TODDLERS UNDER CONSTRUCTION

STRUCTURE

- Activity Overview & Preparation (5-15 MIN)
- Introduction (2 MIN)
- Activity & Discussion (15-30 MIN)
- Closing (10-15 MIN)

OBJECTIVES

At the end of this activity, participants will be able to:

- Recognize and take advantage of opportunities to promote math development during block play

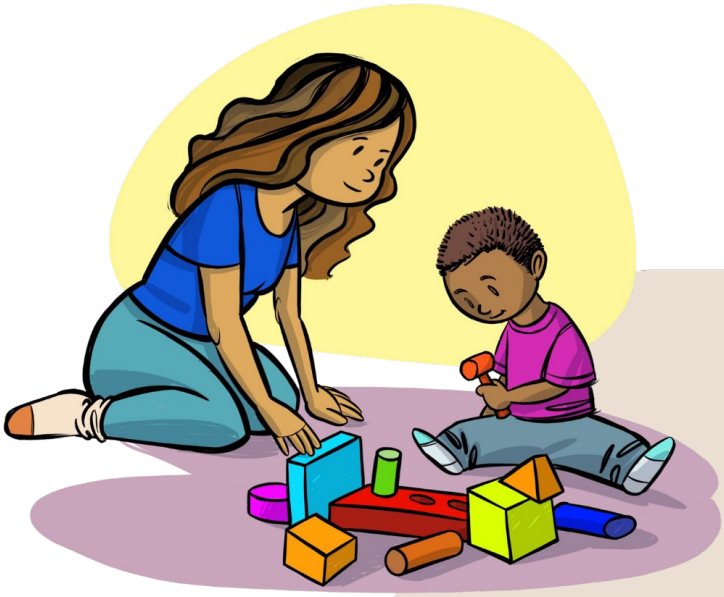
TIME

35-60 MINUTES

In this activity, caregivers think of ideas to promote math development during toddler block construction play.

MATERIALS

Printout (or digital link to) **Toddlers Under construction Caregiver Materials**



ACTIVITY 2.5

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TODDLERS UNDER CONSTRUCTION

GETTING READY

FACILITATOR NOTES

ANSWER GUIDE

For each image in the Caregiver Materials, the Answer Guide provides examples of ideas that you can use to get the conversation going.

BUILDING CAPACITY

This activity builds on the **Math is More than Number** module, but does not require module completion. (Module 2, Segment 2)

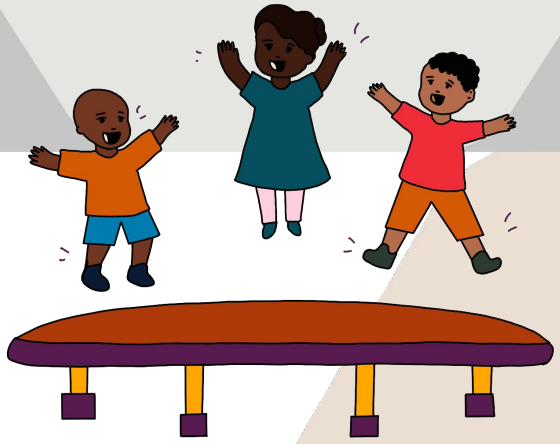
ADAPTATIONS

Use these ideas to modify the activity based on:

- child age,
- time and resources available for implementation
- caregiver needs.

TIPS

Blue text indicates something that facilitators might say (e.g.,"**What is happening in this photo?**"). Regular text is information for facilitation.



ACTIVITY 2.5

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TODDLERS UNDER CONSTRUCTION

GETTING READY

ACTIVITY OVERVIEW

In this activity, caregivers will explore opportunities to talk about math with their toddlers during block play.

Toddlers are inquisitive by nature, and blocks provide a great opportunity to nurture their curiosity and pair it with math talk. This activity uses different block building scenarios to promote brainstorming ways to include math topics in play.

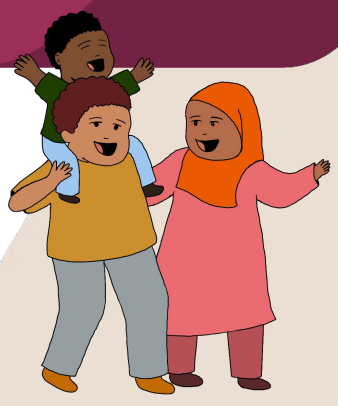
PREPARATION

5-15 Minutes

To become familiar with key early math topics, please review the brief descriptions available at: https://familymath.stanford.edu/toolkits/

Before selecting this activity, it is important to be sure it is relevant for all caregivers you are planning to use it with. You can do this by confirming that your caregivers have toddlers, or children between 1-3 years old.

Be ready to project the images. Arrange the seats in such a way that caregivers can see the screen or wall where you will show the images.



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ACTIVITY

INTRODUCTION
2 Minutes

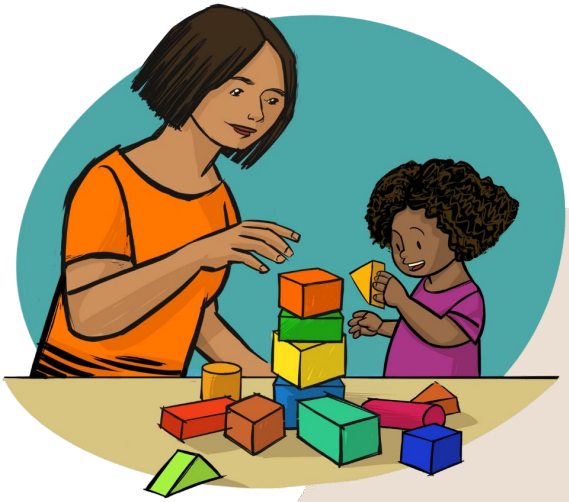
Introduce the activity. For example, you might say: **"Today we are going to talk about how to use blocks to introduce math talk to our toddlers. Let's look at some images of typical block play."**

ACTIVITY & DISCUSSION
Part 1: 15 - 30 Minutes

In this activity, you will show images of caregivers and toddlers playing with blocks.
You can provide printed copies of the images, or project them on a digital screen.

"I'm going to show you a picture of a child and a caregiver playing with blocks, and then we will think of ideas for including math talk in that situation."

Begin the activity with a brief discussion of math as more than counting, numbers, and shapes. Include discussion of measurement, spatial relations, and patterns.



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ACTIVITY

ACTIVITY & DISCUSSION

Part 2: 15-30 Minutes

Next, using the prompts with each image, ask caregivers to identify how each image can address three different math topics with blocks (3 ideas per image). You can use the examples provided in the Answer Guide to get the conversation going. Be sure to stop on each picture long enough to discuss it. Hurrying through the pictures may cause missed opportunities to talk about math.

- "Here's the first image. Try to think of three ways to talk about math in this situation."
- "What are some other math topics we can use in this situation?"

During the discussion: Call attention to the fun and engaging ways caregivers can support their toddlers' math development. Encourage caregivers to ask questions that build on the child's interests. In the best-case scenario, the caregiver responds to the child's lead in play, and builds on the child's interests when asking questions about construction and blocks.

Care needs to be taken to avoid turning a fun activity into a lesson, with the caregiver showering the child with questions.

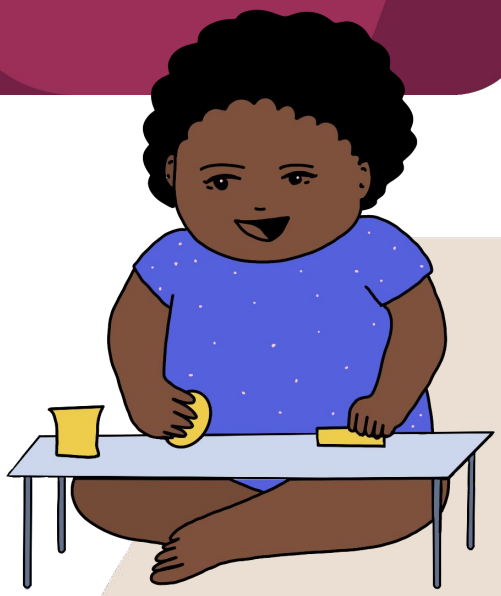
CLOSING

10-15 Minutes

Incorporate this key takeaway in how you close the session with caregivers. You can state it as written, or paraphrase based on the caregiver's experiences.

Blocks can be an easy way to support the math development of your child.

To help solidify learning, ask families to share one thing they learned about early math from this activity.



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TODDLERS UNDER CONSTRUCTION

ADAPTATIONS

CHILD'S AGE

Consider the ages of the toddlers in the families you work with. If the children are very young (1-year-olds), consider how their caregivers' math talk about the blocks might be different compared to math talk used with an older child (say, one who is 3). Help caregivers reflect on when to ask their children questions, and when modeling and labeling can be used. Help caregivers follow their child's lead when describing block play and asking questions.

Highlight for caregivers that providing content just a bit harder than what they think their child can do is ideal, because they can scaffold their children's success. Scaffolding can help their children "reach" to that content by talking about it, giving them clues, and guiding their understanding.

CHILD'S AGE

If you have limited time to share the activity with caregivers, consider selecting just 1-3 pictures and using the time to expand on topics within each picture.

CAREGIVER NEEDS

If the caregivers you work with require accommodations to participate, be sure to support their needs by:

- Offering closed captioning when needed.
- Providing all materials in caregivers' native language (with translations when relevant and discussion in the native language when possible).

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CAREGIVER MATERIALS

1) A caregiver and child are building a tower. The caregiver builds the tower, and the child knocks it down and squeals with delight. The child says, "Again!" What are three ways the caregiver could embed math talk in this scenario?

2) A child is building a tower of blocks, and has blocks of various shapes and colors nearby. What are three ways the caregiver could embed math talk in this scenario?

3) A child has made a house structure with blocks of various shapes and sizes. She says to the caregiver, "More blocks, please!" and "Make bigger!" What are three ways the caregiver could embed math talk in this scenario?

ACTIVITY 2.5

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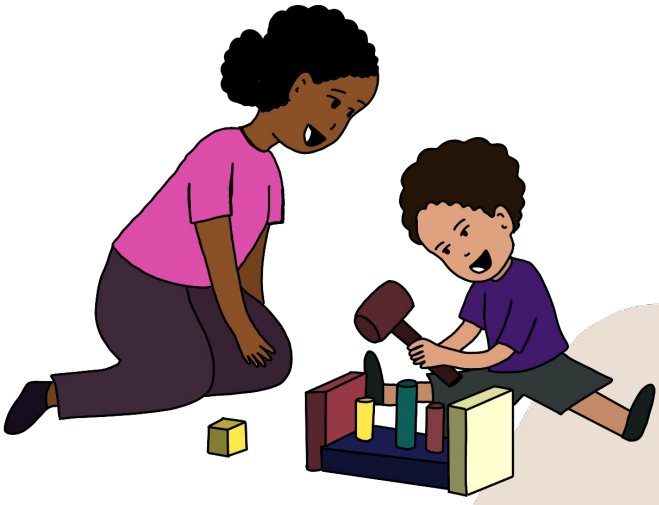
CAREGIVER MATERIALS

4) Two children are lining up blocks across the floor. The blocks are various colors, and could be assembled into patterns. What are three ways the caregiver could embed math talk in this scenario?

5) A child and caregiver are stacking blocks. The child selects blocks of various colors, and a uniform size. What are three ways the caregiver could embed math talk in this scenario?



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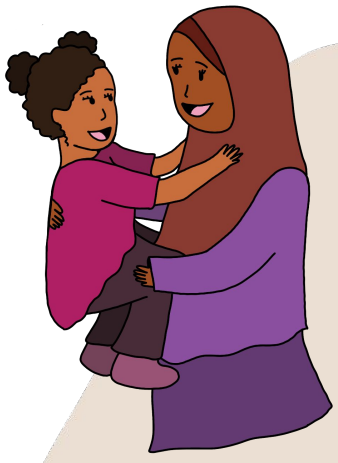
ANSWER GUIDE

Examples of Math Talk During Block Play - PART 1

IMAGE 1:

- "I see you are making a tall tower! Let's count to see how many blocks you used!" (counting and measurement)
- "Do you want more blocks? How many blocks should we add? 1, 2 or 3?" (show each set of 1, 2, and 3) (counting and number) "Now how many blocks are there?" (adding) "You said you are going to knock down your tower. Okay, let's count down to knock it over! Ready? 5, 4, 3, 2, 1, Knock down! Now it is not tall any more!" (counting)
- "I see you put all of these blocks over here together. They are all the same shape. I wonder what shape they are? Let's count how many sides this one has: 1, 2, 3. These blocks have three sides — each side is a triangle." (counting and shapes)
- "I see you are building walls with cubes. All these blocks have four sides: 1, 2, 3, 4 — each side is a square." (counting and shapes)
- "You made two towers! This tower is high and this tower is low, which one is taller than your truck?" (spatial relations and measurement)
- "The tall tower is behind the bear." (space and place)
- "I see you are making a tower. Is it as tall as you are? Let's measure to see how many blocks we need. If we stack them up we can see how many blocks tall you are!" (measurement)



TODDLERS UNDER CONSTRUCTION

ANSWER GUIDE

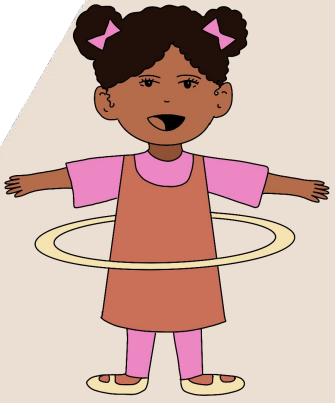
Examples of Math Talk During Block Play - PART 2

IMAGE 2:

- "Look at all these blocks! They are so big! These are much smaller! (measurement)
- "Look at these blocks. How many of them are red?" (counting and number)
- "You have so many blocks. Let's make a pattern with the colors." (patterns)
- "Let's look at the shapes. What shape is this block?" (shapes)
- "What shape is the block next to the red block?" (shapes and spatial relations)
- "Let's measure how tall this tower is. Let's see by counting the blocks." (measurement and counting)

IMAGE 3:

- "Here you used triangle blocks, and here we are using rectangular blocks. This is a rectangle." (shapes)
- "You want it to be bigger? How many blocks should we add?" (counting and adding)
- "This new tower is next to your tall tower." (spatial relations)
- "What shape is this green block? It's a triangle." (shapes)
- "Can we measure how tall this tower is? Let's see by counting the blocks." (measurement and counting)
- "Let's make the building big enough for bear to fit inside it!" (space and place)



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TODDLERS UNDER CONSTRUCTION

ANSWER GUIDE

Examples of Math Talk During Block Play - PART 3

IMAGE 4:

- "He has a red cube, and you have a yellow cube." (shapes)
- "You are making a pattern. Look! Red, yellow, red, yellow, what comes next? (patterns)
- "Let's count the blocks! 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. We have 10 blocks." (counting)
- "What color is the tall block that is next to this shorter block?" (spatial relations and measurement)
- "Let's see if we can make the line of blocks as long as you are. If we line them up next to you, we can see if they reach. Let's count and see how many it takes. 7! You are seven blocks long." (measurement and counting)

IMAGE 5:

- "I see you are picking blocks that are all the same size. What shape are they?" (shapes)
- "Your tower is getting very tall! How many blocks are in it? Let's count." (counting)
- "These blocks over here are a different shape. Do you want to add them? Where will they go?" (spatial relations)

ACTIVITIES FOR FAMILY SUPPORT PROFESSIONALS:
EXPLORING EARLY MATHEMATICS

"Everyone Succeeds" was developed for Family Support Professionals to use with the families they serve. All activities are available at no cost, on the Institute of Child Development Math and Numeracy Lab website, for private use with families and caregivers. These materials may not be reproduced or distributed for any for-profit effort without explicit permission from lead developers, Drs. Wackerle-Hollman and Mazzocco.

Module 1: How Attitudes and Dispositions May Affect Early Math

- Activity 1.1 Everyone Succeeds
- Activity 1.2 Flipping the Script
- Activity 1.3 Mathitudes
- Activity 1.4 Learning from Math Mistakes
- Activity 1.5 Comments, Questions, and Conversations (CQC's)
- Activity 1.6 Attitude Adjustments
- Activity 1.7 We Are All Math People

Module 2: Math is Numbers and More: Exploring Early Math Topics

- Activity 2.1 Math Kaleidoscope
- Activity 2.2 Early Math Topics
- Activity 2.3 Picturing Math
- Activity 2.4 Measuring Up!
- Activity 2.5 Toddlers Under Construction

Module 3: Finding Math in Everyday Life

- Activity 3.1 Early Math Success Stories
- Activity 3.2 Math Snacks
- Activity 3.3 Becoming a Math Detective
- Activity 3.4 Make a Statement with Math
- Activity 3.5 Everyday Math in Action
- Activity 3.6 Routines Roadmap

These activities were developed by the Math and Numeracy Lab, directed by Michèle Mazzocco, Institute of Child Development (ICD), in collaboration with Alisha Wackerle-Hollman, Director of the IGDIlab, Department of Educational Psychology, both at the University of Minnesota. Contributors include ICD doctoral students Sarah E. Pan and Jasmine R. Ernst. This work was supported by Heising-Simons Foundation DREME Network Awards 2018-0670 and 2020-1777. We thank members of the Math and Numeracy Lab that contributed to this work, family support professionals who provided feedback or welcomed us (and our activities) into their classrooms, and our community partner consultants who provided insight on language selection and delivered illustrations to make this work meaningful to the Latine and Somali communities.

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