

**Building
Blocks**
PRE-K MATH



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Welcome to *Building Blocks*® PreK Math



Building Blocks PreK Math is designed to support teachers and nurture the early mathematical development of young learners. Our program seamlessly integrates educational content into children's daily routines, harnessing the power of play, curiosity, and their innate cognitive abilities as the building blocks for a strong mathematical foundation.

Building Blocks PreK Math provides a variety of hands-on activities, meaningful discussions, stimulating games, and enriching literary experiences—all carefully crafted to engage children and foster foundational mathematical thinking. Our program provides guidance to educators on using questions and discussions to deepen children's mathematical understanding. Teachers will gain valuable insights into how individual children learn math, better equipping them to nurture mathematical growth and monitor progress effectively.

Building a Solid Foundation in Math

Building Blocks® PreK Math was funded by the National Science Foundation with the goal of empowering all children to build a solid foundation in math. The program gives teachers the tools to deliver rich and motivational math instruction, including:

- Daily hands-on learning activities with manipulatives.
- Easy-to-use lesson plans for whole-group, small-group, and center activities.
- Differentiated instruction to meet the needs of all children.
- Developmentally appropriate technology and digital practice activities.
- Ongoing assessment to inform instruction.
- Consistent alignment with state and national early childhood standards in the key mathematical strands of:
 - Numbers
 - Geometry
 - Measurement and Data
 - Operations and Algebraic Thinking





Tools for Teaching

Building Blocks® PreK Math provides all the components you need to teach the program and engage early learners in mathematics. To support dual language teaching and learning, all *Building Blocks* PreK Math resources are available in both English and Spanish.

Teacher's Edition

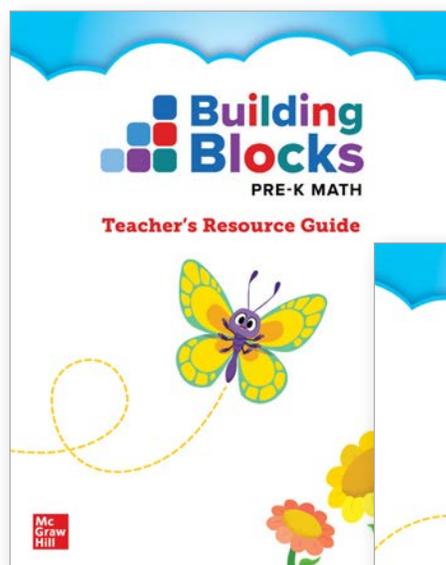
Access comprehensive background information and complete lesson plans, including explicit suggestions on how to develop math concepts.

Assessment Guide

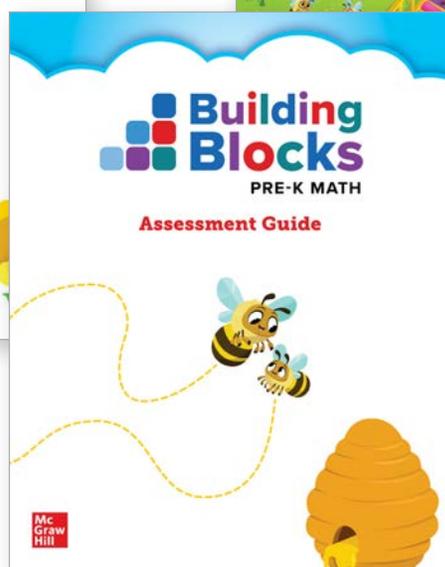
Gauge children's understanding with a variety of assessments including Weekly Record Sheets, Small Group Record Sheets, and Learning Trajectory Records.

Teacher's Resource Guide

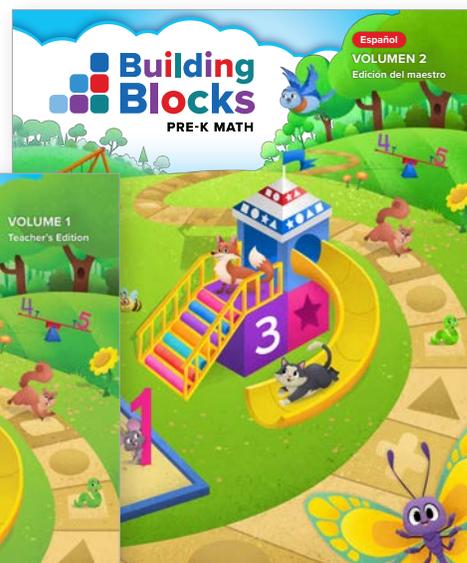
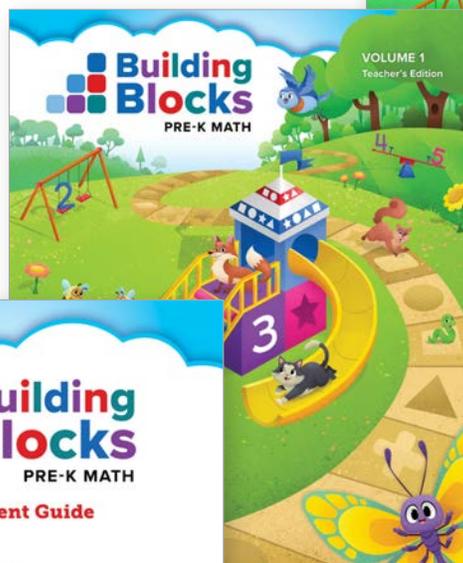
Enhance instruction with key resources including blackline masters and family letters.



Teacher's Resource Guide



Assessment Guide



Teacher's Edition

Tell the Story of Math

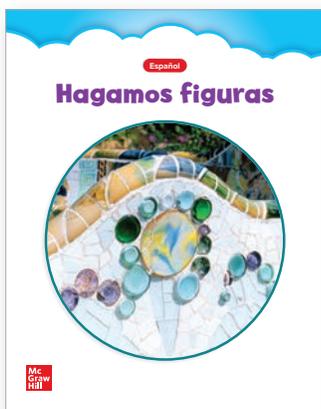
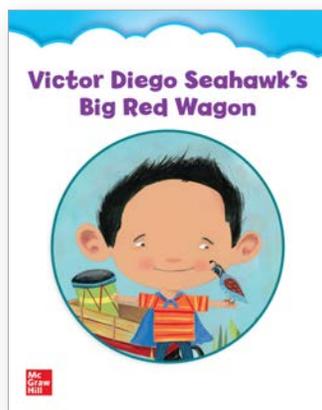
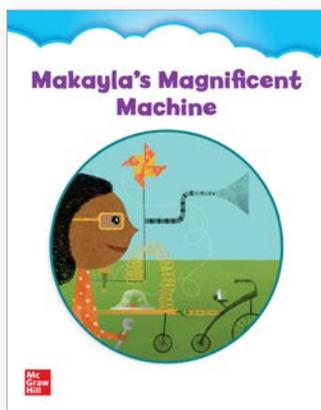
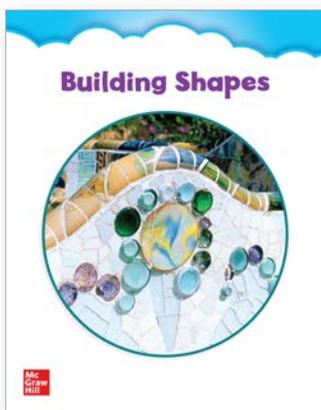
Bring math to life and encourage a love of reading with four Big Books featuring engaging, math-related literature children will want to experience again and again. Each title is available in print as a large format book and as a digital eBook for display on a whiteboard or large screen.

English Titles

- Building Shapes
- Makayla's Magnificent Machine
- Victor Diego Seahawk's Big Red Wagon
- Where's One?

Spanish Titles

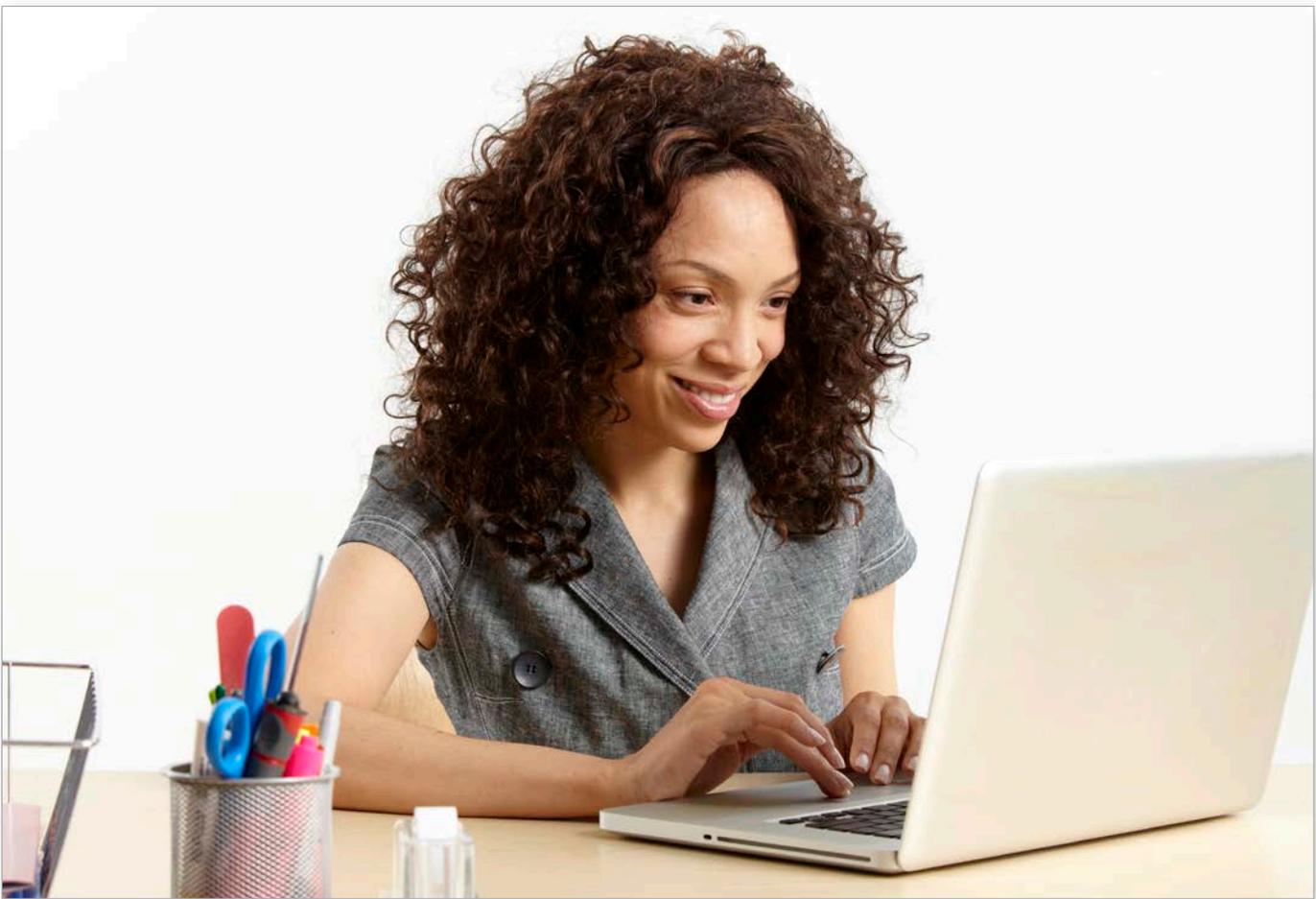
- Hagamos figuras
- La máquina magnífica de Makayla
- La gran carreta roja de Victor Diego Halcón Pescador
- ¿Dónde hay uno?



Plan and Teach With Confidence

The Teacher Experience functions as the digital hub for planning, teaching, and observing student progress. It includes:

- A fully accessible, responsive Teacher's Edition eBook featuring reflowable text.
- A Teacher's Resource Guide housing printable blackline masters and family letters.
- An Assessment Guide with printable observation records for ongoing assessment.
- Big Book eBooks that can be displayed for whole-class presentations.
- *Building Blocks*® digital practice that extends learning and builds confidence.



Engaging, Effective Digital Activities

Engaging activities are essential to *Building Blocks*® PreK Math. Each digital practice activity addresses a specific developmental level of the math learning trajectories. The assignable activities can be previewed by the teacher to demonstrate for children. They are included as center activities throughout each week of instruction.

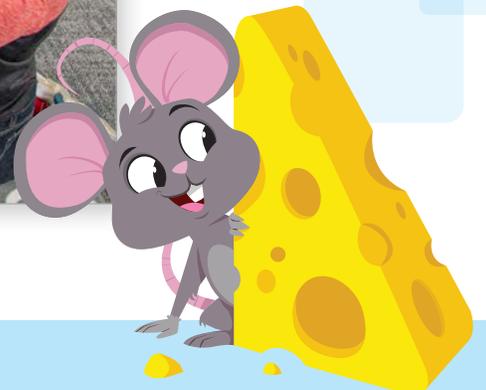
Building Blocks digital practice includes two types of activities:

- **Learning Activities** present skill-based practice to quickly assess and build proficiency.
- **Free Explore** allows children an opportunity to learn through play with digital manipulatives.



Bring Math to Life with Hands-On Learning

Building Blocks® PreK Math includes daily opportunities for children to explore and integrate mathematical thinking through hands-on learning. These activities provide concrete experiences with math concepts as children interact with manipulatives and learn through play.



The *Building Blocks*® PreK Math Manipulative Kit encourages developmental learning by using concrete modeling to build children’s conceptual understanding. The kit includes program-specific manipulatives for each lesson, that help provide mathematical meaning and build confidence for young learners who are in the process of understanding the world around them.



Manipulative Kit Contents

- 0–5 Number Cubes
- 5–10 Number Cubes
- Linking Cubes
- Geometric Solids
- Two-Color Counters
- Transportation Counters
- Dot Cubes
- Inch Cubes
- Stringing Beads
- Pattern Blocks
- Two-Color Shape Set
- Mr. Mixup Puppet
- Game Board
- Dino Counters
- Farm Animal Counters
- Counting Cards
- Numeral Cards
- Dot Cards

Empowering Math Leaders

With the Professional Learning Environment, every teacher can foster foundational math skills in their classroom. On-demand professional development resources for *Building Blocks*® PreK Math include an online course, author videos, and additional teacher support materials.

Extended Professional Development

Online Course: Teachers have access to professional learning modules that highlight lesson features and key instructional routines.

Author Video Series: In these videos, our authors share their research of mathematical development in young children and its application in daily instruction.

Live (Virtual and/or In-Person) Initial Training Sessions: These sessions are implemented based on plans developed with the district to prepare teachers to use curriculum resources effectively.



Our Distinguished Authors



Dr. Douglas Clements

Dr. Douglas Clements, Distinguished University Professor and Kennedy Endowed Chair in Early Childhood Learning at the University of Denver, is widely regarded as a major scholar in the field of early childhood mathematics education, with equal relevance to the academy, to the classroom, and to the educational policy arena. At the national level, his contributions have led to the development of new mathematics curricula, teaching approaches, teacher training initiatives, and models of scaling up interventions. His contributions have also had a tremendous impact on educational planning and policy, particularly in the area of mathematical literacy and access. Dr. Clements has served on seven national research committees for the National Academies of Sciences, Engineering (NASEM, including NRC and IOM), as well as on the President's National Mathematics Advisory Panel and the Common Core State Standards committee (NGA, CCSSO), and is co-author of each of the reports.



Dr. Julie Sarama

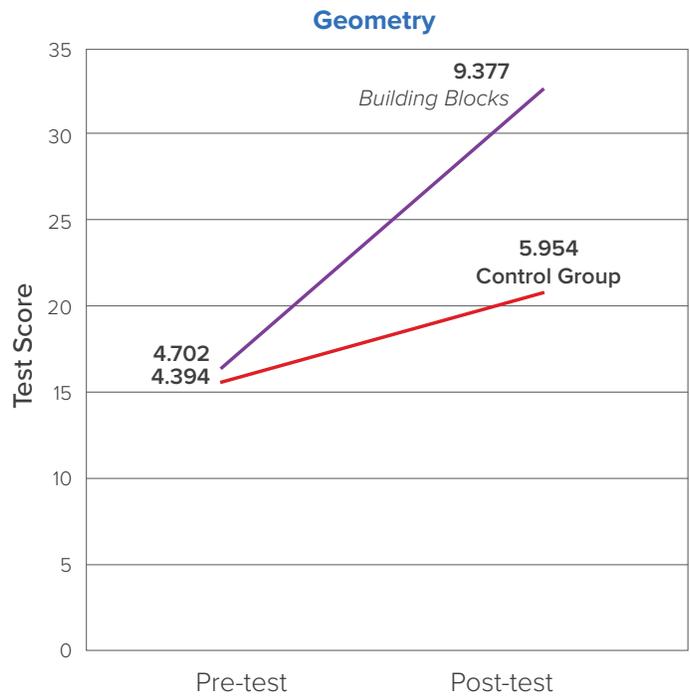
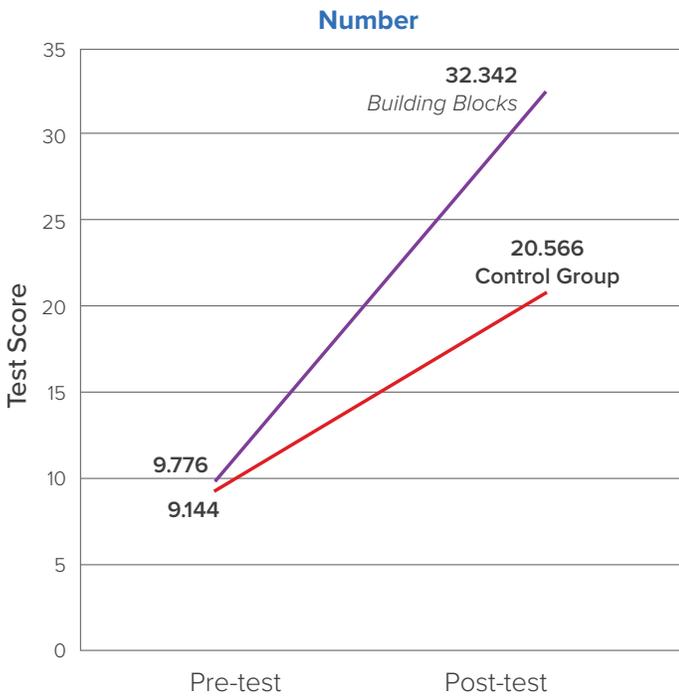
Dr. Julie Sarama, Distinguished University Professor and Kennedy Endowed Chair in Innovative Learning Technologies at the University of Denver, conducts research on young children's development of mathematical concepts and competencies, the implementation and scale-up of educational reform, professional development models and their influence on student learning, and the implementation and effects of software environments in mathematics classrooms. These studies have been published in more than 115 refereed articles, 10 books, 160 chapters, and over 100 additional publications. Dr. Sarama has directed over 30 projects funded by the National Science Foundation (NSF), the U.S. Department of Education's Institute of Education Sciences (IES), the National Institute of Health (NIH), and the Office of Special Education Programs (OSEP).



See the Results



Building Blocks[®] is based on research conducted in a well-defined, rigorous, and complete fashion. Efficacy studies indicate strong positive effects with achievement gains near or exceeding those recorded for individual tutoring. The program's development was supported by a grant from the National Science Foundation.

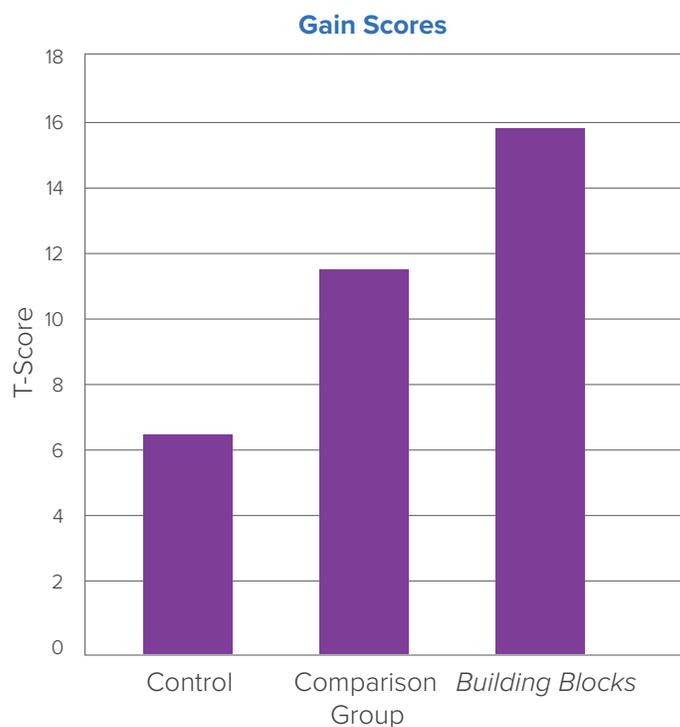


Results demonstrate that two classrooms using *Building Blocks* significantly outperformed two control classrooms.



Research and Efficacy

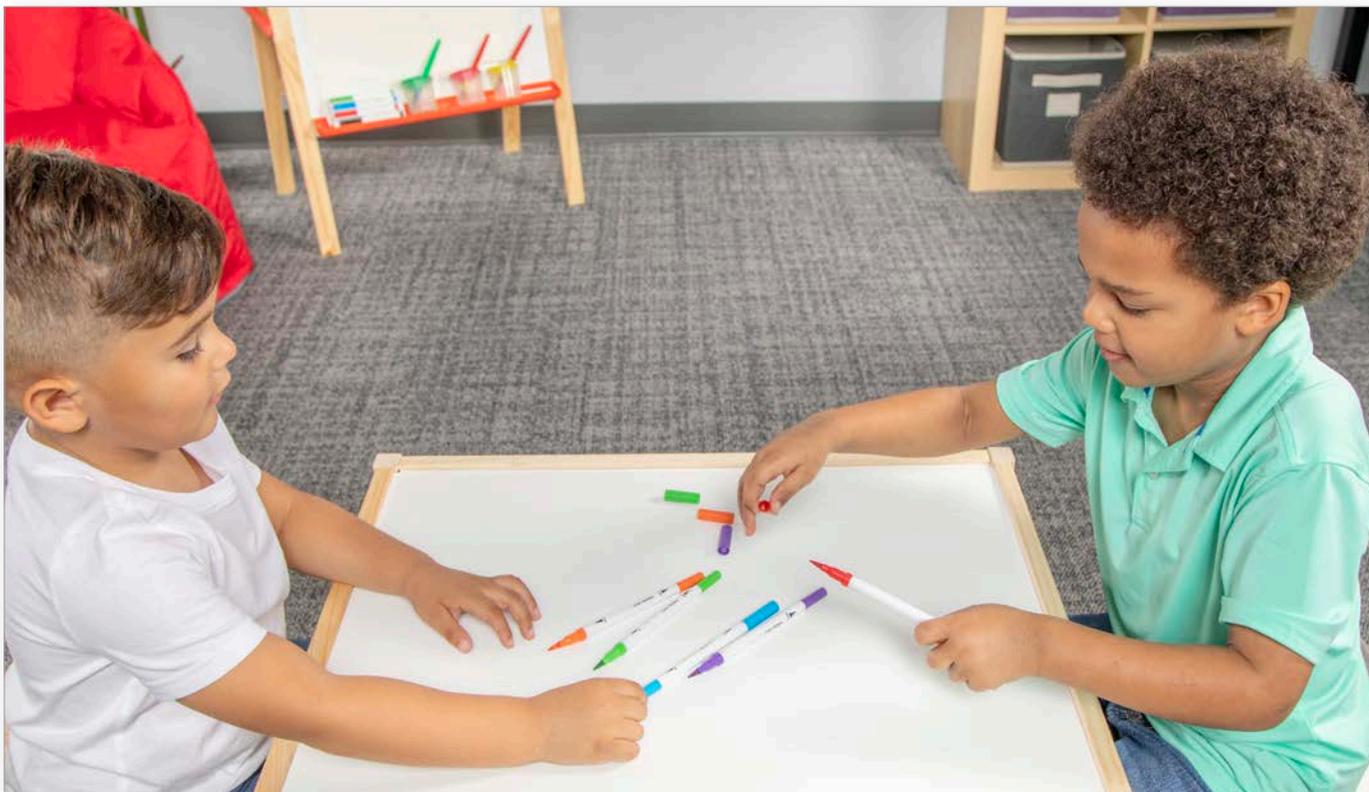
- 1. A Summative Evaluation** tested the program's effectiveness in several classrooms. Results indicated that *Building Blocks*[®] increases knowledge of multiple essential mathematical concepts and skills.
- 2. Preschool Curriculum Evaluation Research** tested *Building Blocks* PreK Math in 40 classrooms that received no additional support or training. Mathematics achievement subsequently increased significantly.
- 3. The TRIAD/*Building Blocks* Studies** tested the program against a comparable preschool math program and a no-treatment control group. All classrooms were randomly assigned in accordance with the "gold standard" of scientific evaluation. *Building Blocks* children significantly outperformed both the control and the comparison groups. Again, effect sizes doubled those usually considered "strong" and matched those of individual tutoring.



Harness Powerful Learning Trajectories

Children follow natural developmental progressions in learning, developing mathematical ideas in their own way. Curriculum research has revealed sequences of activities that are effective in guiding children through these levels of thinking. These developmental paths are the basis for *Building Blocks*® PreK Math learning trajectories. Learning trajectories have three parts: a mathematical goal, a developmental path through which children develop to reach that goal, and a set of activities matched to each of those levels that help children develop the next level. Thus, each learning trajectory has levels of understanding, each more sophisticated than the last, with tasks that promote growth from one level to the next.

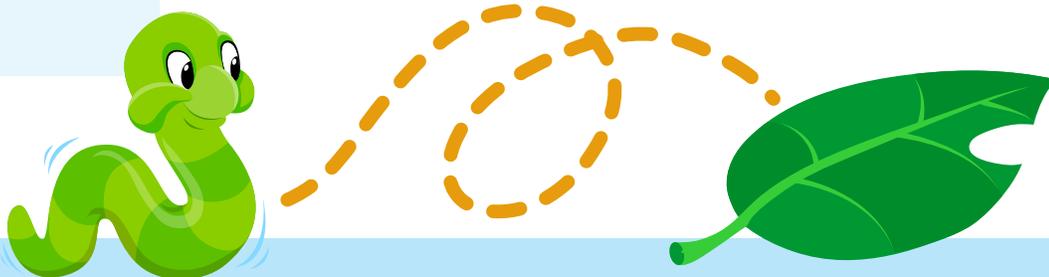
The *Building Blocks* PreK Math learning trajectories give simple labels, descriptions, and examples of each level. Complete learning trajectories describe the goals of learning, the thinking and learning processes of children at various levels, and the learning activities in which they might engage. Detailed developmental level tables can be found in the *Building Blocks* PreK Math Teacher's Edition.





Frequently Asked Questions

- 1. Why use learning trajectories?** Learning trajectories allow teachers to build children’s mathematical knowledge along natural developmental pathways to help them move through stages of understanding. Because all teaching and learning in *Building Blocks*® PreK Math is tied to a specific learning trajectory level, we know that children will be able to successfully work within their developmental capacities.
- 2. When are children “at” a level?** Children are at a certain level when most of their behaviors reflect the thinking—ideas and skills—of that level. As children learn new skills, they may continue to show behaviors from the previous trajectory level as well as some from the next level.
- 3. Can children work at more than one level at the same time?** Yes, although most children work mainly at one level or in transition between two levels (naturally, if they are tired or distracted, they may operate at a much lower level). Levels are not “absolute stages.” They are “benchmarks” of complex growth that represent distinct ways of thinking.
- 4. How do these developmental levels support teaching and learning?** The levels help teachers and curriculum developers, assess, teach, and sequence activities. Teachers who understand learning trajectories and the developmental levels that are at their foundation are more effective and efficient. Through planned teaching and also encouraging informal, incidental mathematics, teachers help children learn at an appropriate and deep level.
- 5. Why do the learning trajectories keep changing?** Learning trajectories are living things! That is, we are always learning more and adding new ideas as we continue our research and deepen our understanding of how children naturally develop math skills. Changes to the learning trajectories build on new information from our research and wisdom of expert practice. We have found that children who are provided high-quality mathematics experiences are capable of developing to levels one or more years ahead of their peers.



Learning and Teaching with Learning Trajectories

Learning and Teaching with Learning Trajectories is a website created by *Building Blocks*® PreK Math authors Dr. Doug Clements and Dr. Julie Sarama. The site includes detailed information about each learning trajectory, how children think and learn about mathematics, and support for teaching early childhood math.

The website houses information in the following sections:

- **Learning trajectories** provide detailed information on each learning trajectory including developmental milestones for each level, recommended games and activities, and alignments to state and national standards.
- **Games** offer author-created games that allow children to learn via play and explore digital manipulatives.
- **Research** provides opportunities to explore additional research and projects from Dr. Clements and Dr. Sarama.
- **Resources** include a variety of resources for teachers, families, and professional development, including accommodations to support all children.
- **Support** provides user assistance for the website including account setup, a FAQ document, and user manual.

Visit www.learningtrajectories.org to learn more!



Developmentally Appropriate Resources

Building Blocks® PreK Math supports instruction for both three-year-old and four-year-old preschool classrooms. Teachers can use the weekly objectives and learning trajectory correlations to adapt lessons based on the developmental needs of their class. Additional information on how to differentiate instruction can be found in the appendix of the Teacher's Editions.

Flexible Implementation Options

The weekly overview provides suggestions for both three-day or five-day implementations. For a five-day-per-week schedule, daily lessons and pacing are divided by day in the Weekly Planner section of the Teacher's Edition.

For a three-day-per-week program, teachers use the lessons for Monday, Tuesday, and Thursday only. Both implementation options provide teachers with robust lesson plans that engage children according to natural learning progressions.



Lesson Overview

Building Blocks® PreK Math is organized into 30 weeks of activities and concept development. Each lesson starts with an overview and a five-day planner to prepare for the week ahead.

Teaching for Understanding

provides information about how children learn the key concepts.

Teaching for Understanding

Understanding number sense involves subitizing (the instant recognition of small groups) to determine how many in a group; counting to determine how far along a path; counting or subitizing to recognize how many actions in a sequence; and counting, subitizing, or one-to-one corresponding to compare amounts greater or less than. The first three might seem the same; however, children may recognize numbers as how many in a group but not understand how to count how many steps along a path. When children connect the meanings, they form a strong foundation for all future mathematical learning.

Counting Games

Games can provide good experiences for children. Aside from providing a highly motivational setting for counting, games give meaning to counting. Children know if they roll a 3, they move 3 spaces. In doing so, they translate one representation of 3 (three dots) to a very different one (three moves on a game board). Thus learning the greater the number they roll, the farther they move. Games also help children develop social and language skills by taking turns and playing fairly.

Rhythmic Patterns and Number Sense

A new type of activity this week involves observing a sequence of actions and reproducing them, and it introduces a new kind of subitizing—temporal subitizing, which is hearing a rhythmic pattern, learning it, and reproducing it. This is another important way to understand number sense. Later, when children count up 3 from 6, they will be able to “feel three beats” and count “6...7, 8, 9.”

Meaningful Connections

Children should start to literally see that numbers and the numerals that represent them carry meaning. As children identify amounts in small groups, they begin to recognize the parts of a whole and may begin to apply that knowledge to activities, games, and other daily routines.

Big Ideas outline the key concepts that will be developed throughout the week.

WEEK

8

Overview

Big Ideas!

- counting
- one-to-one correspondence
- comparing numbers
- subitizing



What's Ahead

outlines where children are headed and how teachers can facilitate their learning.

What's Ahead



In the next few weeks, children continue to build their number sense, yet the focus will shift to geometry. They will learn more about two-dimensional (flat) and three-dimensional (solids, prisms) shapes. Children will build images of these shapes and will distinguish and describe why a certain shape is or is not a member of a class of shapes.

OVERVIEW

Literature Connections

These books help develop counting.

- *Ten Pigs: An Epic Bath Adventure* by Derek Anderson
- *Ten Minutes to Bed Little Monster* by Rhiannon Fielding
- *Charley Harper's Count the Birds* by Charley Harper
- *Counting Creatures* by Sharon King-Chai
- *1 is One* by Tasha Tudor

Literature Connections

identify specific trade books that can enhance mathematics.

Math Throughout the Year

provides math strategies and props that teachers can use throughout the day to build math understanding.

How Children Learn to Count and Compare

Knowing where children are on the learning trajectory for counting, comparing, and subitizing and what the next steps are helps facilitate their development. Children who easily surpass these trajectory levels might be challenged by larger quantities and encouraged to assist other children.

Object Counting

WHAT TO LOOK FOR What size groups can the child label and/or produce?

Counter (Small Numbers) Accurately counts objects in a line to 5, and answers "how many?" with the last number counted. When objects are visible, especially with small numbers, begins to understand cardinality.

128 Week 8 | Overview

Producer (Small Numbers) Counts out objects to 5. Recognizes that counting is relevant to situations in which a certain number must be placed. Produces a group of 4 objects.

Counter (10) Counts structured arrangements of objects to 10. May be able to read and write numerals to represent 1–10, and tell the number just before or after another number. Verbal counting to 20 is developing.

Comparing and Ordering

WHAT TO LOOK FOR What types of groups does the child identify?

Counting Comparer (Same Size) Accurate comparison via counting but only when objects are similar in size and in groups up to 5.

Counting Comparer (5) Compares with counting even when larger group's objects are smaller; figures out how many more or less.

Subitizing

WHAT TO LOOK FOR Does the child instantly recognize groups of at least 5?

Perceptual Subitizer to 5 Instantly recognizes collections of up to 5 when shown briefly and verbally.

Math Throughout the Year



Math Throughout the Year activities are recommended to build on the mathematical skills highlighted in each week. Here are suggested activities for WEEK 8.

COUNTING JAR

A counting jar holds a specified number of items for children to count. Use the same jar all year, changing its small amount of items weekly. Have children spill the items to count them.

NUMERALS EVERY DAY

Numerals are all around us. Help children notice and read numerals on common items throughout the day, such as clocks, food containers, street signs, room numbers, newspapers, and so on.



Center Preview

Technology Center

Get your classroom Technology Center ready for Garden Pizzazz 2 and Garden Pizzazz Free Explore from the **Building Blocks** software.

After you introduce Garden Pizzazz 2 and Garden Pizzazz Free Explore, each child should complete the activities individually as you (or an assistant) monitor and guide him or her periodically. Ideally, each child will have at least ten minutes of computer time at least twice during the week. Use children's center time as an opportunity for assessment.

Hands On Math Center

This week's Hands On Math Center activities are Compare Game, Get Just Enough, Find the Number, Places Scenes, and Pizza Game 1. Supply the center with these materials: Counting Cards, dark containers, various counters (including round), paper plates, Numeral Cards, Pizza Game 1



Center Preview helps teachers prepare for the week's Technology and Hands-On Math Centers.

Multilingual Learner Support

The Multilingual Learner Support pages for each week provide strategies to help teachers support children from every language background with math concepts and vocabulary.

Preview Big Ideas offer strategies on how to support children’s understanding of math concepts in their primary language.

Multilingual Learner Scaffolds provide differentiated support based on children’s English language proficiency.

OVERVIEW

Multilingual Learner Scaffolds

Entering/Emerging
To help children understand comparative and superlative adjectives, such as *bigger/biggest* and *smaller/smallest*, use nonlinguistic representations, including photos or drawings. Also, consider recasting the Reflect question on Tuesday to be a yes/no question, such as *Is this numeral [insert numeral]?*

Developing/Expanding
Preteach any unknown vocabulary, such as *flip the cards* and *deal the cards*. Tell children that words like *bigger* and *smaller* (comparative adjectives) are used when they are comparing only two things. Tell them that words like *biggest* and *smallest* (superlative adjectives) are used when three or more things are being compared.

Bridging/Reaching
When answering the Reflect questions throughout this week, encourage children to explain how they know that they have the correct answer. Encourage them to use *because* clauses to give reasons for their responses.

Spanish Cognates

These words take advantage of what children and their families may know in their home language in order to accelerate the acquisition of math concepts in English. Other languages may also have cognates with English through shared Latin, Arabic, and Greek roots and affixes.

English	Spanish
train	tren
combinations	combinaciones
plates	platos
numeral	numeral
line	línea
different	diferente

Spanish Cognates and Access Vocabulary provide information to support vocabulary acquisition and develop English language proficiency.

Multilingual Learner Support

Preview Big Ideas

When content lessons are taught mainly in English, an excellent strategy to maximize comprehension is to briefly preview the big ideas in the child’s primary language so that he or she can better comprehend English instruction.

Esta semana vamos a contar otra vez. Vamos a practicar comparar grupos de objetos para decidir cuál grupo sea más grande, tiene más objetos, y cuál grupo sea más pequeño, cuál tiene menos objetos.

This week we are going to do lots more counting. We are going to practice comparing groups of objects to figure out which group is bigger (has more objects) and which group is smaller (has fewer objects).

Teacher Note

Many math concepts such as subtraction, estimation, and equality rely on comparison. Learning how to discuss these concepts requires knowledge of English academic language. In English, comparatives and superlatives are formed by adding the endings *-er* and *-est* in monosyllabic adjectives. For example, someone may say “She is taller than her brother.” Practice this form with Multilingual Learners while you show them examples of each one.

POSITIVE	COMPARATIVE	SUPERLATIVE
Big	Bigger	Biggest
Small	Smaller	Smallest

Access Vocabulary

Multilingual Learners may benefit from clarification of some common phrases and words that proficient English speakers probably know. Occasionally words have more than one meaning or are used in potentially puzzling idiomatic expressions. Before or during the lessons this week, be sure to clarify the following words and phrases:

- deal the cards** to distribute one card to each player in the game
- matches** when a numeral and a group of objects go together; are the same
- Am I correct?** Do I have the correct answer?

Math Mindset

The Math Mindset pages provide teachers with opportunities to develop oral language, interpersonal communication, and other key skills as they relate to the hands-on learning and math concepts each week.

Each week's **Math Mindset** skill directly connects to the hands-on learning activities and interpersonal skills needed to complete the activity.

Listen and Look for Evidence of Math Mindset provides teachers with guidance on what to look for during hands-on learning.

Building Math Mindset provides strategies for encouraging children to use each week's Math Mindset skill.



Math Mindset

Self-Development: Regulating Motor Behavior 

Regulating motor behavior is one type of behavioral control that children demonstrate in math instruction. During this week's hands-on activities, children will count out a designated number by jumping safely in place and by moving game pieces precisely on a gameboard. As children regulate their motor behavior, they will be better able to focus on numbers and quantities. However, their ability to jump or move only in a controlled way may require practice. Help children manage impulses to jump or move haphazardly to boost concentration for counting.

Listen and Look for Evidence of Math Mindset
 Watch as children jump in place or move game pieces to connect number with quantity. Do they slow down or speed up their jumping/movement to regulate their own motor behavior? Do they jump/move with intention to act out the numbers? Help children monitor their pace to regulate motor behavior. Throughout the week, ask children: *How did you remember to wait to jump until after seeing the number? What can you do so that you only move the number of spaces shown on the cube? How did you know how many times to jump/move?*

Building Math Mindset. Encourage children to control their motor behavior during the Number Jump game by changing ways to jump. For example, say, "You were like a bunny, jumping three times fast! Now, jump four times slow like a turtle!" Practice having children start and stop movement directions in games, such as Simon Says, to improve competence in regulation of motor behavior.





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Weekly Planner

The lesson planner provides objectives, learning trajectories, correlating activities, materials, and program-specific resources to prepare for each week.

Learning trajectories are the observable, natural developmental progressions in learning. Curriculum research has revealed effective sequences of activities to guide children through these levels of thinking. These developmental paths are the basis for *Building Blocks*® learning trajectories.

Learning trajectories have three parts:

1. A mathematical goal.
2. A developmental path along which children progress to reach that goal.
3. A set of activities matched to each of the levels of thinking in that path that help children develop the next higher level of thinking.

WEEKLY PLANNER

Learning Trajectories

Objectives

- To produce a group of one to five objects
- To make a group equal in number to another group using one-to-one correspondence
- To count objects (or "steps" in a path) organized in a line up to 5
- To compare two groups to determine whether or not they have the same small number of objects
- To quickly recognize the number of objects in a small group when shown only briefly

	Development Path	Instructional Activities
Object Counting	Corresponder	
	Counter (Small Numbers)	<ul style="list-style-type: none"> • Listen and Count • Garden Pizzazz 2 • Number Race • Garden Pizzazz Free Explore • Listen and Copy • Pizza Game 1
	Producer (Small Numbers)	<ul style="list-style-type: none"> • Number Race • Garden Pizzazz 2 • Pizza Game 1 • Number Jump • Places Scenes
	Counter (10)	<ul style="list-style-type: none"> • Number Jump • Pizza Game 1
Comparing and Ordering	Counter and Producer (10+)	
	Matching Comparer	
	Counting Comparer (Same Size)	<ul style="list-style-type: none"> • Compare Game
	Counting Comparer (5)	<ul style="list-style-type: none"> • Compare Game • Get Just Enough • Find the Number
Subitizing	Counting Comparer (10)	
	Perceptual Subitizer to 4	
	Perceptual Subitizer to 5	<ul style="list-style-type: none"> • Listen and Copy
	Conceptual Subitizer to 5	<ul style="list-style-type: none"> • Where's My Number?
	Conceptual Subitizer to 7	

Use this chart to plan for your specific class schedule. If you have your prekindergarteners for only three days, complete ★ Monday, ★ Tuesday, and ★ Thursday of the week.

Pacing

★ **Monday** 40



★ **Tuesday** 40



Wednesday 40



★ **Thursday** 40



Friday 40





WEEK
8

Work Time

Whole Group	Small Group	Centers	Program Resources
Numeral 6 Listen and Count <i>Materials:</i> • counting book • coffee can • marbles		Software Activities • Garden Pizzazz 2 • Garden Pizzazz Free Explore Compare Game <i>Materials:</i> Counting Cards* Get Just Enough <i>Materials:</i> • paintbrushes and cups • plastic bottles and tops • small boxes and toy cars • toy cups and saucers	Big Book Where's One? Assessment Weekly Record Sheet
Listen and Copy Where's My Number? <i>Materials:</i> • Numeral Cards* • various counters*	Number Jump <i>Materials:</i> Numeral Cards* Number Race <i>Materials:</i> • game board* • game pieces* • Number Cube*	Find the Number <i>Materials:</i> • dark containers • various counters* • paper plates • Numeral Cards*	Assessment Small Group Record Sheet
Number Jump Listen and Count <i>Materials:</i> • counting book • coffee can • marbles		Compare Game Get Just Enough Places Scenes <i>Materials:</i> • various counters* • Numeral Cards* Pizza Game 1 <i>Materials:</i> • round counters* • Number Cube* • paper plates	Teacher's Resource Guide • Places Scenes • Pizza Game 1 Assessment Weekly Record Sheet
Listen and Copy Where's My Number? <i>Materials:</i> • Numeral Cards* • various counters*	Number Jump <i>Materials:</i> Numeral Cards* Number Race <i>Materials:</i> • game board* • game pieces* • Number Cube*		Teacher's Resource Guide • Places Scenes • Pizza Game 1 Assessment Small Group Record Sheet
Number Jump Listen and Count <i>Materials:</i> • counting book • coffee can • marbles			Teacher's Resource Guide • Places Scenes • Pizza Game 1 • Family Letter Week 8 Assessment Weekly Record Sheet

*provided in Manipulative Kit

Week 8 | Weekly Planner 133

Building Blocks® PreK Math

activities are carefully designed and sequenced to address each level of the learning trajectories in the following areas of mathematics:

- Numbers
- Geometry
- Measurement & Data
- Operations and Algebraic Thinking

As children successfully complete activities, they are presented with the challenge of the next developmental level.

Daily Lessons

Each daily lesson follows a consistent structure to make planning and teaching easier.

- 1. Whole Group** includes a warm-up activity to get children ready for math.
- 2. Work Time** outlines the Technology Center, the Hands-On Math Center, and Small Group on Tuesday and Thursday.
- 3. Reflect** engages children in summarizing and analyzing their mathematical thinking.
- 4. Assess** highlights informal assessment opportunities each day.

Every lesson includes a variety of small group, whole group, and individual activities.



Tuesday

Objectives

- To produce a group of one to five objects
- To make a group equal in number to another group using one-to-one correspondence
- To count objects (or "steps" in a path) organized in a line up to 5
- To compare two groups to determine whether or not they have the same small number of objects
- To quickly recognize the number of objects in a small group when shown only briefly

Materials

- Numeral Cards*
- various counters*
- game board*
- game pieces*
- Number Cube*
- dark containers
- paper plates

*provided in Manipulative Kit

1 Whole Group

Warm-Up: Listen and Copy

Clap 1 to 5 times, and tell children to clap the same number of times in the same way. For example, clap quickly, slowly, or with pauses to create patterns, such as clap, clap, pause, clap. Repeat with different small numbers.

Where's My Number?

- Show a Numeral Card to children. Secretly put that many counters in one of your hands; put a different amount in your other hand. Hold out your closed hands, open them for two seconds, and then close them.
- Have children point to the hand with the number of counters that matches the Numeral Card. Repeat with other small numerals.

2 Work Time

Small Group

Number Jump

- Show a number of fingers, and write that numeral for children to see. Tell children to jump safely that many times. Count the jumps in unison. Repeat with another appropriate number.
- As a variation, here is the subitizing version: hide your hands behind your back, tell children to jump only if you show three fingers, and show your fingers for only two seconds.
- To simplify, use smaller numbers, and say each number as you show your fingers. For a challenge, show finger combinations on both hands.

Number Race

- Demonstrate the game by playing it with a child. The game has two players or two teams with two players. Each game is played with one game board, one Number Cube, and a game piece for each player.
- Player One rolls the Number Cube and announces the number that was rolled. Player Two checks whether Player One said the correct number. Player One moves that many spaces.
- Player Two takes his or her turn, following the same steps. The game continues until all players reach the end.
- Review directions as needed. When applicable, help players on each team take turns by guiding Player One on Team One, then Player One on Team Two, and so on until the teams can proceed without you.



136 Week 8 | Tuesday

Building Blocks® PreK Math offers a wealth of support for monitoring student progress and differentiating instruction.

Monitoring Student Progress	
If... children struggle during Number Race,	Then... provide a Number Cube up to 3 only.
If... children excel during Number Race,	Then... provide a Number Cube 3 to 8, or ask players to tell you how many it would take to land on a particular space or to finish the game.



Research in Action provides bite-size professional development embedded in the lesson.

Technology Center Introduce Garden Pizzazz Free Explore from the *Building Blocks* software. This activity provides additional practice recognizing numerals and counting. Each child should complete the activity this week.

Hands On Math Center Children may continue Monday's activities and/or complete this one.

- Find the Number**
- Before children get to the center, conceal several pizzas (paper plates), each with a different number of toppings (round counters) under its own dark container.
 - Place a Numeral Card in plain view. Children lift each container to count toppings until they find the pizza that matches the card's numeral. They can show their answer to a classmate or an adult.
 - To simplify the activity, reduce the number of containers, or display the pizzas uncovered. For a challenge, have children work in pairs, making their own groups, and have one another, for example, "Find the 10."

3 Reflect **3**
Show a familiar numeral, and ask children:
What numeral is this? How do you know?
 Children might say: I know that is a (insert numeral) because of how it looks.

4 Assess **4**
 During Small Group activities, use the Small Group Record Sheet from **Assessment** to observe and record children's progress.

Research in Action
 The trajectory levels *Counter (10)* and *Producer (Small Numbers)* are close and children may develop *Producer (Small Numbers)* at the same time or even after *Counter (10)*.

Looking Ahead
 For tomorrow's Hands On Math Center, provide copies of the Places Scenes and Pizza Game 1 activity sheet from the *Teacher's Resource Guide*.

Building Blocks® digital practice activities help develop children's math proficiencies along the learning trajectories.



Ongoing assessments provide teachers with actionable data to gauge children's proficiency and inform instruction.

Weekly Wrap-Up

The Wrap-Up for each week includes Assess and Differentiate strategies for teachers based on where children are in that week's key learning trajectories.

Throughout the week, you will informally and formally **Gather Evidence** of student understanding.

Each week, take time to **Summarize Findings** by reflecting on assessments and making plans for follow-up.

Using the learning trajectory table, you can **Differentiate Instruction** based on the individual needs of each child.

WEEK **8**

Wrap-Up

Assess and Differentiate

A Gather Evidence
Review children's progress in mathematics by looking at the Weekly Record Sheets (Monday, Wednesday, Friday) and the Small Group Record Sheets (Tuesday, Thursday) from this past week.

B Summarize Findings
Using **Assessment** record sheets, summarize and analyze assessment data for each child based on your weekly observations and Record Sheets. Such information helps determine where each child is on the math trajectory for counting, comparing, and subitizing.

C Differentiate Instruction
Once you have seen a child exhibit specific levels of the trajectory, begin to encourage and work with that child toward the next level. Refer to Appendix A for individualized instruction opportunities.

Object Counting	
If... the child can count five items and tell how many with the last number counted,	Then... Counter (Small Numbers) Accurately counts objects in a line to 5, and answers "how many?" with the last number counted. When objects are visible, especially with small numbers, begins to understand cardinality.
If... the child can produce up to five items,	Then... Producer (Small Numbers) Counts out objects to 5. Recognizes that counting is relevant to situations in which a certain number must be placed. Produces a group of 4 objects.
If... the child can count groups up to 10 in a line,	Then... Counter (10) Counts structured arrangements of objects to 10. May be able to read and write numerals to represent 1–10, and tell the number just before or after another number. Verbal counting to 20 is developing.
Comparing and Ordering	
If... the child can compare only similarly-sized items in small groups,	Then... Counting Comparer (Same Size) Accurate comparison via counting but only when objects are similar in size and in groups up to 5.
If... the child can compare various small groups, sometimes labeling one as having more or less,	Then... Counting Comparer (5) Compares with counting even when larger group's objects are smaller; figures out how many more or less.
Subitizing	
If... the child can instantly identify groups up to 5,	Then... Perceptual Subitizer to 5 Instantly recognizes collections of up to five when shown briefly and verbally names the number of items.
If... the child can label some arrangements up to 10,	Then... Conceptual Subitizer to 5 Verbally labels all arrangements to about 5, shown only briefly, by seeing the parts and quickly knowing the whole.



144 Week 8 | Wrap-Up

Continuous Progress Monitoring

Building Blocks® PreK Math is rich in opportunities and resources to conduct comprehensive assessments that inform instruction. Goals of assessment are to improve instruction by informing teachers about the effectiveness of their lessons, promote children's growth by identifying where they need additional instruction and support, and recognize accomplishments. The Assessment Guide provides a variety of assessments to help determine what children know and to inform instruction.

Types of Assessment

- **Small-Group Record Sheets:** Use the Small-Group Record Sheets to guide observations and interactions with children during each small-group activity.
- **Weekly Record Sheets:** Use the Weekly Record Sheets to record children's participation and progress on math activities.
- **Learning Trajectory Records:** Use the Learning Trajectory Record to gather information on where each child may be in a given learning trajectory.





Week 8 Sampler

This section features the Teacher Edition pages from Week 8 of *Building Blocks*® PreK Math, including assessment record sheets and a family letter. The Teacher Resource Guide, Big Book, and *Building Blocks*® digital practice activities for this week can be accessed through the Digital Sample. Instructions for accessing the Digital Sample can be found on page 53.

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WEEK

8

Overview

Big Ideas!

- counting
- one-to-one correspondence
- comparing numbers
- subitizing



What's Ahead



In the next few weeks, children continue to build their number sense, yet the focus will shift to geometry. They will learn more about two-dimensional (flat) and three-dimensional (solids, prisms) shapes. Children will build images of these shapes and will distinguish and describe why a certain shape is or is not a member of a class of shapes.

Teaching for Understanding

Understanding number sense involves subitizing (the instant recognition of small groups) to determine how many in a group; counting to determine how far along a path; counting or subitizing to recognize how many actions in a sequence; and counting, subitizing, or one-to-one corresponding to compare amounts greater or less than. The first three might seem the same; however, children may recognize numbers as how many in a group but not understand how to count how many steps along a path. When children connect the meanings, they form a strong foundation for all future mathematical learning.

Counting Games

Games can provide good experiences for children. Aside from providing a highly motivational setting for counting, games give meaning to counting. Children know if they roll a 3, they move 3 spaces. In doing so, they translate one representation of 3 (three dots) to a very different one (three moves on a game board). Thus learning the greater the number they roll, the farther they move. Games also help children develop social and language skills by taking turns and playing fairly.

Rhythmic Patterns and Number Sense

A new type of activity this week involves observing a sequence of actions and reproducing them, and it introduces a new kind of subitizing—temporal subitizing, which is hearing a rhythmic pattern, learning it, and reproducing it. This is another important way to understand number sense. Later, when children count up 3 from 6, they will be able to “feel three beats” and count “6...7, 8, 9.”

Meaningful Connections

Children should start to literally see that numbers and the numerals that represent them carry meaning. As children identify amounts in small groups, they begin to recognize the parts of a whole and may begin to apply that knowledge to activities, games, and other daily routines.

OVERVIEW

Literature Connections

These books help develop counting.

- **Ten Pigs: An Epic Bath Adventure**
by Derek Anderson
- **Ten Minutes to Bed Little Monster**
by Rhiannon Fielding
- **Charley Harper's Count the Birds**
by Charley Harper
- **Counting Creatures**
by Sharon King-Chai
- **1 is One**
by Tasha Tudor

How Children Learn to Count and Compare

Knowing where children are on the learning trajectory for counting, comparing, and subitizing and what the next steps are helps facilitate their development. Children who easily surpass these trajectory levels might be challenged by larger quantities and encouraged to assist other children.

Object Counting

WHAT TO LOOK FOR What size groups can the child label and/or produce?

Counter (Small Numbers) Accurately counts objects in a line to 5, and answers “how many?” with the last number counted. When objects are visible, especially with small numbers, begins to understand cardinality.

Producer (Small Numbers) Counts out objects to 5. Recognizes that counting is relevant to situations in which a certain number must be placed. Produces a group of 4 objects.

Counter (10) Counts structured arrangements of objects to 10. May be able to read and write numerals to represent 1–10, and tell the number just before or after another number. Verbal counting to 20 is developing.

Comparing and Ordering

WHAT TO LOOK FOR What types of groups does the child identify?

Counting Comparer (Same Size) Accurate comparison via counting but only when objects are similar in size and in groups up to 5.

Counting Comparer (5) Compares with counting even when larger group's objects are smaller; figures out how many more or less.

Subitizing

WHAT TO LOOK FOR Does the child instantly recognize groups of at least 5?

Perceptual Subitizer to 5 Instantly recognizes collections of up to 5 when shown briefly and verbally names the number of items.

Conceptual Subitizer to 5 Verbally labels all arrangements to about 5, shown only briefly, by seeing the parts and quickly knowing the whole.

Numerals

WHAT TO LOOK FOR Can the child read numerals?

Numeral Recognizer Reads single-digit numerals, recognizing them as symbolizing number words.

Math Throughout the Year

Math Throughout the Year activities are recommended to build on the mathematical skills highlighted in each week. Here are suggested activities for **WEEK 8**.

COUNTING JAR

A counting jar holds a specified number of items for children to count. Use the same jar all year, changing its small amount of items weekly. Have children spill the items to count them.

NUMERALS EVERY DAY

Numerals are all around us. Help children notice and read numerals on common items throughout the day, such as clocks, food containers, street signs, room numbers, newspapers, and so on.



Center Preview

Technology Center

Get your classroom Technology Center ready for Garden Pizzazz 2 and Garden Pizzazz Free Explore from the **Building Blocks** software.

After you introduce Garden Pizzazz 2 and Garden Pizzazz Free Explore, each child should complete the activities individually as you (or an assistant) monitor and guide him or her periodically. Ideally, each child will have at least ten minutes of computer time at least twice during the week. Use children's center time as an opportunity for assessment.

Hands On Math Center

This week's Hands On Math Center activities are Compare Game, Get Just Enough, Find the Number, Places Scenes, and Pizza Game 1. Supply the center with these materials: Counting Cards, dark containers, various counters (including round), paper plates, Numeral Cards, Pizza Game 1 activity sheets, and Number Cubes. Please refer to the Weekly Planner for Get Just Enough's materials.



Garden Pizzazz 2

OVERVIEW

Multilingual Learner Scaffolds

Entering/Emerging

To help children understand comparative and superlative adjectives, such as *bigger/biggest* and *smaller/smallest*, use nonlinguistic representations, including photos or drawings. Also, consider recasting the Reflect question on Tuesday to be a yes/no question, such as *Is this numeral [insert numeral]?*

Developing/Expanding

Preteach any unknown vocabulary, such as *flip the cards* and *deal the cards*. Tell children that words like *bigger* and *smaller* (comparative adjectives) are used when they are comparing only two things. Tell them that words like *biggest* and *smallest* (superlative adjectives) are used when three or more things are being compared.

Bridging/Reaching

When answering the Reflect questions throughout this week, encourage children to explain how they know that they have the correct answer. Encourage them to use *because* clauses to give reasons for their responses.

Spanish Cognates

These words take advantage of what children and their families may know in their home language in order to accelerate the acquisition of math concepts in English. Other languages may also have cognates with English through shared Latin, Arabic, and Greek roots and affixes.

English	Spanish
train	tren
combinations	combinaciones
plates	platos
numeral	numeral
line	línea
different	diferente

Multilingual Learner Support

Preview Big Ideas

When content lessons are taught mainly in English, an excellent strategy to maximize comprehension is to briefly preview the big ideas in the child's primary language so that he or she can better comprehend English instruction.

Esta semana vamos a contar otra vez. Vamos a practicar comparar grupos de objetos para decidir cuál grupo sea más grande, tiene más objetos, y cuál grupo sea más pequeño, cuál tiene menos objetos.

This week we are going to do lots more counting. We are going to practice comparing groups of objects to figure out which group is bigger (has more objects) and which group is smaller (has fewer objects).

Teacher Note

Many math concepts such as subtraction, estimation, and equality rely on comparison. Learning how to discuss these concepts requires knowledge of English academic language. In English, comparatives and superlatives are formed by adding the endings *-er* and *-est* in monosyllabic adjectives. For example, someone may say "She is taller than her brother." Practice this form with Multilingual Learners while you show them examples of each one.

POSITIVE	COMPARATIVE	SUPERLATIVE
Big	Bigger	Biggest
Small	Smaller	Smallest

Access Vocabulary

Multilingual Learners may benefit from clarification of some common phrases and words that proficient English speakers probably know. Occasionally words have more than one meaning or are used in potentially puzzling idiomatic expressions. Before or during the lessons this week, be sure to clarify the following words and phrases:

deal the cards to distribute one card to each player in the game

matches when a numeral and a group of objects go together; are the same

Am I correct? Do I have the correct answer?

Math Mindset

Self-Development: Regulating Motor Behavior

Regulating motor behavior is one type of behavioral control that children demonstrate in math instruction. During this week's hands-on activities, children will count out a designated number by jumping safely in place and by moving game pieces precisely on a gameboard. As children regulate their motor behavior, they will be better able to focus on numbers and quantities. However, their ability to jump or move only in a controlled way may require practice. Help children manage impulses to jump or move haphazardly to boost concentration for counting.

Listen and Look for Evidence of Math Mindset

Watch as children jump in place or move game pieces to connect number with quantity. Do they slow down or speed up their jumping/movement to regulate their own motor behavior? Do they jump/move with intention to act out the numbers? Help children monitor their pace to regulate motor behavior.

Throughout the week, ask children: ***How did you remember to wait to jump until after seeing the number? What can you do so that you only move the number of spaces shown on the cube? How did you know how many times to jump/move?***

Building Math Mindset. Encourage children to control their motor behavior during the Number Jump game by changing ways to jump. For example, say, “*You were like a bunny, jumping three times fast! Now, jump four times slow like a turtle!*” Practice having children start and stop movement directions in games, such as Simon Says, to improve competence in regulation of motor behavior.



Learning Trajectories

Objectives

- To produce a group of one to five objects
- To make a group equal in number to another group using one-to-one correspondence
- To count objects (or “steps” in a path) organized in a line up to 5
- To compare two groups to determine whether or not they have the same small number of objects
- To quickly recognize the number of objects in a small group when shown only briefly

	Development Path	Instructional Activities
Object Counting	<i>Corresponder</i>	
	Counter (Small Numbers)	<ul style="list-style-type: none"> • Listen and Count • Garden Pizzazz 2 • Number Race • Garden Pizzazz Free Explore • Listen and Copy • Pizza Game 1
	Producer (Small Numbers)	<ul style="list-style-type: none"> • Number Race • Garden Pizzazz 2 • Pizza Game 1 • Number Jump • Places Scenes
	Counter (10)	<ul style="list-style-type: none"> • Number Jump • Pizza Game 1
	<i>Counter and Producer (10+)</i>	
Comparing and Ordering	<i>Matching Comparer</i>	
	Counting Comparer (Same Size)	<ul style="list-style-type: none"> • Compare Game
	Counting Comparer (5)	<ul style="list-style-type: none"> • Compare Game • Get Just Enough • Find the Number
	<i>Counting Comparer (10)</i>	
Subitizing	<i>Perceptual Subitizer to 4</i>	
	Perceptual Subitizer to 5	<ul style="list-style-type: none"> • Listen and Copy
	Conceptual Subitizer to 5	<ul style="list-style-type: none"> • Where's My Number?
	<i>Conceptual Subitizer to 7</i>	

Use this chart to plan for your specific class schedule. If you have your prekindergarteners for only three days, complete ★ Monday, ★ Tuesday, and ★ Thursday of the week.

Pacing

★ Monday 40



★ Tuesday 40



Wednesday 40



★ Thursday 40



Friday 40



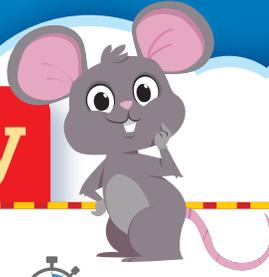


Work Time

	Whole Group	Small Group	Centers	Program Resources
	Numeral 6 Listen and Count <i>Materials:</i> <ul style="list-style-type: none"> counting book coffee can marbles 		Software Activities <ul style="list-style-type: none"> Garden Pizzazz 2 Garden Pizzazz Free Explore Compare Game <i>Materials:</i> Counting Cards*	Big Book Where's One? Assessment Weekly Record Sheet
	Listen and Copy Where's My Number? <i>Materials:</i> <ul style="list-style-type: none"> Numeral Cards* various counters* 	Number Jump <i>Materials:</i> Numeral Cards*	Get Just Enough <i>Materials:</i> <ul style="list-style-type: none"> paintbrushes and cups plastic bottles and tops small boxes and toy cars toy cups and saucers 	Assessment Small Group Record Sheet
	Number Jump Listen and Count <i>Materials:</i> <ul style="list-style-type: none"> counting book coffee can marbles 		Find the Number <i>Materials:</i> <ul style="list-style-type: none"> dark containers various counters* paper plates Numeral Cards* 	Teacher's Resource Guide <ul style="list-style-type: none"> Places Scenes Pizza Game 1
	Listen and Copy Where's My Number? <i>Materials:</i> <ul style="list-style-type: none"> Numeral Cards* various counters* 	Number Race <i>Materials:</i> <ul style="list-style-type: none"> game board* game pieces* Number Cube* 	Compare Game Get Just Enough Places Scenes <i>Materials:</i> <ul style="list-style-type: none"> various counters* Numeral Cards* 	Assessment Weekly Record Sheet
	Number Jump Listen and Count <i>Materials:</i> <ul style="list-style-type: none"> counting book coffee can marbles 	Number Jump <i>Materials:</i> Numeral Cards*	Pizza Game 1 <i>Materials:</i> <ul style="list-style-type: none"> round counters* Number Cube* paper plates 	Teacher's Resource Guide <ul style="list-style-type: none"> Places Scenes Pizza Game 1 Family Letter Week 8
				Assessment Weekly Record Sheet

*provided in Manipulative Kit

Monday



Objectives

- To produce a group of one to five objects
- To make a group equal in number to another group using one-to-one correspondence
- To count objects (or “steps” in a path) organized in a line up to 5
- To compare two groups to determine whether or not they have the same small number of objects
- To quickly recognize the number of objects in a small group when shown only briefly

Materials

- counting book
- coffee can
- marbles
- Counting Cards*
- items for Get Just Enough

*provided in Manipulative Kit

Looking Ahead

For today, provide *Big Book Where’s One?* for Warm-Up and a counting book for Listen and Count, and make sure items for Get Just Enough (continuing from last week) are at the Hands On Math Center. For tomorrow, gather materials for Small Group’s Number Race.

1 Whole Group

Warm-Up: Numeral 6

- Read *Big Book Where’s One?*. Return to the page with the numeral 6; show and point to the 6, and have children say 6.
- Count together how many things there are six of on the page. Explain that the number of things matches the numeral.
- Model and explain how the numeral 6 is formed; it slants down to the left and then continues up into a loop. You may wish to use this rhyme: “Curve down and then around ‘til it sticks. That’s how you write the numeral 6.”
- Children should practice forming the numeral 6 in the air with their fingers.

Listen and Count

- Read a book, such as *Blueberries for Sal* by Robert McCloskey, in which something specific is being counted. And, for example, tell children you are going to drop items into a “bucket” like Sal did. Ask them to listen quietly as you slowly drop marbles (or counters) into a clean, empty coffee can.
- When you finish, have children hold up their fingers to show how many marbles they think are in the can. After you have observed their responses, ask children to say the number.
- Spill the items out of the can, and count them as a whole group to check.
- Repeat twice more with other small numbers.

2 Work Time

Technology Center

Introduce Garden Pizzazz 2 from the *Building Blocks* software. In this activity, children identify numerals 1 to 5 and count the corresponding numbers of objects. Each child should have an opportunity to complete Garden Pizzazz 2 this week.

Hands On Math Center

Today's activities, which continue from Week 7, occur at the center all week.

Compare Game

- For each pair of children playing the game, two or more sets of Counting Cards are needed. Children mix the cards and then deal them evenly facedown.
- Players simultaneously flip their top cards and compare them to find out which is greater. The player with the greater amount says "I have more!" and takes the opponent's card. If card amounts are equal, however, players each flip another card to determine a result.
- The game is over when all cards have been played, and the "winner" is the player with more cards.

Monitoring Student Progress

If... children need help during Compare Game,

Then... use cards with fewer dots.

If... children need a challenge during Compare Game,

Then... use cards with more dots; use Numeral Cards; or have players count dot pairs instead of cards.

Get Just Enough

- Children "get just enough" of one group of items to match another group. Start with obvious pairings, such as nontoxic markers and their caps or toy dogs and plastic bowls (other suggestions are in the Weekly Planner). Whenever children compare items, encourage them to count.
- If children struggle, use fewer items to match. If children excel, use less obvious pairings, such as red and blue blocks, or use more items to match.

3 Reflect 5

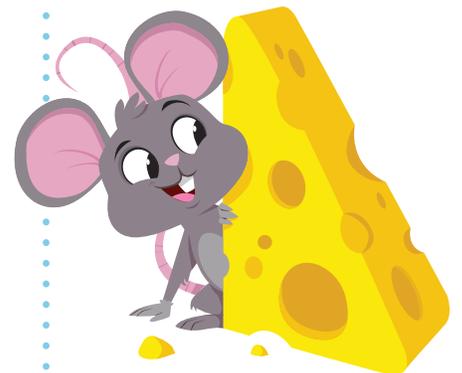
Ask children:

When you played Compare Game, how did you figure out who had more?

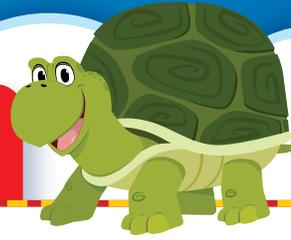
Children might say: *When one is big and one is little, I can just see; or she had 8 and I had 7 so I had to count.*

4 Assess

Use the Weekly Record Sheet from **Assessment** to record children's progress. Use their time at the centers as an opportunity to complete your observations.



Tuesday



Objectives

- To produce a group of one to five objects
- To make a group equal in number to another group using one-to-one correspondence
- To count objects (or “steps” in a path) organized in a line up to 5
- To compare two groups to determine whether or not they have the same small number of objects
- To quickly recognize the number of objects in a small group when shown only briefly

Materials

- Numeral Cards*
- various counters*
- game board*
- game pieces*
- Number Cube*
- dark containers
- paper plates

*provided in Manipulative Kit

1 Whole Group 5

Warm-Up: Listen and Copy

Clap 1 to 5 times, and tell children to clap the same number of times in the same way. For example, clap quickly, slowly, or with pauses to create patterns, such as clap, clap, pause, clap. Repeat with different small numbers.

Where’s My Number?

- Show a Numeral Card to children. Secretly put that many counters in one of your hands; put a different amount in your other hand. Hold out your closed hands, open them for two seconds, and then close them.
- Have children point to the hand with the number of counters that matches the Numeral Card. Repeat with other small numerals.

2 Work Time 30

Small Group

Number Jump

- Show a number of fingers, and write that numeral for children to see. Tell children to jump safely that many times. Count the jumps in unison. Repeat with another appropriate number.
- As a variation, here is the subitizing version: hide your hands behind your back, tell children to jump only if you show three fingers, and show your fingers for only two seconds.
- To simplify, use smaller numbers, and say each number as you show your fingers. For a challenge, show finger combinations on both hands.

Number Race

- Demonstrate the game by playing it with a child. The game has two players or two teams with two players. Each game is played with one game board, one Number Cube, and a game piece for each player.
- Player One rolls the Number Cube and announces the number that was rolled. Player Two checks whether Player One said the correct number. Player One moves that many spaces.
- Player Two takes his or her turn, following the same steps. The game continues until all players reach the end.
- Review directions as needed. When applicable, help players on each team take turns by guiding Player One on Team One, then Player One on Team Two, and so on until the teams can proceed without you.



Monitoring Student Progress

If... children struggle during Number Race,

Then... provide a Number Cube up to 3 only.

If... children excel during Number Race,

Then... provide a Number Cube 3 to 8, or ask players to tell you how many it would take to land on a particular space or to finish the game.

Technology Center

Introduce Garden Pizzazz Free Explore from the *Building Blocks* software. This activity provides additional practice recognizing numerals and counting. Each child should complete the activity this week.

Hands On Math Center

Children may continue Monday's activities and/or complete this one.

Find the Number

- Before children get to the center, conceal several pizzas (paper plates), each with a different number of toppings (round counters) under its own dark container.
- Place a Numeral Card in plain view. Children lift each container to count toppings until they find the pizza that matches the card's numeral. They can show their answer to a classmate or an adult.
- To simplify the activity, reduce the number of containers, or display the pizzas uncovered. For a challenge, have children work in pairs, making their own groups, and have one another, for example, "Find the 10."

3 Reflect

Show a familiar numeral, and ask children:

What numeral is this? How do you know?

Children might say: I know that is a (insert numeral) because of how it looks.

4 Assess

During Small Group activities, use the Small Group Record Sheet from *Assessment* to observe and record children's progress.



Research in Action

The trajectory levels *Counter (10)* and *Producer (Small Numbers)* are close and children may develop *Producer (Small Numbers)* at the same time or even after *Counter (10)*.

Looking Ahead

For tomorrow's Hands On Math Center, provide copies of the Places Scenes and Pizza Game 1 activity sheet from the *Teacher's Resource Guide*.



Wednesday



Objectives

- To produce a group of one to five objects
- To make a group equal in number to another group using one-to-one correspondence
- To count objects (or “steps” in a path) organized in a line up to 5
- To compare two groups to determine whether or not they have the same small number of objects
- To quickly recognize the number of objects in a small group when shown only briefly

Materials

- counting book
- coffee can
- marbles
- various counters*
- Numeral Cards*
- Number Cube*
- paper plates

*provided in Manipulative Kit

1 Whole Group 15

Warm-Up: Number Jump

- Show a number of fingers, and write that numeral for children to see.
- Tell children to jump safely that many times, and count the jumps in unison. Repeat the activity with another appropriate numeral.

Listen and Count

- Read a book, such as *Blueberries for Sal* by Robert McCloskey, in which something specific is being counted. Remind children you are going to drop items into a can for them to count. Ask children to listen quietly as you slowly drop marbles (or counters) into a clean, empty coffee can.
- When you finish, have children hold up their fingers to show how many marbles they think are in the can. After you have observed their responses, ask children to say the number.
- Spill the items out of the can, and count them as a whole group to check.

2 Work Time 20

Technology Center

Continue to provide each child with a chance to complete Garden Pizzazz 2 and Garden Pizzazz Free Explore.

Hands On Math Center

Based on what children learn and benefit from most, allow them to continue this week’s previous activities, adding these recurring ones.

Places Scenes

Put a Numeral Card on the table, and have children choose several Places Scenes to place counters on each to match the card’s amount. Children should tell a story about one scene.

Monitoring Student Progress

If... children struggle during Places Scenes,

Then... have them specifically use the space or beach scene where items up to 5 can be counted out on special spaces.

If... children excel during Places Scenes,

Then... use a greater Numeral Card.

Pizza Game 1

- Each player has a Pizza Game 1 activity sheet from the *Teacher's Resource Guide*.
- Player One rolls a Number Cube and puts that many counters on his or her plate. Player One asks Player Two, "Am I correct?" Player Two must agree that Player One is correct. Once correct, Player One moves the counters to the topping spaces on his or her pizza activity sheet. Players take turns until all the spaces on their pizzas have toppings.
- If needed, use a blank wooden cube to make a Number Cube that is easier for children, such as one to three dots on each side, or, for a challenge, draw up to ten dots on each side.

3 Reflect

Show children a list such as 4, 3, 5, 2, 1, and ask:

Which is the numeral 2?

Children either respond correctly or point to the 5. Respond with praise, or explain with encouragement that 5 looks almost like an upside-down 2.

4 Assess

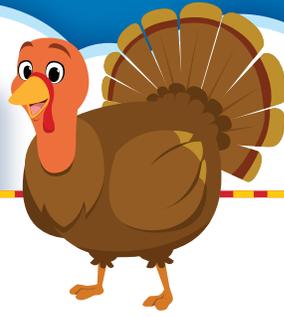
Use the Weekly Record Sheet from *Assessment* to record children's progress. Use their time at the centers as an opportunity to complete your observations.

Research in Action

The computer can help children connect representations of ideas, such as the written numeral 4, the spoken number word *four*, and a collection of 4.



Thursday



Objectives

- To produce a group of one to five objects
- To make a group equal in number to another group using one-to-one correspondence
- To count objects (or “steps” in a path) organized in a line up to 5
- To compare two groups to determine whether or not they have the same small number of objects
- To quickly recognize the number of objects in a small group when shown only briefly

Materials

- Numeral Cards*
- various counters*
- game board*
- game pieces*
- Number Cube*

**provided in Manipulative Kit*

Looking Ahead

For tomorrow, make copies of Family Letter Week 8 from the *Teacher’s Resource Guide*.

1 Whole Group

Warm-Up: Listen and Copy

Clap one to five times, and tell children to clap the same number of times in the same way. Clap quickly, slowly, or with pauses to create patterns, such as clap, clap, pause, clap.

Where’s My Number?

- Show a Numeral Card to children. Secretly put that many counters in one of your hands; put a different amount in your other hand.
- Hold out your closed hands, open them for two seconds, and then close them.
- Have children point to the hand with the number of counters that matches the Numeral Card.
- Repeat with new numerals.

2 Work Time

Small Group

Number Jump

- Show a number of fingers, and write that numeral for children to see. Tell children to jump safely that many times. Count the jumps in unison. Repeat with another appropriate number.
- As a variation, here is the subitizing version: hide your hands behind your back, tell children to jump only if you show three fingers, and show your fingers for only two seconds.

Monitoring Student Progress

If... children struggle during Number Jump,

Then... use smaller numbers, and say each number as you show your fingers.

If... children excel during Number Jump,

Then... use larger numbers, and show finger combinations using both hands.

Number Race

- Demonstrate the game again if needed before children begin. Remember the game has two players or two teams with two players, and is played with one game board, one Number Cube, and a game piece per player.
- Player One rolls the Number Cube and announces the number that was rolled. Player Two checks whether Player One said the correct number. Player One moves that many spaces.
- Player Two takes his or her turn, following the same steps. The game continues until all players reach the end. Review the directions with pairs or teams until they can proceed without guidance.
- To simplify the game, provide Number Cubes up to 3 only. For a challenge, provide a Number or Dot Cube with 3 to 8 (dots or numerals), or ask players to tell you how many it would take to land on a particular space or to finish the game.

Technology Center

Continue to provide each child with a chance to complete Garden Pizzazz 2 and Garden Pizzazz Free Explore.

Hands On Math Center

Based on what children continue to learn and benefit from most, choose from this week's Hands On Math Center activities: Compare Game, Get Just Enough, Find the Number, Places Scenes, and Pizza Game 1. Consult the Weekly Planner for corresponding materials and, if needed, previous days for activity directions.

3 Reflect

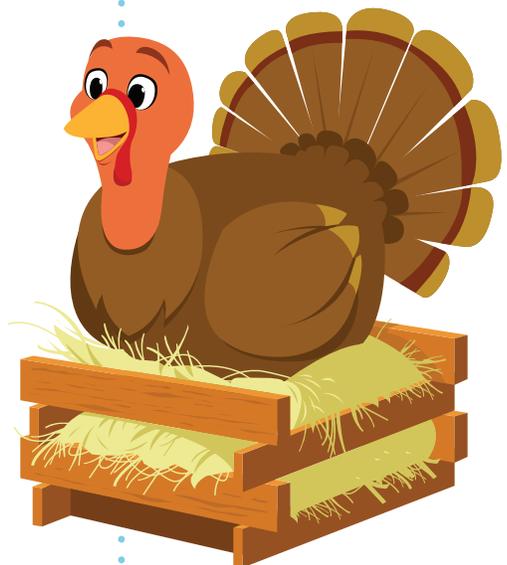
Ask children:

What do you count when you play Number Race?

Children might say: You count how many you rolled; or you count how many jumps to take, spaces to move, or the like.

4 Assess

During Small Group activities, use the Small Group Record Sheet from **Assessment** to observe and record children's progress.



Friday



Objectives

- To produce a group of one to five objects
- To make a group equal in number to another group using one-to-one correspondence
- To count objects (or “steps” in a path) organized in a line up to 5
- To compare two groups to determine whether or not they have the same small number of objects
- To quickly recognize the number of objects in a small group when shown only briefly

Materials

- counting book
- coffee can
- marbles

Looking Ahead



For next week, familiarize yourself with Shape Match and Number Snapshots 2 from the *Building Blocks* software, and assemble the Shape Flip Book if you have not already.

1 Whole Group

Warm-Up: Number Jump

- Show a number of fingers, and write that numeral for children to see.
- Tell children to jump safely that many times, and count the jumps in unison.
- Repeat the activity with another appropriate numeral.

Listen and Count

- Read a book, such as *Blueberries for Sal* by Robert McCloskey, in which something specific is being counted. Remind children you are going to drop items into a can for them to count. Ask children to listen quietly as you slowly drop marbles (or counters) into a clean, empty coffee can.
- When you finish, have children hold up their fingers to show how many marbles they think are in the can. After you have observed their responses, ask children to say the number.
- Spill the items out of the can, and count them as a whole group to check.

Monitoring Student Progress

If... children struggle during Listen and Count,

Then... drop the items slower, encouraging children to count slowly as they hear an item make a single, distinct sound.

If... children excel during Listen and Count,

Then... increase the number of items you drop.

2 Work Time 20

Technology Center

Continue to provide each child with a chance to complete Garden Pizzazz 2 and Garden Pizzazz Free Explore.

Hands On Math Center

Based on what children continue to learn and benefit from most, choose from this week's Hands On Math Center activities: Compare Game, Get Just Enough, Find the Number, Places Scenes, and Pizza Game 1. Consult the Weekly Planner for corresponding materials and, if needed, previous days for activity directions.

3 Reflect 5

Briefly discuss with children what you have done in class this week, such as matching numerals to corresponding amounts, and quickly review numerals 1 through 6.

Ask children:

What do numerals mean?

Children might say: They are numbers; they are like letters, but they tell how many; or I use them to count.

4 Assess

Use the Weekly Record Sheet from **Assessment** to record children's progress. Use their time at the centers as an opportunity to complete your observations.



Wrap-Up

Assess and Differentiate

A Gather Evidence

Review children’s progress in mathematics by looking at the Weekly Record Sheets (Monday, Wednesday, Friday) and the Small Group Record Sheets (Tuesday, Thursday) from this past week.

B Summarize Findings

Using **Assessment** record sheets, summarize and analyze assessment data for each child based on your weekly observations and Record Sheets. Such information helps determine where each child is on the math trajectory for counting, comparing, and subitizing.

C Differentiate Instruction

Once you have seen a child exhibit specific levels of the trajectory, begin to encourage and work with that child toward the next level. Refer to Appendix A for individualized instruction opportunities.

Object Counting

If... the child can count five items and tell how many with the last number counted,

Then... Counter (Small Numbers)

Accurately counts objects in a line to 5, and answers “how many?” with the last number counted. When objects are visible, especially with small numbers, begins to understand cardinality.

If... the child can produce up to five items,

Then... Producer (Small Numbers)

Counts out objects to 5. Recognizes that counting is relevant to situations in which a certain number must be placed. Produces a group of 4 objects.

If... the child can count groups up to 10 in a line,

Then... Counter (10)

Counts structured arrangements of objects to 10. May be able to read and write numerals to represent 1–10, and tell the number just before or after another number. Verbal counting to 20 is developing.

Comparing and Ordering

If... the child can compare only similarly-sized items in small groups,

Then... Counting Comparer (Same Size)

Accurate comparison via counting but only when objects are similar in size and in groups up to 5.

If... the child can compare various small groups, sometimes labeling one as having more or less,

Then... Counting Comparer (5)

Compares with counting even when larger group’s objects are smaller; figures out how many more or less.

Subitizing

If... the child can instantly identify groups up to 5,

Then... Perceptual Subitizer to 5

Instantly recognizes collections of up to five when shown briefly and verbally names the number of items.

If... the child can label some arrangements up to 10,

Then... Conceptual Subitizer to 5

Verbally labels all arrangements to about 5, shown only briefly, by seeing the parts and quickly knowing the whole.



4 Weekly Record Sheet

Directions:

- Under the week number, write the date you started that week’s activities.
- In the ✓ columns, put a ✓ when an activity is completed.
- For Whole Group and Math Throughout the Year, put a ✓ for each time the class does the activity.
- For the other columns, put a ✓ when you start each activity.

Week	✓	Whole Group		Hands On Math Center	✓	Technology Center		Small Group	✓	Home Connection	Math Throughout the Year
7		Numeral 1 <i>Goldilocks and the Three Bears</i> Numeral 2 Compare Snapshots Numerals 3 Number Jump Numerals 4 Numerals 5		<i>Goldilocks and the Three Bears</i> Pizza Game 1 Places Scenes		Decorating Fun 1 Decorating Fun Free Explore		Get Just Enough Compare Game		Family Letter	Numerals Every Day Setting the Table
Date											
8		Numerals 6 Listen and Count Listen and Copy Where’s My Number? Number Jump		Compare Game Get Just Enough Find the Number Places Scenes Pizza Game 1		Garden Pizzazz 2 Garden Pizzazz Free Explore		Number Jump Number Race		Family Letter	Counting Jar Numerals Every Day
Date											

Building Blocks • Assessment

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Child's Name _____

Trajectory Progress Chart: Numbers

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Age Range	Counting	Comparing and Ordering Numbers	Subitizing	Composing Numbers	Adding and Subtracting	Multiplying and Dividing (sharing)
1 year	Number Word Sayer (Foundations) Chanter	Comparison Senser (Foundations) Early Comparison Corresponder	Number Senser (Foundations) Very Small Number Recognizer	Actor on Parts (Foundations)	Arithmetic Senser (Foundations)	Nonquantitative Sharer
2	Reciter	Perceptual Comparer First-Second Ordinal Counter	Small Collection Namer	Parts Combiner	Preverbal +/-	
3	Reciter (10) Corresponder	Early Comparer of Similar Items Early Comparer of Dissimilar Items	Maker of Small Collections	Inexact Part-Whole Recognizer	Small Number +/-	Beginning Grouper and Distributive Sharer
4	Counter (Small Numbers) Producer (Small Numbers) Counter (10)	Matching Comparer Counting Comparer (Same Size)	Perceptual Subitizer to 4	Composer to 4, then 5	Find Result +/- Find Change +/- Make It N +/-	Grouper and Distributive Sharer
5	Counter and Producer (10+) Counter Backward from 10	Spatial Extent Estimator (Big/Small) Counting Comparer (5) Serial Order to 5 Ordinal Counter	Perceptual Subitizer to 5 Conceptual Subitizer to 5 Conceptual Subitizer to 7 Conceptual Subitizer to 10		Counting Strategies +/-	Concrete Modeler x/÷

Child's Name _____

Trajectory Progress Chart: Number

Age Range	Counting	Comparing and Ordering Number	Recognizing Number and Subitizing (instantly recognizing)	Composing Number (knowing combinations of numbers)	Adding and Subtracting	Multiplying and Dividing (sharing)
6	Counter from N (N+1, N-1) Skip Counter by 10s to 100 Counter to 100 Counter On Using Patterns Skip Counter Counter of Imagined Items Counter On Keeping Track Counter of Quantitative Units Counter to 200	Counting Comparer (10) Mental Number Line to 10 Serial Orderer to 6+	Conceptual Subitizer to 20	Composer to 7 Composer to 10	Counting Strategies +/- Part-Whole +/- Numbers-in-Numbers +/-	Parts and Wholes \times/\div
7	Number Conserver Counter Forward and Back	Place Value Comparer Mental Number Line to 100	Conceptual Subitizer with Place Value and Skip Counting	Composer with Tens and Ones +/- Fact Fluency to 20	Deriver +/-	Skip Counter \times/\div
8+		Mental Number Line to 1000s	Conceptual Subitizer with Place Value and Multiplication		Problem Solver +/- Multidigit +-	Deriver \times/\div Array Quantifier Partitive Divisor Multidigit \times/\div

Name _____ Date _____



Math News

Dear Family,

This week your child was introduced to ***Building Blocks***, which is designed to help young children build solid mathematics knowledge and develop thinking and reasoning skills. The main focuses of the program are number and geometry (shapes). Children will participate in activities to help them learn to see the mathematical ideas in puzzles, building with blocks, dramatic play, songs, stories, and the like.

As we progress through the school year, you will receive weekly letters such as this to inform you of our goals and achievements. In addition, the letters will include tips for math activities to do at home with your child. Some letters may even become keepsakes because each includes a space for your child to demonstrate something math-related he or she has learned in class. Please take time to review and discuss this work with your child.

Week 1 focused on introductory counting and recognizing and making groups with a small number of objects. The activities are designed to help children see that counting is more than simply saying numbers; counting relates to real objects and quantities. Understanding this concept helps children link math to their lives.

Help-at-Home Math Tips

- Look around for things that can come in pairs, such as shoes and matching chairs.
- Look for items with numerals, or written numbers, on them, such as clocks, telephones, radios, clothing labels, page numbers, and bathroom scales. Discuss the purpose of numerals with your child.
- Ask your child to count your daily pieces of mail, and then sort them into small groups. For example, have him or her sort catalogs from envelopes or plain envelopes from colored envelopes.

What's Ahead?

In Week 2, children will continue to build their basic counting skills, emphasizing that counting tells how many. They will recognize and make small groups, verify group amounts, compare small groups, and count in patterns.

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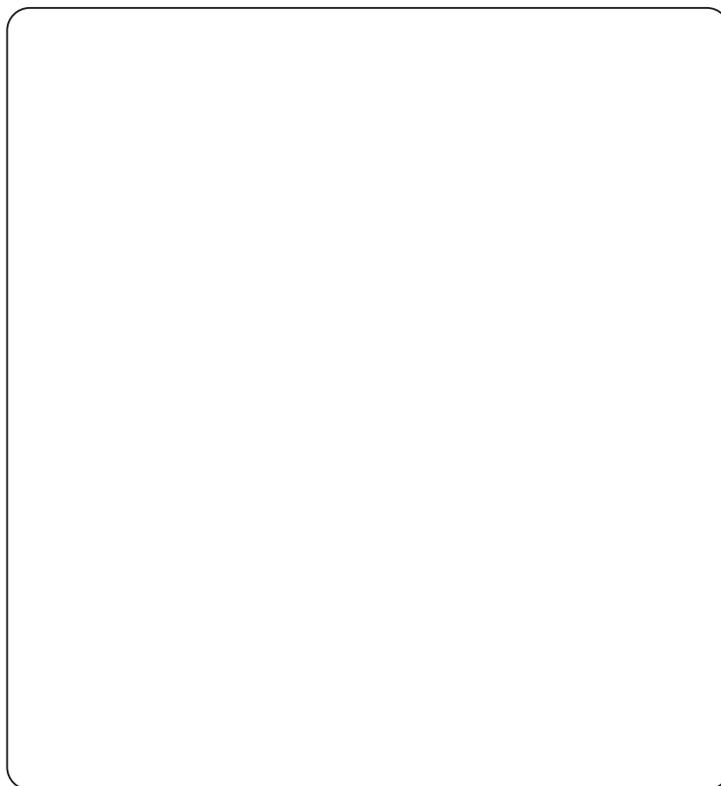


Math News



Here's What I Know

Ask your child to draw two of something. Then ask about his or her drawing.



What to Look For

- Are there two items? If not, how many items are there?
- Can your child accurately count aloud the items?

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