Math Matters!
Building a Math-Rich Home Environment

WORKSHOP OVERVIEW
Experience the joy of discovering math everywhere. Families will discover the importance of early math development in children and how to create a numeracy-rich home environment by exploring math games and real-world math experiences.
Family Workshop:
Math Matters! Building a Math-Rich Home Environment

INTENDED TIMEFRAME:
This is a 1 hour workshop. This facilitator’s guide includes an optional 20 minute extension.

LEARNING OUTCOMES:
Participants will:
» Create positive math experiences with their children by seeing and sharing everyday math.
» Talk about math in ways that explore and build math skills and confidence.
» Practice developmentally appropriate math games and activities.
» Use ReadyRosie to extend math learning at home as part of daily life.
» Extension: Math Stories, Books and Math Writing

WORKSHOP FORMAT
Note: Each activity has a recommended video but other video options are provided so facilitator’s can customize the workshop to meet the age/skill needs of participating families.
1. Welcome and Warm-up
2. A math-rich home exploration
3. Creating positive everyday math experiences practice
4. Math games practice
5. Math routines and ReadyRosie practice
6. Closure

MATERIALS
1. PowerPoint Presentation
2. Computer with internet access
3. Materials
   » Sign-in sheet
   » Name tags for participants
   » Flipchart paper
   » Paper and pencils for participants to take notes
   » Decks of playing cards (Minimum – one deck per two participants)
   » High quality math related children’s picture books. If you are doing the math book extension (Minimum – one per table)
   » Community resource handouts (Local Head Start to provide local community resource handouts you want families to know about.)
   » Evaluation
   » If doing the extension you will need to provide construction paper and extra white paper for making math books.

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Welcome and Warm-Up
15 minutes

Slide 1  Math Matters! Building a Math-Rich Home Environment

**ACTIVITY**
Welcome families and introduce yourself

1. Introduce yourself and share why you are excited about facilitating the workshop.
2. Take care of any housekeeping items, such as location of restrooms and announcements.
3. Discuss the following:
   - This is a safe place; we are all learning together. All discussions and things we share are confidential.
   - This is a chance to build community, to connect and learn from each other.
   - Please put your cell phones on vibrate.
   - We are on workshop _________ of the series. In our last workshop we discussed ____________.
   - Ask: What was the best outcome of your home practice? What surprised you about your home practice? (Base your question and discussion on where you are in the workshop series? Be prepared to discuss and debrief the assigned home practice from the last workshop?)

**KEY POINTS**

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Slide 2  Warm-up Math Childhood Reflection Activity  (5 Minutes)

**ACTIVITY**
Take a moment to think of your childhood and how you felt about math Allow 30 seconds for participants to access their memory.

**PRACTICE**
1. I'm going to give you 3 descriptions of how people sometimes feel about math.
2. When I say go, you are going to go to the corner of the room that best describes how you felt about math when you were a child.
3. Once you get to your corner, introduce yourself to someone in your corner and share your math memory.
4. Read math descriptions and point to the corners that fit the description. (Prior to the start of the workshop you can also post a number in each corner to help direct participants.)

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Slide 3  Warm-up Corner Descriptions

**ACTIVITY**

- Corner 1: “I loved math! It was one of my favorite subjects in school.”
- Corner 2: “I hated math!” It was one of my least favorite subject in school.”
- Corner 3: “It was okay. I didn’t hate it and didn’t love it.”

**DEBRIEF/REFLECT**
1. Ask: Which corner has more people? Do you think this is typical? Why?
2. Ask: Why do you think most people have such strong feelings about math?
3. Ask: How many of you feel math is really important for your children? Ask for a show of hands.

(Continue slide on next page)
Have participants go back to their seats. Recap discussion by summarizing key points participants shared and then stating:

» Math is all around us. It is important for our children’s school and life success. Many of today’s jobs require strong mathematical thinking skills.

» Our feelings about math can often be colored by how our parents feel about math. So give your child a positive math framework by sharing daily math experiences and the age-appropriate tools you use to figure things out.

» Finding math learning opportunities in everyday life activities, having math conversations, and playing math games with our children are all natural ways to build strong math foundations in our children.

In today’s session we’ll be exploring these concepts in-depth.

Share workshop objectives by stating that today we will:

» Practice creating positive math experiences by seeing and sharing everyday math.

» Practice “math talk” that builds math skills and confidence.

» Practice developmentally appropriate math games and activities.

» Integrate math learning into routines.

» Use ReadyRosie to extend math learning at home as part of daily life.

1. Ask: What would you like to learn about math and your child?

Recap discussion by summarizing key points shared and then stating:

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Let’s get started

What is a Math-Rich Home?

We are going to take a few minutes to explore what we mean by a “math-rich home.”

Partner Pair and Share Activity: How do we use math daily?

1. You are going to work with a partner to think of the different ways you use math every day in your home. You can write a list or just have a conversation. Keep track of the number of items you think of.

2. You have two minutes to discuss. Have fun. Go.

3. Walk around the room to see what participants are talking about. Call time after two minutes.
1. **Ask**: Can anyone share a couple of things they talked about? Anyone want to share the number of things they thought of.

2. **Ask**: Are you surprised by the number of things you do every day that uses math?

3. Acknowledge what participants mentioned and wrap-up by showing Slide 7 and reviewing any key elements that were missed. Reinforce that our homes provide daily opportunities to talk about and share math with our children.

**A math-rich home is filled with:**

- Math Talk
- Sorting things together
- Counting things together
- Playing with numbers
- Playing card and dice games
- Telling and reading math stories
- Talking about math when we are using it at the grocery store, while paying bills, while comparing the cost of things, while reasoning
- Asking process questions: “that’s interesting how did you figure that out?”
- Sharing your process thinking: “hmmmm, that doesn’t make sense. I think I’m going to try...”
- Wondering out loud and using open-ended questions
- Playing and building together
- Pointing out and making patterns together
- Looking for opportunities to count, add, subtract, multiply and divide based on your child’s age and skill level
- Measuring things
- Cooking together
- Doing puzzles
- Noticing, drawing and talking about shapes
- Creating math problems and stories in everyday activities.
- Talking about and estimating time.
- Enjoying music together via counting songs and paying attention to rhythm and patterns

We are now going to explore “math talk” and practice building it into your daily routine.

**Math Talk 15 minutes**

**Everyday Math**

**Activity**

We are going to watch a ReadyRosie video. Watch closely and see what you think is being learned in this everyday activity.

**Watch**

**Putting Away Dishes / Guardar los Platos** (or select a video from the list) Slide 9-10

**Practice**

**Pair and Share**: Find a partner at your table and discuss what was being learned.

**Debrief/Reflect**

**Ask**: Does anyone want to share their discussion?

**Ask**: How does something so simple help our children become comfortable mathematical thinkers?

**Summary**

Recap discussion by summarizing key points participants shared and then stating: Slide 11

- This type of activity helps build an understanding of addition and subtraction.
- Doing chores together builds responsibility and allows families to have lots of opportunities for “math talk.”

(Continue slide on next page)
Math talk is something every family does. It just means that you are talking to your child about the math that they experience every day.

This is just one example of how parents can “mathematize” everyday experiences. Let’s look at some additional ideas to “talk mathematically” with our children.

We are going to explore and practice using “mathematically descriptive words” with our children.

**Table Discussion**: As a table discuss what “math words” were used in the video and what was being learned.

**Ask**: What are some other math descriptive words we use daily with our children? (Some ideas include: measuring, weight, big, small, greater than/less than, how many, equals, plus, minus, total, numbers, inches, time, your first, second, third...)

**Ask**: Why is it important to use these words with our children?

Recap discussion by summarizing key points participants shared and then stating: Using math language with our children helps them describe and understand the world around them.

They want to know:

- How to count and compare: Do you have more than me? (How many do I have? Equal to, less than, more than? What is bigger, smaller?) (Numbers)
- How to measure and describe things: How tall am I? How much do I weight? How much do you weight? How many inches is my hand? (Measurement)
- What time is it? How long will that take? (Time)
- The order of things: First place, second place, third place, near, far...? (Position of objects)
- How much they have or want: Can I have half? (Fractions)

Opportunities for math talk are all around you. Have fun recognizing and taking advantage of the math talk opportunities that are everywhere in your daily life and routines (home, car, shopping, errands, while waiting). Let’s now look at some family games that build math skills and confidence.

**Math Skill Building Family Games**
15 minutes

**While You Wait Math Game**

Let’s practice some math games that are great opportunities to make “waiting” fun and a learning opportunity.

(Continued on next page)
I'm Thinking of Math Game: We are going to play a game called, “I'm thinking of...” This game can be played with a lot of topics but we are going to play it as a class using math concepts. Here's an example, “I'm thinking of a number that is bigger than 1 but smaller than 3. What number am I thinking of? (2) Here's another one, “I'm thinking of a shape that has three sides? What am I thinking of? (Triangle)

Table I Spy Math Game: We are going to watch a video of another great family game that can be played with a lot of topics.

Grocery Store I Spy

Find a partner and take turns playing I Spy. Try to spy things that are mathematical like shapes and numbers, or use mathematical words like equals, greater than/less than, it weights, it's as big as....

Would your children enjoy this game? What are other ways you can play this game?

We all spend a lot of time “waiting”. Waiting for the bus, waiting at the Dr.’s office, waiting for an older sibling’s practice to end, waiting in line, waiting for food to cook etc. Waiting time is a great opportunity to connect and learn together.

Let’s now try some family card games to highlight how cards can be a fun way to practice foundational math skills together.

Card Games: Cards are an excellent tool for making learning math together fun.

Watch The Biggest Number and see what you think is being learned.

Ask: Have any of you played this game when you were a child or with your children? Use the deck of cards at your table to play The Biggest Number Together. Any questions? (Game can be played with up to four players). Allow 3 minutes of play. Move among the tables and help with any questions.

Ask: What do you think is being learned?

Ask: Would your children enjoy this game?

Ask: How could you modify this game based on your child’s age and skill? (Only use cards 1-3 or 5 for young children. Use cards 1-10 for preschoolers until comfortable, Use all cards with older children and face cards equal 10, can then use this same game to work on addition, subtraction, multiplication etc.)

Ask: How else can a deck of cards be used for learning?

Recap discussion by summarizing key points participants shared and then stating: Cards are a powerful learning tool because:

- They have numbers and pits for for one-to-one counting.
- They can be used to build sorting skills (by color, by numbers, by shapes).
- They can be used to make interesting patterns.

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They can be used for sequencing.
» There are a variety of family card games that make learning math facts fun.

We are now going to practice using the ReadyRosie tool to highlight how easy it is to make math and games part of your daily routine.

ReadyRosie as A Learning Tool Practice
7 minutes

We are going to spend 5 minutes navigating the ReadyRosie app, so you know how to find content.

1. We are going to start by finding some additional ReadRosie math activity ideas.
2. We can search for content on the ReadRosie App or Website.
   • Open the ReadyRosie App and login. If your families are not using the RR app you will need to allow extra time for them to download the app and login. Or, you can assign this as their home practice to accomplish prior to the next workshop and show them how to do a search using the ReadyRosie website.
   • Search for “math games.”
   • Look for an activity that targets your child’s age.
   • Spend the next 3 minutes looking for a math activity you are excited about trying.
   • Share what you found with someone at your table.

Ask: What other topic(s) are you interested in finding for activities to do together?
Point back to the items the class said they wanted to learn about at the beginning of the literacy workshop. Encourage them to use the app to continue learning outside of the workshop.
You have access to the complete ReadyRosie library; so in addition to the weekly videos you receive, you can also look for specific content anytime.

Closure
10 minutes

1. Thank families for coming and summarize workshop objectives:
2. Objectives:
   • I can create positive math experiences by seeing and sharing everyday math.
   • I can use “math talk” that builds math skills and confidence.
   • I have learned developmentally appropriate math games and activities.
   • I know how to integrate math and literacy learning into routines.
   • I will use ReadyRosie to extend math learning at home as part of daily life.
3. Remind families of the home practice and commitments you want them to focus on this week:
   - Recognize and practice math talk opportunities in daily activities.
   - Play either I’m Thinking of… or I Spy with your children.
   - Play one card game with your child/family.
   - Use the RR app to find additional games and activities you want to try.
4. Remind participants about the next workshop in the series.
5. Share local community resources you want families to know about.
6. Have families complete the workshop survey before leaving class.

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**Extension: Math Stories, Books and Math Writing**

30 minutes

**ACTIVITY**

We are now going to talk about connecting math and literacy and how to easily make them part of your daily routine. We are going to start by exploring how to create and share math stories.

**WATCH**

Watch the Car Time Math Story video.

**PRACTICE**

1. **State:** We are going to work together to make math stories. Teachers often tell students that math stories have:
   - a start
   - a change
   - and a result.

   **For Example:**
   - **Start:** I see 4 birds.
   - **Change:** 3 flew away.
   - **Result:** How many are left? 1 bird is left.

2. **Pair and Share.** Work with a partner at your table to create a math story. What is it about? What math are you weaving in?

**DEBRIEF/REFLECT**

Ask: Does anyone want to share their math story? State that there is only time for one or two to be shared?
Ask: Would your children enjoy hearing math stories?
Ask: Would they enjoy creating them with you?

**SUMMARY**

Telling math stories is a great way to build mathematical thinking and connections to literacy skills.

**TRANSITION**

In addition to telling stories, there are many wonderful math related children's books.

**ACTIVITY**

**Sharing Math Books**

1. Read a few pages of a math picture book aloud to students. Model asking questions before you start reading and model pausing and asking at least one question while you are reading.
2. Discuss the math being learned in the story.
3. Ask what questions they would ask after reading the story.
4. Let each table explore other math related picture books.

**DEBRIEF/REFLECT**

Ask: Why is sharing math related picture books important?
Ask: Where can you get math related picture books?

**SUMMARY**

Sharing math related picture books introduces and reinforces foundational math skills in a fun way. It exposes children to mathematical thinking through print and builds number recognition and awareness.

**TRANSITION**

Let’s briefly talk about helping children learn to draw and write about numbers.
We are going to talk about different strategies to help children learn to write about numbers.

Watch the Salty Numbers video

Group Discussion - Ask: How else can we help our children learn how to represent numbers in writing?

Writing is a complex skill. It’s more important for preschoolers to build their fine motor skills then to worry about the actual mechanics of physical writing.

Encourage children to use manipulatives and objects to represent numbers in a variety of ways. Keep things fun and simple.

Children love to be authors. Consider creating a family “math book” to make talking, drawing and writing about numbers fun.

Create a math book

1. Ask participants to think of ways they might organize their family math book. Share ideas as a group. Some ideas include:
   - Family members, How many family members are in the family? How many girls? How many boys? How many children? How many adults? Pets?
   - Favorite things: What do they like to collect? What do they like to play? What are their favorite toys, foods, etc.
   - Can use drawings, pictures, stickers, photographs, cutout items, or things they collect to fill their pages.
   - Be creative. Have fun.

2. Demonstrate creating a simple blank math book with them.
   - Use a construction piece of paper as the cover. Fold it in half and fold 5 sheets of paper as the middle. Staple the white pages inside the folded construction paper cover.
   - Have them write one number per page. At least up to the number 10. Encourage them to make their numbers legible, large and interesting.
   - Leave room on the front cover for a title
   - Write: Author: ______________ and Illustrator: ______________ on the bottom of their cover page so they can fill that in with their child at home.

3. They will complete the book at home with their child and practice reading it together. Encourage them to have their child:
   - Help create a title for their book.
   - Decorate the pages of the book with drawings, photos, cutout items etc.
   - Practice counting and talking about numbers when making each page.

Ask: Would your child enjoy illustrating and writing a math book with you?
Ask: What other kinds of books can you make with your child?

Creating things together is a wonderful way to connect and reinforce learning.
The power of ReadyRosie is the ongoing follow up and support available digitally for families. Use SHARE to communicate with families and support their ongoing learning by sharing the videos that were covered in the recent workshop and any additional videos in this domain you think they will find inspirational. This message can also be sent to all the families who were unable to attend the workshop.

**Sample message:**
“Our recent family workshop focused on math activities you can do at home with your children. Here are the videos we recommend you enjoy this week as part of your home learning.”

<table>
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<th>VIDEOS highlighted in the ReadyRosie Math Family Workshop:</th>
<th>Additional videos to share in this domain:</th>
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<td>BABY: Blast Off!</td>
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<td>KINDERGARTEN – 1ST: The Final Price Is...</td>
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<td></td>
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<td>2ND – 3RD: Double the Recipe</td>
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<td>Measurement</td>
<td>BABY: Big and Little</td>
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<td>PRE-K: Near and Far</td>
<td>PRE-K: Guess my Shape</td>
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<td>KINDERGARTEN – 1ST: Measurable Me</td>
<td>KINDERGARTEN – 1ST: I Spy a Coin</td>
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<td>2ND – 3RD: Now is the Time</td>
<td>2ND – 3RD: I Spy Sums and Products</td>
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<td>2ND – 3RD: Make One Up!</td>
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