly Used Curricula for 3-4 Year Olds

→ Creative Curriculum for Preschool ↗

Comprehensive curriculum that integrates math into interest areas and daily routines. Emphasizes hands-on exploration and emergent learning opportunities.

→ HighScope Preschool Curriculum ↗

Active learning approach with key developmental indicators that include mathematical reasoning. Uses plan-do-review sequence to support intentional learning.

→ Frog Street Preschool ↗

Thematic curriculum with dedicated math components. Provides structured activities while maintaining focus on play-based learning.

Professional Development and Support Tools

→ Erikson Early Math Collaborative ↗

Video libraries, research briefs, and implementation guides specifically focused on preschool mathematics education.

→ ZERO TO THREE: Professional Development ↗

Training modules and resources focused on early mathematical development and classroom implementation.

→ Mississippi Department of Education – Office of Early Childhood ↗

State-specific resources, training opportunities, and support for implementing high-quality early learning programs.



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Curriculum & Implementation Supports

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→ Head Start Early Childhood Learning & Knowledge Center ↗

Extensive library of resources on curriculum implementation, assessment, and supporting dual language learners in early math.

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Implementation Support Tools

→ NAEYC: Developmentally Appropriate Practice ↗

Guidelines for ensuring all activities and interactions are appropriate for toddler development and learning.

→ Division for Early Childhood (DEC): Recommended Practices ↗

Evidence-based practices for supporting toddlers with disabilities and developmental delays in inclusive settings.

Family Engagement Resources

→ Family Math Night Materials - DREME ↗

Ready-to-use materials for hosting family events focused on early math learning, available in multiple languages.

→ Center for Family Math ↗

Parent endorsed activities, resources, and tips for practicing math at home.



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Sample Lesson Plan and Guidance

This lesson demonstrates how 3-4-year-olds can explore mathematical concepts through hands-on investigation and meaningful play. It includes clear objectives, materials, instructions, and assessment guidance that can be adapted for different settings and group sizes.

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Lesson Title

Sorting by Color - Making Rainbow Groups

Provide a clear title that reflects the math focus of your lesson and communicates the type of activity you're leading.

Target Math Concept(s)

Pattern recognition, creation, and extension using natural materials

Choose 1-2 concepts from the Core Math Concepts section that align with your learning goals and children's developmental readiness.

→ See Section: Core Math Concepts

Objective

Children will create, extend, and describe simple patterns using natural objects, demonstrating understanding that patterns have predictable sequences and can be continued by following a rule.

Write an objective that describes what children should be able to do by the end of the lesson. Make it specific but achievable for this age group.

→ See Section: Progress Monitoring



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Sample Lesson Plan and Guidance

Continued

Materials Needed

- Collection of natural objects (leaves, rocks, acorns, shells, pinecones)
- Large mats or trays for working surfaces
- Pattern cards with simple visual examples (optional)
- Camera or paper for documenting patterns
- Small baskets for organizing materials

Choose materials that are safe, appealing, and readily available. Natural materials are especially engaging for this age group.

→ **See Section:** Suggested Materials

Instructions

1. Gather children in a circle and introduce the collection of natural objects
2. Model creating a simple AB pattern: "Rock, leaf, rock, leaf, rock, leaf"
3. Ask children: "What do you notice about my pattern? What comes next?"
4. Demonstrate extending the pattern and explain the "pattern rule"
5. Invite children to work with partners to create their own patterns
6. Circulate and ask questions: "Can you tell me about your pattern?" "What's your pattern rule?"
7. Have children share their patterns with the group and explain their thinking
8. Challenge interested children to try more complex patterns (AAB, ABC)
9. Document patterns with photos or drawings for later reference

Provide step-by-step guidance while remaining flexible. Allow children to experiment and make discoveries along the way.

→ **See Section:** Instructional Strategies

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Sample Lesson Plan and Guidance

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Vocabulary to Use

Pattern, rule, repeat, next, same, different, sequence, continue

Include 6-8 key words to emphasize during the activity. Use them naturally and frequently throughout the lesson.

→ See Section: Math Talk Examples

What to Look For

- Does the child show interest in the materials and activity?
- Can they identify patterns created by others?
- Do they attempt to create their own patterns?
- Are they using pattern vocabulary when describing their work?
- Can they extend patterns started by others?
- Do they persist when facing challenges or mistakes?
- How do they explain their thinking about patterns?

Focus on mathematical thinking processes rather than perfect execution. Look for evidence of understanding and engagement.

→ See Section: Progress Monitoring

Differentiation Ideas

- **For children who need more support:** Start with very simple AB patterns; work one-on-one; use fewer materials; provide hand-over-hand guidance
- **For children ready for more challenge:** Introduce AAB or ABC patterns; ask them to create patterns for others to continue; encourage verbal descriptions of pattern rules
- **For children with special needs:** Use high-contrast materials; provide larger objects that are easier to manipulate; offer choices between two pattern options



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Sample Lesson Plan and Guidance

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Extension Ideas

- Create movement patterns based on the object patterns
- Use the same pattern concept with art materials (painting, stamping)
- Look for patterns in the outdoor environment during nature walks
- Create pattern books by drawing or photographing the patterns made
- Sing songs that have repeating patterns in lyrics or rhythm

Provide ways to continue learning throughout the day and connect to other curriculum areas.

→ See Section: Enrichment Resources

Mississippi Early Learning Standards:

- **MELS.P.2** - Shows curiosity and approaches problems flexibly
- **MELS.P.7** - Shows increasing ability to organize, represent, and communicate thinking
- **MELS.P.15** - Demonstrates understanding of patterns and relationships
- **MELS.P.16** - Uses mathematical reasoning to solve problems
- **MELS.P.22** - Uses language to communicate mathematical thinking

Reference specific standards to show how the activity supports required learning goals.

Assessment Notes: Record observations about each child's pattern understanding, mathematical language use, problem-solving approaches, and peer interactions. Note individual interests and potential next steps for learning.

Keep documentation simple and focused on information that will help plan future activities and support individual children's growth.



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→ What's Ahead: Pre-K (4-5 Years)

As children transition to Pre-K, their mathematical thinking becomes more sophisticated and symbolic. You'll start to see children:

- Count with greater accuracy and begin to understand that numbers represent specific quantities
- Recognize and write some numerals, connecting symbols to quantities
- Create and extend more complex patterns with multiple attributes
- Sort and classify using multiple characteristics simultaneously
- Use comparative language more precisely and make accurate comparisons
- Engage in beginning addition and subtraction through concrete experiences
- Show increased interest in measurement using tools and standard units
- Demonstrate longer attention spans for structured math activities
- Begin to use mathematical thinking to solve real-world problems
- Show growing ability to explain their mathematical reasoning

In the Pre-K years (4-5 years), children build on the exploratory foundation from their earlier experiences while developing more formal mathematical concepts. With increased language skills, social abilities, and cognitive development, math activities can become more structured and goal-oriented while still maintaining the hands-on, meaningful approach that supports deep learning.

The next stage will focus on supporting Pre-K children as they develop school readiness skills and prepare for the more formal mathematical instruction they'll encounter in kindergarten.

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Links

Core Math Concepts at This Stage



Mississippi Department of Education Early Learning Standards (2018)

Enrichment Resources by Core Math Concept



Counting Activities – Learning Trajectories



Number Arrangements Video – Erikson Math



Patterns and Structure – Young Mathematician



Pattern Resources – DREME



Shapes and Spatial Skills – PBS Kids



Shapes & Spatial Awareness – DREME for Teachers



Measurement Activities – PBS Kids



Measurement with Young Children – Young Mathematicians

Curriculum & Implementation Supports



Creative Curriculum for Preschool



Preschool Curriculum – HighScope



Frog Street Preschool



ZERO TO THREE: Professional Development



Erikson Early Math Collaborative



Center for Family Math

Curriculum & Implementation Supports (*Continued*)



Mississippi Department
of Education - Office
of Early Childhood



Head Start Early
Childhood Learning &
Knowledge Center



Developmentally
Appropriate Practice
- NAEYC



Division for Early
Childhood (DEC):
Recommended Practices



Family Math Night
Materials - DREME



AGES

4-5

Building number sense,
extending patterns, and
exploring more or less

GRADE: **PRE-K**

In This Section

This section provides a complete, developmentally appropriate math resource for children ages 4-5. It includes strategies, examples, and planning tools to support math learning in Pre-K classrooms, child care settings, and homes.

Looking Back

A quick review of the skills and concepts explored in the previous age group

[Go to section >](#)

Developmental Snapshot

How children in this stage typically engage with math

[Go to section >](#)

Core Math Concepts

Key math ideas aligned with Mississippi's Early Learning Standards

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Instructional Strategies, Tools, and Materials

Practical guidance for educators, caregivers, and inclusive learning

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Suggested Materials

Everyday objects and learning tools to support math exploration

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Real-Life Math Moments

Ways to embed math into daily routines, transitions, and play

[Go to section >](#)

Math Talk Examples

Sample phrases to build vocabulary and support math thinking

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Try This

Ready-to-use activities for classrooms and home settings

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Enrichment Resources

Tools, printables, and links to extend learning

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Curriculum and Implementation Supports

Commonly used Pre-K curricula and educator development tools

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Sample Lesson with Planning Guidance

A model lesson with prompts to help you create your own

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What's Ahead

A look at what children typically begin to explore in kindergarten

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Looking Back

At ages 3-4, many children explored early math through sorting, matching, basic counting, and describing shapes in play.

They likely began to use math words like "more," "same," and "big" and may have compared sizes or grouped objects without prompting. Math learning happened mostly through sensory experiences, movement, and routine-based play.

Developmental Snapshot

Pre-K children begin thinking more logically about quantity, order, and comparison. They count with increasing accuracy, recognizing and writing numerals, extending patterns, and begin solving simple problems using math vocabulary. Their learning thrives when math is tied to purposeful routines, peer interaction, and real-world problem-solving.

Why This Stage Matters

Children at this stage are moving from informal understanding to early symbolic reasoning. Math concepts introduced now build the foundation for formal operations in kindergarten.

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Core Math Concepts

- Counting with one-to-one correspondence  (to 10 and beyond)
- Recognizing and writing numerals
- Understanding basic addition and subtraction (e.g., "adding one more")
- Extending patterns  (e.g., red-blue-red...)
- Comparing and measuring (length, weight, capacity)
- Recognizing and describing 2D and 3D shapes
- Sorting and classifying objects by color, shape, or size

These skills follow a developmental progression. Children build understanding in layers—first through play, then through language, and eventually through symbols and problem-solving.

For reference to full Mississippi Early Learning Standards (Pre-K), visit:
Mississippi Department of Education Early Learning Standards (2018)

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Instructional Strategies, Tools, and Materials



Educators

- Build math into morning meetings and transitions (repetition in daily routines helps children develop number sense and confidence without needing formal math lessons)
- Use story problems and **manipulatives**  to model combining or separating sets
- Introduce number writing during center play (e.g., menus, tickets, journals)
- Encourage peer math talk and teamwork during building or sorting tasks



Families & Caregivers

- Count steps, snacks, or toys aloud during everyday routines
- Draw or write numbers using chalk, crayons, or markers
- Ask your child to compare items while cooking or cleaning ("Which one is taller?")
- Create simple number stories from daily life ("You had 3 crackers, and you ate 1—how many now?")

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Instructional Strategies, Tools, and Materials

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Inclusive Supports

Use clear visuals like ten frames and number lines

Provide multiple ways to respond (e.g., point, draw, show with objects)

Break multi-step directions into smaller parts

Repeat math concepts across settings (e.g., snack, blocks, storytime)



Suggested Materials



Manipulatives & Counting Tools

- Counters, linking cubes, and number cards
- Dry pasta, cereal, or buttons for sorting and counting



Visual & Measuring Tools

- Pattern blocks, shape puzzles, rulers, measuring tape
- Tools: measuring cups, scales, containers for comparing volume
- Visual supports: number lines, picture cards, sentence frames



Writing & Fine Motor Tools

- Play-dough, crayons, and chalk for numeral formation



Books & Printables

- Math storybooks and printable number journals

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Real-Life Math Moments and Activities



Educators

- Use “number helpers” to count lunch trays or classroom tasks
- Create sorting stations by color, size, or type
- Graph favorite fruits or class birthdays
- Practice estimating and measuring objects in centers



Families & Caregivers

- Measure and compare while cooking or gardening
- Use daily transitions to explore sequences (“What do we do first, next, last?”)
- Set the table with **one-to-one correspondence** ⓘ (“One spoon for each plate”)

Inclusive Supports

Use matching routines for socks, shoes, or snack items

Check for understanding using gestures or yes/no cards

Offer small group practice with hands-on manipulatives

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“ Math Talk Examples

These examples can be used by both educators and caregivers to model math vocabulary in everyday interactions.

“ How many do we have now if we add one more?

“ You ate 2 and there's 1 left—that's 3 altogether.

“ What comes next in the pattern?

“ Let's sort the toys by shape or color.

“ Can you find something taller than this book?

“ This box is heavier—how can we tell?

Encourage language that connects real-world experiences to math vocabulary and symbols.

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Try This

Math Journals

- Daily prompts like "Draw five things you see today."

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Shape Builders

- Use craft sticks, blocks, or pipe cleaners to form shapes

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Snack Math

- Estimate how many goldfish, then count and sort

TEACHER TIP: Use snack time to compare and count. Ask "How many do you think you have?" then count together. This supports one-to-one correspondence and vocabulary development.

Pattern Play

- Make patterns with beads, stamps, or movement

Toy Sorting Race

- Group by type, size, or purpose

Number Walk

- Spot and name numbers in the environment



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Progress Monitoring: Observing and Adjusting Instruction

Educators and caregivers can monitor children's understanding through informal observations during play and routine activities. Use checklists, quick reflections, or simple conversations to track what children know and guide your next steps.



Educators

Use observation checklists, anecdotal notes, or learning stories to track children's math thinking in centers, small groups, or free play. Look for how children:

- Count accurately using one-to-one correspondence
- Use math vocabulary spontaneously
- Extend or create patterns during hands-on activities
- Recognize and describe shapes or compare objects
- Attempt to write or identify objects numerals

These observations can help you know when to **scaffold** a concept, introduce new materials, or revisit strategies in a new context.



Families & Caregivers

Watch out for how your child uses counting or comparison in everyday routines—like setting the table, playing with blocks, or sorting laundry. You might notice:

- They count out loud while playing or cleaning up
- They use words like "bigger," "same," or "more" on their own
- They group or sort toys without being prompted

Talk with your child about what they're doing and encourage them to explain their thinking. These moments help build math confidence and language naturally.

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Concerned About Your Child's Learning?

Every child develops at their own pace, but if you're concerned about your child's math learning or overall development, don't hesitate to seek support.

You can:

- Talk with your child's teacher or program director
- Contact your local school district's early childhood coordinator
- Reach out to a Family Resource Center or Resource & Referral Agency in your area for guidance
- Ask your pediatrician if a developmental screening or referral would be helpful

You are your child's best advocate. Trust your instincts and don't wait to ask questions or request help.

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Enrichment Resources by Core Math Concept



Counting and Cardinality

- [How Many in the Cup? – Erikson Early Math Collaborative](#) 

A small group activity using estimation and counting to build one-to-one correspondence

- [Estimation Jar Game – YouCubed](#) 

A visual game where children guess and then count the items in a jar to build number sense

- [Subitizing and Counting Activities – LearningTrajectories.org](#) 

Interactive tool paths for building early quantity and counting skills over time



Recognizing and Writing Numerals

- [Number Writing Worksheets – Pre-K Pages](#) 

Printable number tracing sheets that build fine motor control and numeral recognition

- [Making Numerals Visible – Erikson Early Math](#) 

Suggestions for integrating numeral writing into routines using sensory and visual supports



Addition and Subtraction Concepts

- [Adding and Subtracting – DREME for Teachers](#) 

Foundational and inclusive activities and instruction to teach children addition and subtraction at different levels.

- [Number: Adding and Subtracting - Young Mathematicians](#) 

Numerous instructional activities and videos including in Spanish.

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Enrichment Resources by Core Math Concept

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Patterns

→ **Pattern and Sorting Games** 

Activities, games, and videos.

→ **Centers and Small Group Activities** 

Children add and remove from a pattern to fill the spaces on a board.



Measurement and Comparison

→ **Center and Small Group Activities** 

"Measuring Myself" and "Heavier or Lighter"

→ **Measurement - Young Mathematicians** 

Videos and activities in various languages.



Shapes and Spatial Thinking

→ **Exploring Shapes** 

Videos and activities in various languages.

→ **Spatial Relations** 

Centers, small group activities, and math moments activities.



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Curriculum & Implementation Supports

This resource guide is designed to complement a variety of early childhood math curricula used across Mississippi. While not tied to any single program, it reinforces foundational math skills and practices common to many Pre-K classrooms. Below are examples of curricula commonly used with 4- and 5-year-olds, along with resources that support implementation.

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Commonly Used Curricula (Pre-K)

→ **MS Beginnings: Pre-K**

Mississippi's state-developed early learning curriculum integrates math into literacy-rich and play-based units, aligned with state standards.

→ **Creative Curriculum**

A comprehensive whole-child curriculum used widely in Pre-K programs. It introduces math through **inquiry-based exploration**  and learning centers.

→ **Frog Street Pre-K**

A theme-based curriculum that includes daily math lessons, manipulatives, and readiness-focused instruction tied to developmental milestones.

→ **Building Blocks for Math**

A research-based Pre-K math curriculum that provides sequenced, small-group math instruction with a focus on early numeracy, geometry, and problem-solving.

Professional Development and Support Tools

→ **Erikson Early Math Collaborative**

Short videos, activity guides, and explanations of concepts to support teacher knowledge and classroom application.

→ **DREME Teacher Educator Resources**

Free resources and video models for building teacher confidence in math talk, operations, and patterning.



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Curriculum & Implementation Supports

Continued

→ **Mississippi Department of Education – Office of Early Childhood** 

State-sponsored professional learning opportunities, including curriculum-specific PD, training modules, and alignment guidance.

These resources are not required to use this guide but may be helpful when integrating these strategies into an existing curriculum, planning training, or building alignment across a program.

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Sample Lesson Plan With Guidance

This sample lesson shows how one of the core math concepts for this age band—patterns and relationships—can be transformed into a hands-on, developmentally appropriate learning experience. It offers a ready-to-use structure along with embedded guidance to help you adapt the lesson based on your children, setting, and available materials.

You can use this lesson exactly as written or treat it as a starting point for designing your own and for future lessons.

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Lesson Title

Pattern Play with Beads

Provide a clear title that reflects the math focus of your lesson and communicates the type of activity you're leading.

Target Math Concept

Patterns and Relationships

Choose a concept from the Core Math Concepts for this age band that reflects the skill or idea you want to teach.

→ See Section: Core Math Concepts

Objective

Children will create and extend repeating patterns (AB, AAB, ABC) using manipulatives such as beads, blocks, or colored links.

Write an objective that describes what children should be able to do or understand by the end of the lesson.

→ See Section: Progress Monitoring



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Sample Lesson Plan With Guidance

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Materials Needed

- Colored beads or snap cubes
- Pipe cleaners or string
- Optional: Pattern cards or visual prompts

List materials that are accessible and engaging. Everyday objects like buttons, stickers, or caps can also be used.

→ See Section: Suggested Materials

Instructions

1. Introduce the concept of a pattern by modeling an AB sequence (e.g., red-blue-red-blue).
2. Ask children to continue or repeat the pattern.
3. Invite them to create their own pattern.
4. Provide more complex pattern challenges (e.g., AAB or ABC).
5. Ask children to explain: "What's your pattern rule?"

Describe the steps you will follow. You can adjust the number of steps or level of challenge based on your group's needs.

→ See Section: Instructional Strategies

Vocabulary to Use

Pattern, repeat, same, different, in a row

Identify 3-5 math words or phrases to introduce or reinforce.

→ See Section: Math Talk Examples



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Sample Lesson Plan With Guidance

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What to Look For (Observation Notes)

- Child repeats or extends a pattern
- Uses pattern-related vocabulary
- Explains or corrects their pattern rule

These are indicators of learning you might observe. They can guide your decisions about whether to scaffold, reinforce, or extend the concept.

→ See Section: Progress Monitoring

Extension Ideas:

- Movement or sound patterns
- Stamp or draw color patterns
- Build block patterns in the construction area

Add follow-up options that help reinforce or extend the skill later in the day or across different learning centers.

→ See Section: Enrichment Resources

Mississippi Early Learning Standards:

- **MELS.P.2** – Repeats and creates AB and more complex patterns
- **MELS.P.3** – Describes and extends patterns using materials or language

→ See Section: Core Math Concepts for standards alignment tips



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→ What's Ahead

As children approach Kindergarten, they will begin learning formal addition and subtraction strategies, measuring and comparing with tools, and applying math to solve real-world problems. They'll also be expected to represent ideas with written numerals, interpret graphs, and describe patterns and shapes with more precision.

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Links

Enrichment Resources by Core Math Concept



How Many in The Cup?
– Erikson Early Math Collaborative



Estimation Jar Game
– YouCubed



Shape Recognizer Learning Path
– LearningTrajectories.org



Number Writing Worksheets
– Pre-K Pages



Making Numerals Visible – Erikson Early Math



Adding and Subtracting
– DREME for Teachers



Number: Adding and Subtracting – Young Mathematicians



Pattern and Sorting Games



Centers and Small Group Activities



Measurement
– Young Mathematicians



Exploring Shapes



Spatial Relations

Curriculum & Implementation Supports



Erikson Early Math Collaborative



Teacher Educator Resources – DREME



Mississippi Department of Education – Office of Early Childhood



AGES

5-6

KINDERGARTEN

Counting beyond 20,
adding and subtracting,
and beginning to
understand place values

In This Section

This section provides developmentally appropriate math resources for children ages 5 – 6 years.

Developmental Snapshot

How children in this stage typically engage with math

[Go to section >](#)

Core Math Concepts

Key math ideas aligned with Mississippi's Early Learning Standards

[Go to section >](#)

Instructional Strategies, Tools, and Materials

Practical guidance for educators, caregivers, and inclusive learning

[Go to section >](#)

Suggested Materials

Everyday objects and learning tools to support math exploration

[Go to section >](#)

Real-Life Math Moments

Ways to embed math into daily routines, transitions, and play

[Go to section >](#)

Math Talk Examples

Sample phrases to build vocabulary and support math thinking

[Go to section >](#)

Try This

Ready-to-use activities for classrooms and home settings

[Go to section >](#)

Enrichment Resources

Tools, printables, and links to extend learning

[Go to section >](#)

Curriculum and Implementation Supports

Commonly used Pre-K curricula and educator development tools

[Go to section >](#)

Sample Lesson with Planning Guidance

A model lesson with prompts to help you create your own

[Go to section >](#)

What's Ahead

A look at what children typically begin to explore in the next stage

[Go to section >](#)

→ Looking Back

At 4-5 years, children will really start to get the hang of math! They demonstrate the ability to count higher numbers and more accurately, recognize numbers, and even start writing them.

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These young math learners are better at using measurement tools and making patterns. Because they have a stronger sense of numbers, they can begin understanding basic addition and subtraction concepts. At this age, children are bursting with confidence and are excited to demonstrate their mathematical ability.

Developmental Snapshot

Five and six-year-olds are beginning to think more about numbers and math ideas. They can stay focused longer, work with others to solve problems, and start to understand math in more organized ways. At this stage, their fine motor skills have really improved as well as their vocabulary. Therefore, this is a great time to introduce more structured lessons while keeping learning fun and hands-on.

At this stage, children are ready to work with bigger numbers, do simple addition and subtraction, recognize and write numbers. They can also begin to handle problems that take more than one step and are starting to see how math connects to everyday life.

★ Why This Stage Matters

This is an important time for math learning because children are beginning to move from learning through hands-on play to understanding that numbers and shapes can stand for real ideas. The skills they develop now build the foundation for later math learning. When children feel confident in math at this age, they are more likely to keep trying when things get hard and to see themselves as capable math learners for years to come.



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Core Math Concepts at This Stage

Five and six-year-olds are ready to explore more formal math concepts while still needing hands-on experiences to help them understand. Here are the key concepts children typically develop between ages 5 to 6:

Counting and Number Sense

- Recognizing numbers 1-20 (or higher) and beginning to write them more accurately
- Counting to 20 or more with **one-to-one correspondence** ⓘ and understanding that the number counted shows the total amount
- Understanding that numbers can be made up of other numbers

Early Operations

- Beginning addition and subtraction or “joining” and “separating” through real experiences and starting to use math symbols (+, -, =)
- Using different ways to solve math problems and explain why

Place Value and Number Structure

- Beginning to understand that the position of digits matters in two-digit numbers

Measurement and Data Skills

- Using common and everyday items to measure length, weight, capacity, and time
- Collecting information and showing it in simple charts or graphs

Shapes and Spatial Reasoning ⓘ

- Building and adding patterns with different features such as size, color, or number
- Identifying, describing, and comparing shapes using math words

More on math skills, standards, and developmental milestones by age/grade level:

MS College and Career Readiness Standards for Mathematics (Grade K) ↗

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Instructional Strategies, Tools, and Materials

Five and six-year-olds learn best when taught clearly, given chances to practice, and allowed to explore with hands-on materials. They can do more structured math activities but still need real objects and pictures to make sense of ideas. These approaches help them grow in math while keeping learning active and meaningful.



Educators

- Use clear, step-by-step instructions to introduce new math ideas, followed by **guided practice** ⓘ and independent work.
- Include **number talks** ⓘ and math discussions that encourage students to share different ways to solve problems.
- Plan lessons that build step by step on what children already know.
- Use **formative assessment** ⓘ to adjust teaching and give extra help when needed.
- Set up **math centers** ⓘ with hands-on activities that give children fun ways to practice and build on what they've learned.
- Show your thinking out loud as you solve problems so children can see how to approach new challenges.
- Connect math to real life and other subjects so children understand how numbers and patterns connect to everyday experiences.
- Use different ways to show math ideas, like real objects, drawings, and symbols to help all children make sense of them.

Watch this video series by NAEYC & NCTM for more in-depth strategies:

[Position Students as Learners and Doers of Mathematics through Play-matized Math Learning](#) ↗

[Position Students as Learners and Doers of Mathematics through Student-Centered Routines](#) ↗

[Position Students as Learners and Doers of Mathematics through Mathematical Discourse](#) ↗

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Instructional Strategies, Tools, and Materials

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Families and Caregivers

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- Talk with children about math during regular activities and routines
- Play math games that help build skills like **number sense** (patterns, and thinking).
- Ask questions that promote thinking and reasoning ("How do you know?" "What if we tried...?")
- Celebrate when a child learns new math skills or solves math problems.
- Connect math to daily life, like cooking, shopping, or setting the table, to show how numbers and patterns are part of everyday life.
- Support homework and practice activities with encouragement and assistance when needed
- Read books that feature math skills and problem-solving situations

Inclusive Supports

- Give kids tools like pictures and hands-on materials so they can "see" and "touch" the math concepts in different ways that make sense to them.
- Likewise, let children show what they know in different ways such as drawing, using objects, talking through their thinking, or acting it out. This allows children to express their understanding in ways that work best for them.
- Encourage kids to work together in pairs or small groups so they can talk, listen, and learn from each other. These peer interactions help build language skills in a natural and supportive way.
- When possible, consider adapting the pace, tools, and goals to fit each child's unique developmental stage. Meeting children where they are helps build confidence and supports meaningful growth.



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Instructional Strategies, Tools, and Materials

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Inclusive Supports (Continued)

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- Use examples from children's own cultures and everyday experiences, and include different languages, when possible, to reflect the diversity in the classroom
- Offer quiet areas and flexible seating choices so children can find what feels most comfortable for their bodies and focus styles to support different sensory needs and give them more control over their learning environment.
- Create quiet spaces and alternative seating options to support different sensory needs and avoid distractions.
- Where possible, use assistive technology when appropriate to support participation and learning

Suggested Materials



Manipulatives

- Base-ten blocks, counting cubes, and number lines
- Pattern blocks, tangrams, and geometric solids
- Fraction circles and bars for beginning fraction skills
- Play money, dice, and dominoes



Visual & Assessment Tools

- Number charts (1-100), ten frames, and hundreds of charts
- Graph paper, measuring tools (rulers, scales, measuring cups)
- Math journals for recording thinking and strategies



Games & Activities

- Board games involving counting, strategy, and number recognition
- Card games that reinforce number concepts and operations
- Puzzles that develop spatial reasoning and problem-solving skills
- Building materials for exploring patterns and measurement



Technology & Digital Tools

- Educational apps that reinforce number sense and math reasoning
- Interactive whiteboards for math demonstrations and activities
- Digital manipulatives and virtual tools for exploration



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Real-Life Math Moments and Activities

Five and six-year-olds are ready for real-world math experiences. These moments provide meaningful contexts for applying mathematical concepts while developing problem-solving skills and the ability to communicate math mathematical communication abilities.



Educators

- **Morning math activities:** Use the calendar each day to count, find patterns, talk about the weather, and solve simple math problems together.
- **Math centers:** Create learning stations that focus on specific skills through engaging, hands-on activities
- **Project-based learning ①:** Include math into science experiments, social studies, and art projects
- **Cooking and measurement:** Use recipes that require measuring, timing, counting, and fraction concepts
- **Classroom market:** Let children earn and spend classroom money to learn about using and saving money.
- **Work with other teachers:** Plan together to connect math with other subjects and activities



Families & Caregivers

- **Shopping Math:** Let your child help compare prices, count money, add up totals, and guess how much things will cost.
- **Home improvement projects:** Measure spaces, count materials, and solve practical problems
- **Cooking and baking:** Follow recipes, measure ingredients, adjust quantities, and discuss time
- **Travel planning:** Calculate distances, estimate time, read maps, and plan routes
- **Game nights:** Play board games, card games, and strategy games that involve mathematical thinking
- **Budgeting activities:** Involve children in simple budgeting decisions and money management

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Real-Life Math Moments and Activities

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Inclusive Supports

Use pictures and visual schedules to help all children know what's coming next and take part in math activities

Share information in families' home language and provide translated materials when possible.

Use examples and materials that reflect children's cultures and experiences to make math feel meaningful.

Group children with different strengths so they can learn from and support one another.

Give children different ways to join in and show what they know.

Adjust activities as needed to include children with different physical abilities and learning styles.

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“ Math Talk Examples

Children at this age can start explaining their math thinking out loud and use clear math words to describe what they're doing.

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Use these examples to show how to explain thinking and to help children explain how they solve problems.



Number and Counting

“

You have 8 stickers and gave away 3. How many do you have left? How did you figure that out?

“

I see you solved $6 + 4$ by counting on. Can you show me another way to solve this problem?

“

This number is 47. Which number shows how many tens? Which shows how many ones?

“

You said $5 + 3 = 8$. Can you make up a story to match this?



Patterns and Relationships

“

“Your pattern is growing by 2 each time. What comes next?” or “Can you keep the pattern going?”

“

I notice you sorted these into three equal groups. How many are in each group?

“

What do you think the next design would look like?

“

Can you describe the rule for your pattern using words?



Shapes and Spatial Reasoning

“

How is a square different from a rectangle? What's the same about them?

“

You built a structure with 12 cubes. Can you build something different using the same number of cubes?

“

When I turn this shape, does it change into a different shape? Why or why not?

“

Can you find any triangles can you find in this shape?



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“ Math Talk Examples

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Measurement and Data

“

Our plant grew 2 inches this week. How tall is it now compared to last week?

“

You measured the table with paper clips and got 15. Why might someone else get 18?

“

Looking at our graph, which snack did most children choose? How can you tell?

“

How could we figure out which cup holds more water?



Problem Solving and Reasoning

“

There are 15 children and 4 tables. How should we divide into groups? Is there more than one way?

“

That first way didn't work. What else could you try?

“

I noticed you and Marcus got different answers. Let's figure out what happened.

“

Can you convince me that your answer makes sense?

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Try This—Everyday Activities That Build Math Skills

These activities are designed for 5–6-year-olds and can be adapted based on individual children’s interests and skill levels. Focus on building mathematical reasoning and problem-solving while maintaining engagement and enjoyment.

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Number Detective

Look for numbers around you and make a number book with photos and drawings. Challenge children to find numbers in different forms (clocks, houses, and price tags) and discuss what each number means.

Pattern Lab

Use different materials to make and continue patterns. Ask children to describe the pattern, add to it, or make it their own. Try patterns that grow or change in more than one way (like color and shape).

Measuring Station

Measure things using both everyday objects (like paperclips) and real tools (like rulers or measuring cups). Compare results and talk about why the answers might be different.

Math Story Theater

Act out simple math stories that use addition, subtraction, or sharing. Invite children to make up their own story problems and share them with the class.



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Try This—Everyday Activities That Build Math Skills

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Shape Builders

Give children blocks, cutouts, or other shapes to build designs and structures. Talk about how shapes fit together and what makes them different or the same.

Data Detectives

Collect information about fun topics like favorite snacks, the weather, or classroom pets and make simple graphs to show what you find.

Money Market

Set up a classroom store where children can practice counting money, making change, and solving price-related problems. Include different ways to make the same amounts.

Time and Routine Math

Use classroom schedules, cooking timers, and calendar activities to talk about time, order, and how long things take. Practice reading clocks and making simple timelines.



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Progress Monitoring: Observing Development and Knowing When to Ask for Help

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Five and six-year-olds demonstrate what they know about math by solving problems, talking about their thinking, and using what they've learned in new ways. Watching how they work, keep trying, and try different ways helps us understand how they and their math skills are growing.

Developmental Concerns:

If you notice significant challenges with math concepts, number sense, or overall development, early intervention can make a crucial difference in supporting the child.

What to do if you are concerned:

- Visit [CDC's Learn the Signs & Act Early](#) for step-by-step guidance.
- Contact a Family Resource Center or [Resource & Referral Center](#) in your area.

Want Help Supporting Development?:

Try these free resources:

- [CDC Watch Me! Celebrating Milestones and Sharing Concerns](#)
- [CDC Free Training and Certification](#)
- [Mississippi Lift Early Childhood Developmental Health Resources](#)

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Enrichment Resources by Core Math Concept

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These research-based tools and activities provide evidence-based approaches to supporting mathematical learning through structured instruction, guided practice, and meaningful application.



Number and Counting

→ **Learning Trajectories: Number and Operations Activities** 

Research-based progression of number activities with detailed guidance for supporting children at different developmental levels. (Note: Free account setup required.)

→ **Number Sense for Kindergarten** 

Numerous lessons and videos on developing number sense and operation concepts.

→ **Counting for Kindergarten** 

Lessons and videos on exploring numbers.



Patterns and Relationships

→ **DREME Network** 

Lessons and research-based strategies for developing pattern recognition in young children.

→ **Patterns for Kindergarten** 

Lessons, books, and videos discovering patterns.



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Shapes and Spatial Reasoning

→ [**Shapes for Kindergarten**](#)

Lessons, books, and videos on teaching shape concepts.

→ [**Spatial Relationships for Kindergarten**](#)

Activities for exploring shapes, transformations, and spatial relationships.



Measurement and Data

→ [**Measurement in Kindergarten**](#)

Professional resources and practical activities for incorporating measurement concepts into early childhood programs.

→ [**Data Collection and Graphing for Young Children**](#)

Age-appropriate strategies for engaging children in data collection, organization, and interpretation.



Problem Solving and Reasoning

→ [**Solving Problems in Kindergarten Math**](#)

Downloadable, teacher-developed lessons.

→ [**YouCubed: Mathematical Mindset Activities**](#)

Research-based activities that promote mathematical thinking, reasoning, and positive attitudes toward mathematics.

Inclusive supports:

→ [**Learning Trajectories Inclusion**](#)

Inclusive teaching resources.



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Curriculum & Implementation Supports

This resource guide complements various Pre-K curricula used across Mississippi early childhood programs. It provides research-based mathematical activities and supports that enhance curriculum implementation while remaining accessible to programs with diverse resources and populations.

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Common Curricula for 5-6 Year Olds

- [**Creative Curriculum for Preschool**](#) Comprehensive curriculum with integrated mathematics components that emphasize hands-on exploration and meaningful learning experiences.
- [**HighScope Preschool Curriculum**](#) Active learning approach with mathematical key developmental indicators that support logical thinking and problem-solving skills.
- [**Frog Street Pre-K**](#) Research-based curriculum with explicit mathematics instruction and systematic skill development sequences.
- [**Opening the World of Learning \(OWL\)**](#) Integrated curriculum approach that connects mathematics with literacy and content learning through thematic units.

Professional Development and Support Tools

- [**Erikson Early Math Collaborative**](#) Professional development modules, video libraries, and implementation guides specifically focused on early mathematics education.
- [**NAEYC Professional Development Institute**](#) Training opportunities focused on developmentally appropriate mathematics instruction and assessment.
- [**Mississippi Department of Education - Office of Early Childhood**](#) State-specific resources, professional development opportunities, and support for implementing high-quality early learning programs.



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Curriculum & Implementation Supports

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→ **Head Start Early Childhood Learning & Knowledge Center** 

Comprehensive resources on mathematics curriculum implementation, assessment, and supporting diverse learner populations.

Implementation Support Tools

→ **NAEYC: Developmentally Appropriate Practice** 

Guidelines for ensuring all mathematical activities and interactions are appropriate for children's developmental levels and learning needs.

→ **Division for Early Childhood (DEC): Recommended Practices** 

Evidence-based practices for supporting children with disabilities and developmental delays in inclusive mathematics learning environments.

Family Engagement Resources

→ **Family Math Night Materials - DREME** 

Ready-to-use materials for hosting family events focused on early mathematics learning, available in multiple languages.

→ **Math at Home Resources** 

Simple activities and strategies for families to support mathematical learning during everyday routines and activities.



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Sample Lesson Plan and Guidance

This lesson demonstrates how 5-6-year-olds can engage with formal math concepts through structured instruction and meaningful problem-solving. It includes clear objectives, materials, differentiation strategies, and assessment guidance that can be adapted for different settings and learner needs.

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Lesson Title

Number Stories - Solving Addition Problems

Provide a clear title that reflects the mathematical focus and type of learning experience you're facilitating.

Target Math Concept(s)

Beginning addition concepts, problem-solving strategies, and mathematical communication

Choose 1-2 concepts from the Core Math Concepts section that align with your learning goals and children's developmental readiness.

→ [See Section: Core Math Concepts](#)

Objective

Children will solve addition problems using concrete materials and beginning symbols, explain their solution strategies, and create their own addition story problems demonstrating understanding of "joining" concepts.

Write an objective that describes what children should be able to do by the end of the lesson. Make it specific, measurable, and achievable for this age group.



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Sample Lesson Plan and Guidance

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Materials Needed

- Counting manipulatives (bears, cubes, or buttons)
- Number cards (1-10) and operation symbols (+, =)
- Ten frames and dot cards
- Chart paper and markers
- Math journals or recording sheets
- Small bins or work mats for organizing materials

Choose materials that support concrete understanding while introducing symbolic representation. Ensure all materials are accessible and engaging.

Instructions

1. Begin with a warm-up counting activity or number talk to activate prior knowledge
2. Present a concrete addition problem: "Maria has 3 apples. Her friend gives her 2 more apples. How many apples does Maria have now?"
3. Have children use manipulatives to act out the problem and find the solution
4. Guide children to record their work using numbers and symbols: $3 + 2 = 5$
5. Discuss different solution strategies (counting all, counting on, using known facts)
6. Present additional problems with varying contexts and number combinations
7. Have children work in pairs to solve problems and explain their thinking
8. Challenge children to create their own addition stories using manipulatives



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Sample Lesson Plan and Guidance

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9. Conclude with sharing time where children present their problems to the class
10. Record strategies and solutions on chart paper for future reference

Provide step-by-step guidance while maintaining flexibility for student responses and discoveries. Balance explicit instruction with exploration.

→ See Section: Instructional Strategies

Vocabulary to Use

Addition, plus, equals, total, altogether, sum, more, join, combine, strategy

Include 8-10 key mathematical terms to emphasize throughout the lesson. Use them consistently and help children understand their meanings.

→ See Section: Math Talk Examples

What to Look For

- Does the child understand the problem situation and what is being asked?
- Can they use manipulatives accurately to represent the problem?
- Do they demonstrate understanding of addition as "joining" or "combining"?
- Are they beginning to use mathematical symbols appropriately?
- Can they explain their solution strategy clearly?
- Do they check their work for reasonableness?
- Are they able to create their own addition problems?
- How do they respond to problems with different number combinations?

Focus on mathematical understanding, reasoning processes, and communication skills rather than speed or memorization.

→ See Section: Progress Monitoring

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Sample Lesson Plan and Guidance

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Differentiation Ideas

- **For children who need more support:** Use smaller numbers (sums to 5); provide visual supports like ten frames; work one-on-one; use familiar contexts
- **For children ready for more challenge:** Include larger numbers; introduce different problem types (start unknown, change unknown); encourage multiple solution strategies
- **For children with special needs:** Provide adaptive materials; use visual schedules; offer alternative ways to demonstrate understanding; adjust timing

Extension Ideas

- Create a class book of addition story problems written and illustrated by children
- Use addition concepts during snack time, art projects, and outdoor activities
- Practice addition facts through games, songs, and movement activities
- Connect to subtraction by exploring related problems ($5 = 3 + 2$, so $5 - 3 = 2$)
- Incorporate addition into dramatic play scenarios and real-world contexts

Provide ways to continue learning throughout the day and connect to other activities.

→ **See Section:** Enrichment Resources



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Mississippi Early Learning Standards:

- **MELS.P.2** - Shows curiosity and approaches problems flexibly
- **MELS.P.7** - Shows increasing ability to organize, represent, and communicate thinking
- **MELS.P.15** - Demonstrates understanding of patterns and relationships
- **MELS.P.16** - Uses mathematical reasoning to solve problems
- **MELS.P.22** - Uses language to communicate mathematical thinking

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Reference specific standards to demonstrate how the activity supports required learning goals and outcomes.

Assessment Notes: Document each child's problem-solving approaches, use of manipulatives, understanding of addition concepts, mathematical communication, and areas for continued support or challenge.

Keep documentation focused on information that will inform future instruction and support individual children's mathematical development.



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→ Looking Ahead: Ages 6-7 Years

As children enter elementary school, their math thinking becomes more organized and connected.

They start to understand that numbers and symbols can represent real ideas and help them solve problems.

In kindergarten and first grade, children build on their early math experiences. They begin using written numbers to add and subtract, look for patterns, and explain their reasoning. While they are ready for more structured lessons, they still need hands-on materials and real-life experiences to make new ideas clear.

These early school years form an important bridge between playful exploration and more formal math learning. Children continue to grow when they talk about their thinking, work with numbers in everyday situations, and apply math in ways that feel real and purposeful.

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Links

Core Math Concepts at This Stage



MS College and Career Readiness Standards for Mathematics (Grade K)

Instructional Strategies, Tools and Materials



Position Students as Learners and Doers of Math through Play-matized Math Learning



Position Students as Learners and Doers of Math through Student-Centered Routines



Position Students as Learners and Doers of Math through Mathematical Discourse

Real-Life Math Moments and Activities



Morning Math Activities



Math Centers



Shopping Math

Progress Monitoring



Learn the Signs & Act Early – CDC



Resource & Referral Center



Watch Me! Celebrating Milestones and Sharing Concerns – CDC



Free Training and Certification – CDC



Mississippi Lift Early Childhood Developmental Health Resources

Enrichment Resources by Core Math Concept



Learning Trajectories:
Number and Operations
Activities



Number Sense for
Kindergarten



Counting for
Kindergarten



DREME Network



Patterns for Kindergarten



Shapes for
Kindergarten



Spatial Relationships
for Kindergarten



Measurement in
Kindergarten



Data Collection and
Graphing for Young
Children



Solving Problems in
Kindergarten Math



YouCubed: Mathematical
Mindset Activities



Learning Trajectories
Inclusion

Curriculum & Implementation Supports



Creative Curriculum
for Preschool



Preschool Curriculum
- HighScope



Frog Street Pre-K



Opening the World
of Learning (OWL)



Erikson Early Math
Collaborative



NAEYC Professional
Development Institute



Mississippi Department
of Education - Office
of Early Childhood



Head Start Early
Childhood Learning &
Knowledge Center



Developmentally
Appropriate Practice
- NAEYC



Division for Early
Childhood (DEC):
Recommended Practices



Family Math Night
Materials - DREME



Math at Home Resources



AGES

6-7

Using addition and subtraction confidently, recognizing place value, and solving word problems

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This section provides a developmentally appropriate math resource for children ages 6 - 7 years.

Developmental Snapshot

How children in this stage typically engage with math

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Core Math Concepts

Key math ideas aligned with Mississippi's Early Learning Standards

[Go to section >](#)

Instructional Strategies, Tools, and Materials

Practical guidance for educators, caregivers, and inclusive learning

[Go to section >](#)

Suggested Materials

Everyday objects and learning tools to support math exploration

[Go to section >](#)

Real-Life Math Moments

Ways to embed math into daily routines, transitions, and play

[Go to section >](#)

Math Talk Examples

Sample phrases to build vocabulary and support math thinking

[Go to section >](#)

Try This

Ready-to-use activities for classrooms and home settings

[Go to section >](#)

Enrichment Resources

Tools, printables, and links to extend learning

[Go to section >](#)

Curriculum and Implementation Supports

Commonly used Pre-K curricula and educator development tools

[Go to section >](#)

Sample Lesson with Planning Guidance

A model lesson with prompts to help you create your own

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What's Ahead

A look at what children typically begin to explore in the next stage

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→ Looking Back

At 5-6 years, children began to understand more about numbers and how they work together.

They learned to count past 20, recognize and write numbers better, and solve basic addition and subtraction problems using real objects. Through hands-on activities and guided lessons, they became more confident in explaining their thinking and trying different ways to solve problems.

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Developmental Snapshot

Six- and seven-year-olds are moving into formal elementary math and building on what they already know. They're learning to follow clear steps to solve problems and begin to use numbers in new ways. At this age, children can count well beyond 20 and are starting to understand how numbers are made up of tens and ones (place value). They're learning to add and subtract and can sometimes solve problems without needing to see objects or touch objects. They are also beginning to read and use math symbols like +, -, and =. Children at this stage can solve simple word problems, explain their thinking, and see how math connects to real-life situations like handling money or reading a clock.

★ Why This Stage Matters

This is an important bridge between early learning and elementary math. The skills that children build now, such as adding, subtracting, and understanding how numbers work, can set the stage for all math learning in the future. When children feel confident solving problems and using numbers, they're more likely to enjoy math and stick with it even when it becomes more challenging. Building strong math habits and a positive attitude now helps them succeed not only in later grades, but also in other subjects and everyday life.



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Core Math Concepts at This Stage

Six and seven-year-olds are ready to engage with formal mathematical concepts while still benefiting from concrete experiences and visual representations. Here are the key concepts children typically develop between ages 6 to 7:

Counting and Number Patterns - Count to 100 and beyond, skip-count by 2s, 5s, and 10s, and notice simple number patterns.

Understanding Place Value - Recognize that two-digit numbers are made up of tens and ones (Ex. 47 means 4 tens and 7 ones).

Adding and Subtracting - Solve addition and subtraction problems up to 20 using different methods like counting on, using number lines, or making ten.

Solving Word Problems - Use drawings, objects, or simple equations to solve short story problems about real-life situations.

Learning About Money - Identify coins and their values, make equal amounts using different coins, and solve easy money problems.

Measuring with Standard Tools - Use rulers, measuring cups, and scales to measure length, volume, and weight with standard units (*inches, cups, pounds*).

Telling Time - Read clocks to the hour and half-hour, understand parts of a day, use calendars, and begin to measure short amounts of time.

Exploring Shapes and Space - Name and describe common **2D and 3D shapes**  and use shape words like sides, corners, and edges to compare them.

Collecting and graphing data - Sort and organize information using simple charts or bar graphs and talk about what the data show.

Beginning fraction concepts - See fractions as equal parts of a whole (Ex. *one-half* or *one-third* using objects, food, or drawings).

For reference to full Mississippi College and Career Readiness Standards, visit:
Mississippi College and Career Readiness Standards - Mathematics 

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Instructional Strategies, Tools, and Materials

Six- and seven-year-olds learn best when math feels real and makes sense to them. They are ready for more step-by-step lessons, but they still need things they can see, touch, and talk about for help. Pictures, objects, and simple routines help them stay focused, build confidence, and understand how math fits into everyday life.



Educators

- Teach new math ideas one step at a time and show clear examples.
- Give children time to practice together and on their own.
- Have short daily number talks or quick math warm-ups.
- Show more than one way to solve a problem and ask students to explain how they figured it out.
- Watch how students work and adjust lessons to give extra help or a bigger challenge when needed.
- Practice basic facts often so children become faster and more confident.
- Connect math to real things they know like school schedules, money, or classroom jobs.
- Use hands-on tools and pictures to make ideas easier to understand.
- Let children talk about math and work with partners or small groups

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Instructional Strategies, Tools, and Materials

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Families & Caregivers

- Encourage homework and practice but let your child do the thinking.
- Ask questions such as "How did you solve that?" or "Can you think of another way?"
- Read books that use numbers or show problem-solving.
- Talk about math during daily activities like cooking, shopping, or traveling.
- Give your child chances to use math in real life like counting change, reading clocks, or measuring while cooking.
- Play games that use counting, adding, or thinking skills to make math fun.
- Praise effort and curiosity, not just correct answers.

Inclusive Supports

- Use number lines, charts, and step-by-step cards to show how math works.
- Let kids show what they know in different ways by talking, drawing, using objects, or writing.
- Have students work in pairs or small groups to support talking about math and learning in ways that fit different styles.
- Adjust timing, tools, or directions so everyone can take part and feel successful.
- Use examples, stories, and materials that reflect different cultures and languages.
- Offer quiet areas or flexible seating for children who need them.
- Use simple technology tools, like interactive apps or videos, to help all children join in.

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Instructional Strategies, Tools, and Materials

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Suggested Materials

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Manipulatives

- Base-ten blocks, counting cubes, and number lines
- Pattern blocks, **tangrams** , and **3D shapes** 
- Fraction circles and bars for early fraction ideas
- Play money, dice, and dominoes



Visual & Assessment Tools

- Number charts (1-100), ten frames, and hundreds charts
- Rulers, scales, and measuring cups
- Math journals or notebooks to show thinking



Games & Activities

- Board and card games that use counting or thinking skills
- Puzzles that build thinking and **spatial skills** 
- Building sets for exploring shapes and measurement



Technology Tools

- Simple math apps that build number sense and problem-solving skills
- Interactive whiteboards or **digital manipulatives**  for group lessons



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Real-Life Math Moments and Activities

Six and seven-year-olds are ready to use math in real-life ways. The following everyday moments can give children a chance to practice what they've learned, solve problems, and talk about their thinking.



Educators

- **Morning math activities:** Use calendar time to count by 2s, 5s, and 10s, look for number patterns, and collect simple daily information like tracking the weather or attendance to make quick charts or graphs together.
- **Math centers:** Set up small stations where children can practice skills through games, puzzles, or hands-on challenges
- **Projects across subjects:** Connect math to science, art, or reading.
- **Cooking and measurement:** Follow simple recipes together to measure, count, and explore time and fractions.
- **Classroom store:** Let children earn and spend classroom money to learn about value, saving, and making change.
- **Data projects:** Survey classmates, measure objects, track daily temperatures, and make graphs to show what they find.
- **Team planning:** Work with other teachers to connect math ideas to different subjects and activities.

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Real-Life Math Moments and Activities

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Families & Caregivers

- **Shopping math:** Let your child compare prices, count money, and estimate how much things will cost.
- **Home projects:** Have your child measure spaces, count supplies, or help solve small household problems.
- **Cooking together:** Measure, mix, and talk about time while cooking or baking.
- **Travel time:** Read maps, estimate how long trips will take, and look for numbers on road signs or gas pumps.
- **Family game nights:** Play board or card games that involve counting, adding, or taking turns.
- **Money practice:** Let children help with simple budgeting choices like planning snacks or saving for something they want.

Inclusive Supports

Use pictures, charts, or visual schedules to help all children know what to expect.

Share information and directions in families' home languages when possible.

Let children take part in different ways: talking, drawing, writing, or using hands-on materials

Include examples and stories that reflect students' cultures and everyday experiences.

Make small changes so all children, including those with different physical or learning needs, can join in.

Pair children with different strengths so they can learn from each other.

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“ Math Talk Examples

Children at this stage are becoming confident math thinkers who can explain how they solve problems and use math words to describe their thinking.

Asking questions helps children talk through their thinking, see connections, and try new ways.

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Number and Counting

“

You have 8 stickers and gave away 3. How many do you have left? How did you figure that out?

“

I see you solved $6 + 4$ by counting on. Can you show me another way to solve this problem?

“

This number is 47. What does the 4 represent? What does the 7 represent?

“

You said $5 + 3 = 8$. Can you create a story problem that matches this equation?

“

What happens if we start counting at 23 and skip-count by 5s?



Patterns and Relationships

“

Your pattern is growing by 2 each time: 2, 4, 6, 8. What would the tenth number be?

“

I notice you sorted these into three equal groups. How many are in each group?

“

If this pattern continues, how many squares would be in the sixth design?

“

Can you explain the rule for your pattern using your own words?

“

How could you keep your pattern going to 30?



Geometry and Spatial Reasoning

“

How is a square different from a rectangle? What's the same about them?

“

You built a structure with 12 cubes. Can you build something different using the same number of cubes?

“

When I turn this shape, does it change into a different shape? Why or why not?

“

How many triangles can you find in this hexagon?

“

This shape has 6 sides. What could you call it?



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“ Math Talk Examples

Continued



Measurement, Data, and Money

“

Our plant grew 2 inches this week. How tall is it now?

“

You measured the table with paper clips and got 15. Why might someone else get 18?

“

Looking at our graph, which snack did most children choose? How can you tell?

“

How could we figure out which container holds more water?

“

You have 35 cents. What coins could you use to make that amount?

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Problem Solving and Reasoning

“

There are 15 children and 4 tables. If we want the same number at each table, how many will sit together?

“

Your first strategy didn't work. What else could you try?

“

You and your partner got different answers. Let's figure out why.

“

Can you explain how you know your answer makes sense?

“

Our graph shows most students read 4 books last week. How could we find the total number of books?



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Try This—Everyday Activities That Build Math Skills

These activities are designed for 6–7-year-olds to strengthen number sense, reasoning, and problem-solving. Each one connects math to real-life experiences that are fun and meaningful.

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Place Value Builders

Use small items like blocks or straws to build numbers. Bundle groups of ten and label them (10, 20, 30...). Ask, “How many tens and ones are in this number?”

Skip-Counting Challenge

Clap, hop, or march while skip-counting by 2s, 5s, and 10s. Use it to count classroom items or steps to the playground. See who can start at a different number and keep the patter going.

Shape Hunt Around Us

Create a mini store with school supplies. Children “buy” items, count coins, and find more than one way to make the same amount. Older children can make change or set their own prices.

Math Journal Prompts

Give children a question to draw and write about how many different ways to make 10, what numbers could fit between 29 and 35, or if they had 20 cubes, how many towers of 5 could they build.

Graph It!

Asks classmates about their favorite snacks, colors, or pets. Write down the results and create a bar graph. Ask, “Which has the most? Which has the least? How many more?”



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Try This—Everyday Activities That Build Math Skills

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Measure It!

Use rulers or measuring tapes to find the length of desks, pencils, and books. Compare lengths and record the numbers. Challenge students to order items from shortest to longest.

Number Puzzles

Write mystery number clues: "I'm more than 20 but less than 25. I'm even." Let children guess the number or write their own clues.

Calendar Challenges

Use the classroom or family calendar to find patterns in weeks and months. Ask, "What day will it be five days from now?" or "how many days are left in this month?"

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Progress Monitoring: Observing Development and Knowing When to Ask for Help

Six- and seven-year-olds are growing in how they think about and use math. They show their understanding through the way they solve problems, explain their thinking, and make connections between numbers and everyday life.

It's normal for children to develop math skills at different speeds. What matters most is that they stay curious, keep trying, and feel supported as they learn. Paying attention to how children approach learning and not just what they can do gives helpful clues about their progress.

If you ever have concerns about a child's development or learning pace, there are many trusted tools and programs that can help families and teachers track growth and find extra support when needed.

Helpful Resources:

→ **CDC – Child Development: Middle Childhood (6–8 Years)**

Information about how children grow and learn during the early school years, including thinking, social, and emotional development.

→ **NAEYC – Developmentally Appropriate Practice (DAP)**

Guidance for teachers and families on supporting learning for children birth through age 8.

→ **Harvard Center on the Developing Child**

Explains how brain development continues through the early school years and how experiences support learning and resilience.

→ **American Academy of Pediatrics (HealthyChildren.org)**

Offers age-specific guidance for 6-8-year-olds, including learning, behavior, and health topics.

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Progress Monitoring: Observing Development and Knowing When to Ask for Help

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→ **Mississippi Resource & Referral (R&R) Centers**

Connect families and educators with child development resources, training, and local programs. While services focus on early childhood (birth-5), many centers also support families with young school-age children.

→ **Mississippi Department of Education – Office of Special Education**

Provides guidance and support for families and schools when children may need extra help with learning or development. Includes information about evaluations, early intervention, and the Multi-Tiered System of Supports (MTSS) process.

→ **Mississippi Parent Training and Information Center (MSPTI)**

Helps families understand their child's educational rights and navigate special education or support services.



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Enrichment Resources by Core Math Concept

These research-based tools and activities provide evidence-based approaches to supporting math learning through structured instruction, guided practice, and meaningful application.



Number Sense and Operations

Counting, place value, addition and subtraction, early fractions

→ **DREME - Operations** 

Lessons and videos detailing: why and what of operations, mathematics of operations, development of children's thinking on operations, and supports for classroom practice.

→ **Family Math – Numbers and Counting** 

Daily routines, activities, and games for families.

→ **Young Mathematicians** 

Classroom and home math learning activities that promote children's math thinking and persistence.



Patterns and Relationships (Algebraic Thinking)

Recognizing, extending, and describing patterns and simple rules

→ **DREME - All About Patterns** 

Research-based strategies for developing pattern recognition and algebraic reasoning in young children.

→ **YouCubed: Mathematical Mindset Tasks** 

Engaging, open-ended tasks that encourage flexible thinking and pattern recognition.

→ **Learning and Teaching with Learning Trajectories** 

Activities on patterns, structures, and algebraic thinking.

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Shapes and Spatial Thinking (Geometry)

Understanding how shapes fit together and how objects move in space

→ **Learning Trajectories: Geometry Activities** 

Developmental progression of geometry activities with assessment guidance and differentiation strategies.

→ **Young Mathematicians - Shapes and Geometry** 

Games, puzzles, and videos in English and Spanish.

→ **Hand 2 Mind - Shapes** 

Activities and lessons for shapes, patterns, and fractions.



Measurement, Time, and Data

Measuring, comparing, money, time, and graphing

→ **Hand 2 Mind – Measurement** 

Activities and lessons for working with lengths, time, money, and graphing data.

→ **Data Collection and Graphing for Young Children** 

Age-appropriate strategies for engaging children in data collection, organization, and interpretation.

→ **DREME – Data and Measurement** 

Data and measurement thinking in action.

→ **PBS Learning Media – Money as Math** 

Interactive games, short videos, and lessons that teach coin values, counting money, and making change.



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Curriculum & Implementation Supports

This resource guide complements various curricula used in Kindergarten and first-grade classrooms across Mississippi early childhood programs. The following curricula emphasize hands-on learning, real-world connections, and opportunities for children to explain their thinking.

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Common Math Curricula

→ Bridges in Mathematics (The Math Learning Center)

A comprehensive, activity-based curriculum that helps children build a deep understanding of math through visual models and interactive lessons.

→ Eureka Math 2

A widely used K – 5 curriculum that builds math understanding in logical progressions and connects concepts across grade levels.

→ Illustrative Mathematics

Problem-based curriculum emphasizing reasoning, conceptual understanding, and collaboration.

→ Go Math! (Houghton Mifflin Harcourt)

An engaging, standards-aligned program with interactive lessons and visual supports for building foundational math skills.

Professional Development and Support Tools

→ Head Start Early Childhood Learning & Knowledge Center (ECLKC)

Resources for supporting transitions into Kindergarten and first grade, including inclusive strategies for diverse learners.

→ Mississippi Department of Education – Office of Elementary Education and Reading

Provides standards, guidance, and professional development opportunities for math instruction in Mississippi classrooms.

→ National Council of Teachers of Mathematics (NCTM)

State-specific resources, professional development opportunities, and support for implementing high-quality early learning programs.



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Curriculum & Implementation Supports

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Implementation Support Tools

→ **NAEYC: Developmentally Appropriate Practice (DAP)** 

Guidelines for ensuring all mathematical activities and interactions are appropriate for children's developmental levels and learning needs.

→ **Division for Early Childhood (DEC): Recommended Practices** 

Evidence-based practices for supporting children with disabilities and developmental delays in inclusive mathematics learning environments.

→ **Learning Trajectories (Clements and Sarama)** 

Free online tool showing developmental progressions for early math learning and instructional strategies aligned with research.

Family Engagement Resources

→ **Family Math Night Materials - DREME Network**

Ready-to-use activities and planning guides for hosting family events that connect home and school learning.

→ **Math at Home**

Simple activities and strategies for families to support mathematical learning during everyday routines and activities.

→ **Bedtime Math**

Free, engaging math stories families can enjoy together to make math fun and part of daily routines.



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Sample Lesson Plan and Guidance

This shows how six- and seven-year-olds can build stronger number understanding through guided problem-solving, discussion, and hands-on tools. The lesson includes clear goals, materials, differentiation ideas, and tips for observing learning.

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Lesson Title

Building and Solving Number Stories – Exploring Addition and Subtraction

Choose a title that reflects both the math focus and the kind of problem-solving children will do.

Target Math Concept(s)

Addition and subtraction, problem-solving strategies, and explaining mathematical thinking

Choose 1-2 concepts from the Core Math Concepts section that match with your learning goals and children's developmental readiness.

→ See Section: Core Math Concepts at this Stage

Objective

Children will use objects, drawings, and number sentences to solve addition and subtraction problems. They will explain how they found their answers and create their own number stories showing how numbers can be combined or taken apart.

Write an objective that clearly states what children will know and be able to do by the end of the lesson.

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Sample Lesson Plan and Guidance

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Instructions

1. **Warm-Up:** Start with a short *number talk* (for example, “What’s one more than 8?” or “How many ways can we make 10?”).
2. **Introduce the Problem:** Present a story problem such as: “Jay has 7 toy cars. He gives 3 to his friend. How many cars does he have left?”
3. **Act It Out:** Have students use manipulatives to model the problem.
4. **Record with Numbers:** Guide them to represent it using symbols ($7 - 3 = 4$).
5. **Discuss Strategies:** Ask, “How did you figure that out?” and record strategies (counting back, using known facts, drawing).
6. **Try More Problems:** Use both addition and subtraction with different numbers and stories.
7. **Partner Work:** Children work in pairs to solve new problems and explain their thinking.
8. **Create a Story:** Ask students to make their own number story (addition or subtraction) using drawings or manipulatives.
9. **Share and Reflect:** Have children share one problem they created and explain how they solved it.
10. **Anchor Learning:** Record class strategies and examples on chart paper for future lessons.

Provide clear steps but allow space for exploration and student discovery.

→ **See Section:** Math Talk Examples



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Sample Lesson Plan and Guidance

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Vocabulary to Use

Addition, plus, equals, total, altogether, sum, more, join, combine, strategy

Include 8-10 key mathematical terms to emphasize throughout the lesson. Use them consistently and help children understand their meanings.

→ See Section: Math Talk Examples

Differentiation Ideas

- **Support:** Use smaller numbers (up to 10); act out each story; pair with a peer; provide sentence frames ("I started with __ and added __ to get __.").
- **Challenge:** Use larger numbers; introduce unknowns in different positions (for example, "__ + 3 = 10"); ask students to explain two ways to solve a problem.
- **For children with different needs:** Offer visual schedules, adaptive manipulatives, extra time, or technology tools to show understanding.



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Sample Lesson Plan and Guidance

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Mississippi College- and Career-Readiness Standards Alignment:

- **1.OA.A.1** – Solve addition and subtraction word problems within 20 using objects, drawings, and equations.
- **1.OA.C.5** – Relate counting to addition and subtraction.
- **1.OA.D.8** – Determine the unknown number in an addition or subtraction equation.
- **1.NBT.B.2** – Understand place value for tens and ones.
- **1.MP.1** – Make sense of problems and persevere in solving them.
- **1.MP.3** – Explain thinking and discuss others' reasoning.

List standards that reflect your instructional goals and match this age group.

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→ Looking Ahead: Ages 7–8 Years (2nd Grade)

As children move from first to second grade, their math understanding becomes more confident and connected. They begin to apply what they know about numbers to solve more complex problems and explain their thinking with greater detail.

You'll start to see children:

- Count and skip-count by 2s, 5s, 10s, and 100s to 1,000.
- Add and subtract within 100 using place value and different strategies.
- Understand place value for two- and three-digit numbers (hundreds, tens, and ones).
- Solve one- and two-step story problems using equations and logical reasoning.
- Work with coins and bills to show and count different amounts of money.
- Measure and compare length using inches, feet, centimeters, and meters.
- Tell and write time to the nearest five minutes.
- Collect, organize, and interpret data using bar graphs and picture graphs.
- Describe, draw, and build 2D and 3D shapes and explain how they relate to each other
- Explain their math thinking clearly and check their answers for reasonableness.

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→ Looking Ahead: Ages 7 – 8 Years (2nd Grade)

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In second grade, children move toward greater independence in problem-solving and begin to connect math ideas across topics. They're learning that there is more than one way to solve a problem and can choose strategies that make sense to them.

Even though their skills are becoming more advanced, they still benefit from hands-on learning, visual models, and real-world applications. Connecting math to daily life like cooking, shopping, or planning keeps learning meaningful and fun.

This stage is key for building confidence and laying the groundwork for multiplication, division, and more advanced reasoning in later grades.



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Links

Core Math Concepts at This Stage



Mississippi College
and Career Readiness
Standards - Mathematics

Progress Monitoring



Child Development:
Middle Childhood (6–8
Years) – CDC



Developmentally
Appropriate Practice
(DAP) – NAEYC



Harvard Center on the
Developing Child



American Academy
of Pediatrics –
HealthyChildren.org



Mississippi Resource &
Referral (R&R) Centers



Office of Special
Education – Mississippi
Department of Education



Mississippi Parent Training
and Information Center
(MSPTI)

Enrichment Resources by Core Math Concept



Operations – DREME



Numbers and Counting
– Family Math



Young Mathematicians



All About Patterns
– DREME



Mathematical Mindset
Tasks – YouCubed



Learning and Teaching
with Learning Trajectories



Geometry Activities –
Learning Trajectories



Shapes and Geometry –
Young Mathematicians



Shapes – Hand 2 Mind

Enrichment Resources by Core Math Concept (Continued)



Measurement – Hand 2 Mind



Data Collection and Graphing for Young Children



Data and Measurement – DREME



Money as Math – PBS Learning Media



Illustrative Mathematics

Curriculum and Implementation Supports



Bridges in Mathematics – The Math Learning Center



Eureka Math 2



Illustrative Mathematics



Go Math! – Houghton Mifflin Harcourt



Head Start Early Childhood Learning & Knowledge Center (ECLKC)



Office of Elementary Education and Reading – Mississippi Department of Education



National Council of Teachers of Mathematics (NCTM)



Developmentally Appropriate Practice (DAP) – NAEYC



Recommended Practices – Division for Early Childhood (DEC)



Learning Trajectories (Clements and Sarama)



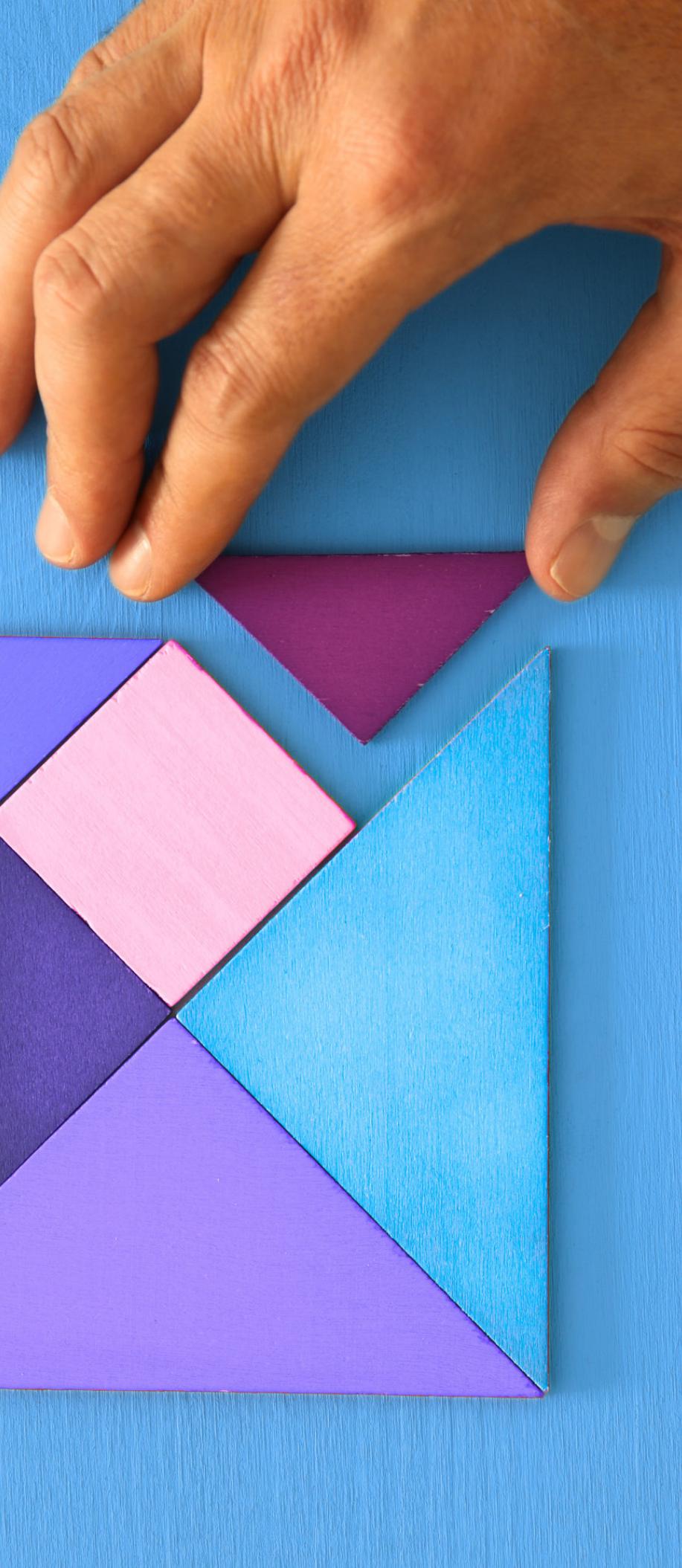
Family Math Night Materials – DREME Network



Math at Home



Bedtime Math



AGES

7-8

Using addition and subtraction confidently, recognizing place value, and solving word problems

In This Section

This section provides a complete, developmentally appropriate math resource for children ages 7 - 8 years.

Developmental Snapshot

How children in this stage typically engage with math

[Go to section >](#)

Math Talk Examples

Sample phrases to build vocabulary and support math thinking

[Go to section >](#)

Core Math Concepts

Key math ideas aligned with Mississippi's Early Learning Standards

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Enrichment Resources

Tools, printables, and links to extend learning

[Go to section >](#)

Instructional Strategies, Tools, and Materials

Practical guidance for educators, caregivers, and inclusive learning

[Go to section >](#)

Curriculum and Implementation Supports

Commonly used Pre-K curricula and educator development tools

[Go to section >](#)

Suggested Materials

Everyday objects and learning tools to support math exploration

[Go to section >](#)

Sample Lesson with Planning Guidance

A model lesson with prompts to help you create your own

[Go to section >](#)

Real-Life Math Moments

Ways to embed math into daily routines, transitions, and play

[Go to section >](#)

→ Looking Back

During the last stage, children built a strong sense of numbers and started using numbers in meaningful ways

They learned to count confidently and began adding and subtracting small numbers. Their understanding of place value grew as they recognized that numbers are made up of tens and ones.

Children also explored patterns, compared lengths and quantities, and started recognizing coins, shapes, and simple measurement tools. Word problems encouraged them to connect math to real-life situations. These skills helped children move from hands-on counting and visual supports to more mental math and creative thinking. They are now ready to build on that foundation by working with larger numbers, learning new operations like multiplication and division, and exploring more complex shapes and concepts.

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Developmental Snapshot

By this age, children are becoming confident problem solvers who can think through steps and explain their reasoning.

Their attention span and memory are growing, which allows them to stay focused longer and follow directions with multiple steps. They begin to see relationships between numbers and recognize patterns in how math works.

Children at this age enjoy challenges that let them explore ideas and see real-world connections. Their reading and writing skills also support math learning as they begin to read word problems and explain their thinking in words and numbers.



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★ Why This Stage Matters

At this stage, children are building the bridge between early math exploration and formal mathematical thinking. They're moving beyond counting and basic operations to understanding how numbers relate to one another and how math helps solve real-world problems.

This is also when children begin to develop math confidence because they see themselves as capable thinkers who can reason, explain, and solve problems. A strong foundation now supports future success in areas like multiplication, fractions, and geometry. By encouraging their curiosity, persistence, and a positive attitude helps children see math not as something to memorize, but as a tool they use every day.

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Core Math Concepts at This Stage

Seven- and eight-year-olds are ready to engage with formal mathematical concepts while still benefiting from concrete experiences and visual representations. Here are the key concepts children typically develop between ages 6 to 7:

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Number Sense and Operations

- Understand place value for two- and three-digit numbers (ones, tens, hundreds)
- Add and subtract within 100 using strategies such as counting on, making 10, or using number lines
- Begin learning basic multiplication and division as equal groups and repeated addition/subtraction
- Recognize odd and even numbers and relationships between addition and multiplication

Understanding Fractions and Measurement

- Identify simple fractions ($\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$) as equal parts of a whole
- Measure length using standard units (inches, feet, centimeters)
- Tell and write time to the nearest five minutes and understand a.m. and p.m.
- Work with money, recognize coins, combine values, and make change

Geometry and Spatial Thinking

- Identify and describe 2-D and 3-D shapes by their attributes (sides, angles, faces)
- Divide shapes into equal parts and relate this to fraction concepts
- Use reasoning to recognize shapes in different positions and real-world contexts.



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Core Math Concepts at This Stage

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Data and Patterns

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- Collect, organize, and interpret data using picture graphs and bar graphs
- Extend, create, and describe repeating and growing patterns
- Think carefully to figure out what comes next and explain how they know

For reference to full Mississippi College and Career Readiness Standards, visit:

Mississippi College and Career Readiness Standards - Mathematics 

Instructional Strategies, Tools, and Materials

Seven- and eight-year-olds learn best when math feels real and makes sense to them. They are ready for more step-by-step lessons, but they still need things they can see, touch, and talk about for help. Pictures, objects, and simple routines help them stay focused, build confidence, and understand how math fits into everyday life.



Educators

- Review basic facts regularly and encourage mental math strategies.
- Teach new skills step by step and show different ways to solve problems.
- Have daily math talks that let students explain how they think and listen to others.
- Use story problems, data charts, and classroom examples to show how math is used in real life.
- Provide quick practice activities to build fluency in addition and subtraction within 20 and begin introducing equal groups for multiplication and division.
- Use manipulatives and visual tools (Ex. base-ten blocks, number lines, and arrays) to make abstract ideas concrete.
- Encourage students to record and explain their thinking in journals or through drawings and models.
- Observe students as they work to know who needs extra support or more challenge.
- Create small group opportunities for problem solving, reasoning, and peer discussion.

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Instructional Strategies, Tools, and Materials

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Families & Caregivers

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- Ask your child to explain how they solved a problem or to show another way to do it.
- Connect math to everyday activities such as counting change, reading clocks, measuring ingredients, or comparing prices.
- Read books that use math ideas like time, shapes, or patterns (e.g., *The Doorbell Rang* or *How Many Seeds in a Pumpkin?*).
- Play board or card games that use strategy, counting, or number comparison.
- Encourage your child to keep a small math journal or notebook for doodles, charts, and discoveries.
- Let your child help with simple planning tasks, such as doubling a recipe or dividing snacks evenly.
- Praise effort, creativity, and persistence in problem-solving rather than just getting the right answer.

Inclusive Supports

- Provide clear, visual steps for problems with multiple steps using charts, color coding, or cue cards
- Use hands-on materials like linking cubes, play money, and fraction strips to reinforce concepts.
- Allow students to show what they know in different ways: drawing, building, speaking, or writing.
- Use familiar examples and culturally relevant stories to help children connect math to their lives.
- Pair students for math talks and cooperative games to support communication and confidence.
- Offer quiet areas for students who need reduced distractions or flexible seating.
- Include interactive apps, digital manipulatives, or short videos to reinforce core ideas and support visual learners.



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Instructional Strategies, Tools, and Materials

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Inclusive Supports (Continued)

- Offer quiet areas for students who need reduced distractions or flexible seating.
- Include interactive apps, digital manipulatives, or short videos to reinforce core ideas and support visual learners.

Suggested Materials



Manipulatives

- Base-ten blocks, number lines, linking cubes
- Pattern blocks, **tangrams** ⓘ, and **3D shapes** ⓘ
- Fraction circles and bars for early fraction ideas
- Play money, dice, and dominoes
- Measurement tools (rulers, thermometers, and scales)



Games & Activities

- Board and card games (e.g., Uno, Yahtzee, or Race to 100)
- Puzzles that build thinking and **spatial skills** ⓘ
- Math scavenger hunts or real-world problems challenges



Technology Tools

- Simple math apps that build number sense and problem-solving skills
- Interactive whiteboards or **digital manipulatives** ⓘ
- Interactive websites



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Real-Life Math Moments and Activities

Children ages 7–8 are ready to apply what they know in real-world ways. They can collect data, compare quantities, solve problems, and explain how they find their answers. These activities help children see how math connects to their daily lives while strengthening reasoning, communication, and problem-solving skills.



Educators

- Encourage students to use math for real purposes such as measuring classroom objects, planning or project, or tracking the results of a science experiment.
- Include short math talks where students share how they solved a problem and listen to others' ideas.
- Use real-world data: survey classmates about favorite books or school lunches and create bar or picture graphs together.
- Connect math to reading, science, and social studies through projects in other subjects.
- Set up a class store or token system where students earn, count, and spend classroom money to practice value and making change.
- Have students read maps, estimate travel time, or plan routes during geography or field trip lessons.
- Introduce projects that let children make predictions, record data, and compare results such as tracking plant growth or charting the weather.
- Encourage reflection through brief journal prompts like "How did math help you today?"

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Real-Life Math Moments and Activities

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Families & Caregivers

- Involve your child in household problem-solving, such as planning meals, counting supplies, or comparing grocery prices.
- Ask your child to estimate, then check their answers together: "How many minutes until dinner?" or "How many steps to the car?"
- Read clocks, count money, and talk about how numbers are used in everyday decisions.
- Play games that use numbers, strategy, or logic like Connect Four, Yahtzee, or Sudoku for kids.
- Encourage your child to track something they're interested in like daily temperatures, pet weights, or time spent reading and make a simple chart or graph together.
- Use family activities like road trips or yard projects to explore length, distance, and time.
- Celebrate mistakes as learning moments. Ask, "what could we try differently next time?"
- Cook or bake together using measuring cups and talk about halves, fourths, and equal parts.

Inclusive Supports

Use pictures, diagrams, or checklists to help children plan and complete projects step by step.

Use digital supports, such as virtual manipulatives or interactive math games, to reinforce real-world problem-solving.

Offer flexible timing or quiet spaces for children who need additional processing or focus time

Include materials, games, and examples that reflect different cultures and family experiences.

Offer several ways for children to show their thinking through drawings, graphs, oral explanations, or hands-on demonstrations.

Provide vocabulary visuals and bilingual word cards to support diverse learners.

Pair children with different strengths so they can learn from each other.

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“ Math Talk Examples

Children at this age are becoming confident math thinkers who can explain their reasoning, describe relationships between numbers, and use math words to make sense of problems.

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Asking thoughtful questions helps children talk through their thinking, test ideas, and discover new strategies.



Number and Counting

“ You have 8 stickers and gave away 3. How many do you have left? How did you figure that out?

“ I see you solved $6 + 4$ by counting on. Can you show me another way to solve this problem?

“ This number is 47. What does the 4 represent? What does the 7 represent?

“ You said $5 + 3 = 8$. Can you create a story problem that matches this equation?

“ What happens if we start counting at 23 and skip-count by 5s?

“ If you know $3 + 3 = 6$, how can that help you solve 3×2 ?



Patterns and Number Relationships

“ Your pattern is growing by 2 each time: 2, 4, 6, 8. What would the tenth number be?

“ I notice you sorted these into three equal groups. How many are in each group?

“ If this pattern continues, how many squares would be in the sixth design?

“ Can you explain the rule for your pattern using your own words?

“ How could you keep your pattern going to 30?



Geometry and Spatial Reasoning

“ How is a square different from a rectangle? What's the same about them?

“ You built a structure with 12 cubes. Can you build something different using the same number of cubes?

“ When I turn this shape, does it change into a different shape? Why or why not?

“ How many triangles can you find in this hexagon?

“ This shape has 6 sides. What could you call it?



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“ Math Talk Examples

Continued



Measurement, Data, and Money

“

Our plant grew 2 inches this week. How tall is it now?

“

You measured the table with paper clips and got 15. Why might someone else get 18?

“

Looking at our graph, which snack did most children choose? How can you tell?

“

How could we figure out which container holds more water?

“

You have 35 cents. What coins could you use to make that amount?

“

How many quarters do you need to make one dollar?

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Problem Solving and Reasoning

“

There are 15 children and 4 tables. If we want the same number at each table, how many will sit together?"

“

Your first strategy didn't work. What else could you try?

“

You and your partner got different answers. Let's figure out why.

“

Can you explain how you know your answer makes sense?

“

Our graph shows most students read 4 books last week. How could we find the total number of books?

“

If each shelf holds 10 books, how many shelves will we need for 65 books?



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Progress Monitoring: Observing Development and Knowing When to Ask for Help

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Seven- and eight-year-olds are expanding how they think about numbers and problem-solving. They show progress not only by getting the right answers but by explaining their reasoning, choosing strategies, and connecting math to real-life situations.

Teachers and families can support healthy progress by noticing how children approach problems, not just what they can do. Watch for steady growth and seek support early if a child consistently struggles with number sense, understanding directions, or remembering math facts.

If you ever have concerns about a child's development or learning pace, there are many trusted tools and programs that can help families and teachers track growth and find extra support when needed.

Helpful Resources:

→ [**CDC – Child Development: Middle Childhood \(6–8 Years\)**](#)

Information about how children grow and learn during the early school years, including thinking, social, and emotional development.

→ [**NAEYC – Developmentally Appropriate Practice \(DAP\)**](#)

Guidance for teachers and families on supporting learning for children birth through age 8.

→ [**Harvard Center on the Developing Child**](#)

Explains how brain development continues through the early school years and how experiences support learning and resilience.

→ [**American Academy of Pediatrics \(HealthyChildren.org\)**](#)

Offers age-specific guidance for 6-8-year-olds, including learning, behavior, and health topics.

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Progress Monitoring: Observing Development and Knowing When to Ask for Help

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→ **Mississippi Resource & Referral (R&R) Centers** 

Connect families and educators with child development resources, training, and local programs. While services focus on early childhood (birth-5), many centers also support families with young school-age children.

→ **Mississippi Department of Education – Office of Special Education** 

Provides guidance and support for families and schools when children may need extra help with learning or development. Includes information about evaluations, early intervention, and the Multi-Tiered System of Supports (MTSS) process.

→ **Mississippi Parent Training and Information Center (MSPTI)** 

Helps families understand their child's educational rights and navigate special education or support services.



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Enrichment Resources by Core Math Concept

These research-based tools and activities provide evidence-based approaches to supporting math learning through structured instruction, guided practice, and meaningful application.



Numbers and Operations

Place value, addition, subtraction, and early multiplication

→ **DREME - Operations**

Lessons and videos detailing: why and what of operations, mathematics of operations, development of children's thinking on operations, and supports for classroom practice.

→ **Family Math – Numbers and Counting**

Daily routines, activities, and games for families.

→ **Young Mathematicians**

Classroom and home math learning activities that promote children's math thinking and persistence.

→ **Illustrative Math (Grades 1 – 2 Resources)**

Free and standards-aligned lessons that emphasize reasoning, modeling, and multiple strategies for solving problems.



Operations and Algebraic Thinking (Patterns and Relationships)

Recognizing, extending, and describing patterns and rules while connecting them to addition, subtraction, and equal groups

→ **DREME - All About Patterns**

Research-based strategies for developing pattern recognition and algebraic reasoning in young children.

→ **YouCubed: Mathematical Mindset Tasks**

Engaging, open-ended tasks that encourage flexible thinking and pattern recognition.

→ **Learning and Teaching with Learning Trajectories**

Activities on patterns, structures, and algebraic thinking.

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Geometry and Spatial Reasoning (2-D and 3-D Shapes, Equal Parts, and Movement)

Understanding shapes, how they fit together, and how objects move and change position

- [Learning Trajectories: Geometry Activities](#) ↗
Progressions and activities showing how children move from recognizing shapes to analyzing their attributes and relationships..
- [Young Mathematicians - Shapes and Geometry](#) ↗
Printable games, puzzles, and videos (available in English and Spanish) that strengthen shape recognition and spatial reasoning.
- [Hand 2 Mind – Shapes](#) ↗
Hands-on lessons linking geometry, fractions, and spatial visualization to everyday objects and spaces.



Measurement and Data (Including Money & Time)

Measuring, comparing, collecting data, and working with time and money

- [Hand 2 Mind – Measurement and Data](#) ↗
Activities and lessons for working with lengths, time, money, and graphing data.
- [DREME – Data and Measurement](#) ↗
Data and measurement thinking in action.
- [PBS Learning Media – Money as Math](#) ↗
Interactive games, short videos, and lessons that teach coin values, counting money, and making change.



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Curriculum & Implementation Supports

This resource guide complements curricula used in first- and second-grade classrooms across Mississippi early childhood and elementary programs.

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These curricula build on early learning foundations by emphasizing conceptual understanding, hands-on application, and opportunities for children to reason, explain, and connect math to real-world contexts. All are aligned with the Mississippi College- and Career-Readiness Standards (MCCRS) for Mathematics, which emphasize fluency, problem-solving, and mathematical reasoning.

Common Math Curricula

→ Bridges in Mathematics (The Math Learning Center)

A comprehensive, activity-based curriculum that helps children build a deep understanding of math through visual models and interactive lessons.

→ Eureka Math 2

A widely used K – 5 curriculum that builds math understanding in logical progressions and connects concepts across grade levels.

→ Illustrative Mathematics

Problem-based curriculum emphasizing reasoning, conceptual understanding, and collaboration.

→ Go Math! (Houghton Mifflin Harcourt)

An engaging, standards-aligned program with interactive lessons and visual supports for building foundational math skills.

Professional Development and Support Tools

→ Mississippi Department of Education – Office of Elementary Education and Reading

Provides standards, guidance, and professional development opportunities for math instruction in Mississippi classrooms.

→ Head Start Early Childhood Learning & Knowledge Center (ECLKC)

Resources and training materials that support transitions into early elementary grades and inclusive learning environments.



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Curriculum & Implementation Supports

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Professional Development and Support Tools (Continued)

→ National Council of Teachers of Mathematics (NCTM)

Professional learning resources, classroom supports, and state-aligned materials promoting effective mathematics teaching practices.

Implementation Support Tools

→ NAEYC: Developmentally Appropriate Practice (DAP)

Guidelines for designing math experiences that are challenging yet appropriate for children's developmental levels.

→ Division for Early Childhood (DEC): Recommended Practices

Evidence-based practices for supporting children with disabilities and developmental delays in inclusive mathematics learning environments.

→ Learning Trajectories (Clements and Sarama)

Free online tool showing developmental progressions for early math learning and instructional strategies aligned with research.

Family Engagement Resources

→ Family Math Night Materials - DREME Network

Ready-to-use activities and planning guides for hosting family events that connect home and school learning.

→ Math at Home

Simple activities and strategies for families to support mathematical learning during everyday routines and activities.

→ Bedtime Math

Free, engaging math stories families can enjoy together to make math fun and part of daily routines.



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Sample Lesson Plan and Guidance

This lesson shows how seven- and eight-year-olds can strengthen number understanding through problem-solving, reasoning, and collaborative discussion. It includes clear goals, materials, differentiation ideas, and tips for observing learning.

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Lesson Title

Solving Real-World Problems Using Place Value and Multiple Strategies

Choose a title that reflects both the math focus and the kind of reasoning students will use.

Target Math Concept(s)

Addition and subtraction within 100, place value reasoning, and explaining mathematical thinking

Select 1-2 concepts from the Core Math Concepts section that match your instructional focus and children's readiness.

→ See Section: Core Math Concepts at this Stage

Objective

Children will use base-ten blocks, drawings, and number sentences to solve addition and subtraction problems within 100. They will explain their reasoning, show different strategies, and create their own real-world story problems to represent relationships between numbers.

Write an objective that clearly states what children will know and be able to do by the end of the lesson.



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Sample Lesson Plan and Guidance

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Instructions

1. **Warm-Up:** Begin with a short number talk, such as: "What's 10 more than 56?" or "How could you make 75 using tens and ones?"
2. **Introduce the Problem:** Present a real-world scenario: "There are 46 books in the library bin. The class adds 27 more. How many books are there now?"
3. **Model with Tools:** Have students use base-ten blocks or place value charts to show their work.
4. **Record with Numbers:** Guide students to represent the problem symbolically ($46 + 27 = 73$) and discuss regrouping.
5. **Discuss Strategies:** Ask, "How did you figure that out?" and record multiple strategies (counting on by tens, using place value, or composing tens).
6. **Try More Problems:** Offer subtraction and multi-step problems, including missing addends or comparing quantities.
7. **Partner Work:** Students work in pairs to solve new problems and explain their thinking using drawings, words, and equations.
8. **Create a Story:** Invite students to write or draw their own number story using two-digit numbers.
9. **Share and Reflect:** Have pairs share one story they created and the strategy they used to solve it.
10. **Anchor Learning:** Record student strategies and examples on chart paper to display and revisit during future math talks.

Provide clear steps but allow space for exploration and student discovery.

→ **See Section:** Math Talk Examples



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Sample Lesson Plan and Guidance

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Vocabulary to Use

Place value, tens, ones, regroup, add, subtract, difference, total, equation, strategy, explain

Include 8-10 key mathematical terms to emphasize throughout the lesson. Use them consistently and help children understand their meanings.

→ See Section: Math Talk Examples

Differentiation Ideas

- **Support:** Use smaller two-digit numbers; act out each story; use base-ten blocks or number lines; provide sentence frames ("I started with __ and added __ to get __").
- **Challenge:** Introduce problems with three addends or missing parts (e.g., " $__ + 36 = 72$ "); extend to 1000 using hundreds blocks; ask students to write two different strategies for solving.
- **For children with different needs:** Offer visual steps, adaptive manipulatives, or digital tools (e.g., virtual base-ten blocks). Use flexible grouping and provide extra processing time when needed.



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Sample Lesson Plan and Guidance

Continued

Mississippi College- and Career-Readiness Standards Alignment:

- **2.OA.A.1** – Use addition and subtraction within 100 to solve one- and two-step word problems.
- **2.NBT.B.5** – Fluently add and subtract within 100 using place value strategies and properties of operations.
- **2.NBT.B.7** – Add and subtract within 1000 using concrete models and place value understanding.
- **2.MP.1** – Make sense of problems and persevere in solving them.
- **2.MP.3** – Construct viable arguments and critique the reasoning of others.

List standards that reflect your instructional goals and match this age group.

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Mississippi College
and Career Readiness
Standards - Mathematics

Progress Monitoring



Child Development:
Middle Childhood
(6–8 Years) – CDC



Developmentally
Appropriate Practice
(DAP) – NAEYC



Harvard Center on the
Developing Child



American Academy
of Pediatrics –
HealthyChildren.org



Mississippi Resource &
Referral (R&R) Centers



Office of Special
Education – Mississippi
Department of Education



Mississippi Parent Training
and Information Center
(MSPTI)

Enrichment Resources by Core Math Concept



Operations – DREME



Numbers and Counting
– Family Math



Young Mathematicians



All About Patterns
– DREME



Mathematical Mindset
Tasks – YouCubed



Learning and Teaching
with Learning Trajectories



Geometry Activities –
Learning Trajectories



Shapes and Geometry –
Young Mathematicians



Shapes and Spatial
Awareness – Hand 2 Mind

Enrichment Resources by Core Math Concept (Continued)



Measurement and Data
- Hand 2 Mind



Illustrative Math (Grades 1 – 2 Resources)



Data and Measurement
- DREME



Money as Math – PBS Learning Media

Curriculum and Implementation Supports



Bridges in Mathematics
- The Math Learning Center



Eureka Math 2



Illustrative Mathematics



Go Math! – Houghton Mifflin Harcourt



Head Start Early Childhood Learning & Knowledge Center (ECLKC)



Office of Elementary Education and Reading
- Mississippi Department of Education



National Council of Teachers of Mathematics (NCTM)



Developmentally Appropriate Practice (DAP) – NAEYC



Recommended Practices
- Division for Early Childhood (DEC)



Learning Trajectories (Clements and Sarama)



Family Math Night Materials – DREME Network



Math at Home



Bedtime Math

Glossary

This glossary provides simple explanations and examples of important early math terms used throughout the guide. These terms can help educators, families, and caregivers better understand and support young children's early math learning.

Cardinality

Knowing that the last number said when counting tells how many things are in the group.

Example: When a child counts "1, 2, 3, 4, 5" blocks and knows there are 5 blocks total.

Counting with one-to-one correspondence

Matching one number to each object as you count to make sure every object is counted once and only once.

Example: Touching each block one at a time while saying "one, two, three" to count them.

Extending patterns

Continuing a pattern by figuring out what comes next based on the order you see.

Example: If the pattern is red, blue, red, blue, you would add another red next.

Inquiry-based exploration

Learning by asking questions, trying things out, and discovering answers through hands-on activities.

Example: Giving children different objects and asking, "What sinks and what floats?" so they can test and find out.

Manipulatives

Hands-on objects that children can move and use to learn math ideas.

Example: Blocks, counting bears, or beads used to practice counting or building shapes.

One-to-one correspondence

Matching one number to each object while counting to be sure every object is counted once.

Example: Touching each block one at a time while saying “one, two, three” to count them.

Scaffold

Giving support by breaking learning into small steps to help children succeed.

Example: First helping a child count to 5, then encouraging them to try counting to 10.

Spatial awareness activities

Games or tasks that help children understand where things are and how to move around them.

Example: Playing “Simon Says” with directions like “stand behind the chair” or building with blocks to make a tower.

Spatial thinking

Understanding how objects move, fit, and relate to each other in space.

Example: Figuring out how to fit all the puzzle pieces into a puzzle board.

Subitizing

Quickly seeing and knowing how many things are in a group without counting one by one.

Example: Looking at three apples on a table and knowing there are three without counting 1-2-3.



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