

Training 6. Math Talk at Home

Make Connections: You and Me and Math

Background for trainers

Goals

- Understand why and how to include “math talk” in everyday activities with children
- Recognize that math for young children includes sorting and sequences (first, second, next, last)
- Learn how to respond when a child has an incorrect math idea

Materials

- Pencils or pens, 1 per participant
- HANDOUT 6 (6A-6B), 1 per participant, English or Spanish

Before beginning

- Copy handouts in color
- Set up projector for video (optional)

A. Welcome and overview (2 minutes)

1. Explain the session plan

Welcome! In this training, you will learn:



- ▶ why and how to include “math talk” in everyday activities with children,
- ▶ that math for young children includes sorting and sequences (first, second, next, last),
- ▶ how to respond when a child has an incorrect math idea.

B. Videos (15 minutes)

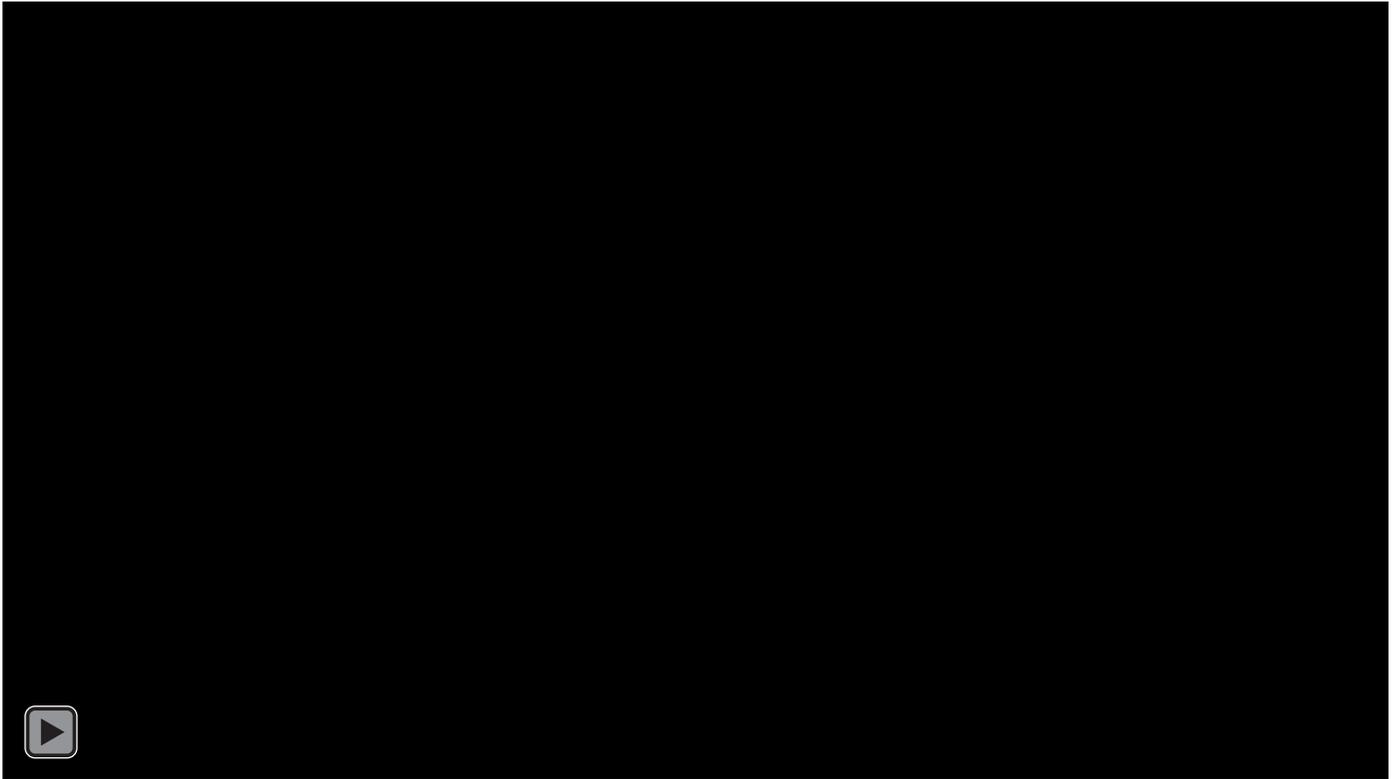
1. Introduce SORTING LAUNDRY BY SIZE video

- ▶ This video shows a mother and child sorting laundry. This is based on the “Talk Math Together” part of a MAKE CONNECTIONS STORYTIME CONNECTION sheet (FIRST, NEXT, LAST). As you watch, think about:



How does the mother help her child learn about sizes while sorting laundry?

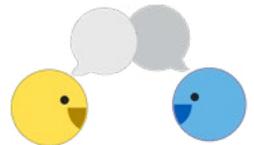
2. Watch SORTING LAUNDRY BY SIZE



3. Have participants discuss in pairs for 1-2 minutes



How does the mother help her child learn about sizes while sorting laundry?



4. Review key points



The mother helps the child learn about sizes in several ways:

- ▶ The mother connects small, medium, and large to sizes of people in the family.
- ▶ She helps the child “measure” by holding up clothes against herself.
- ▶ She asks, “How do you know?”. She does not say if the child is right or wrong.

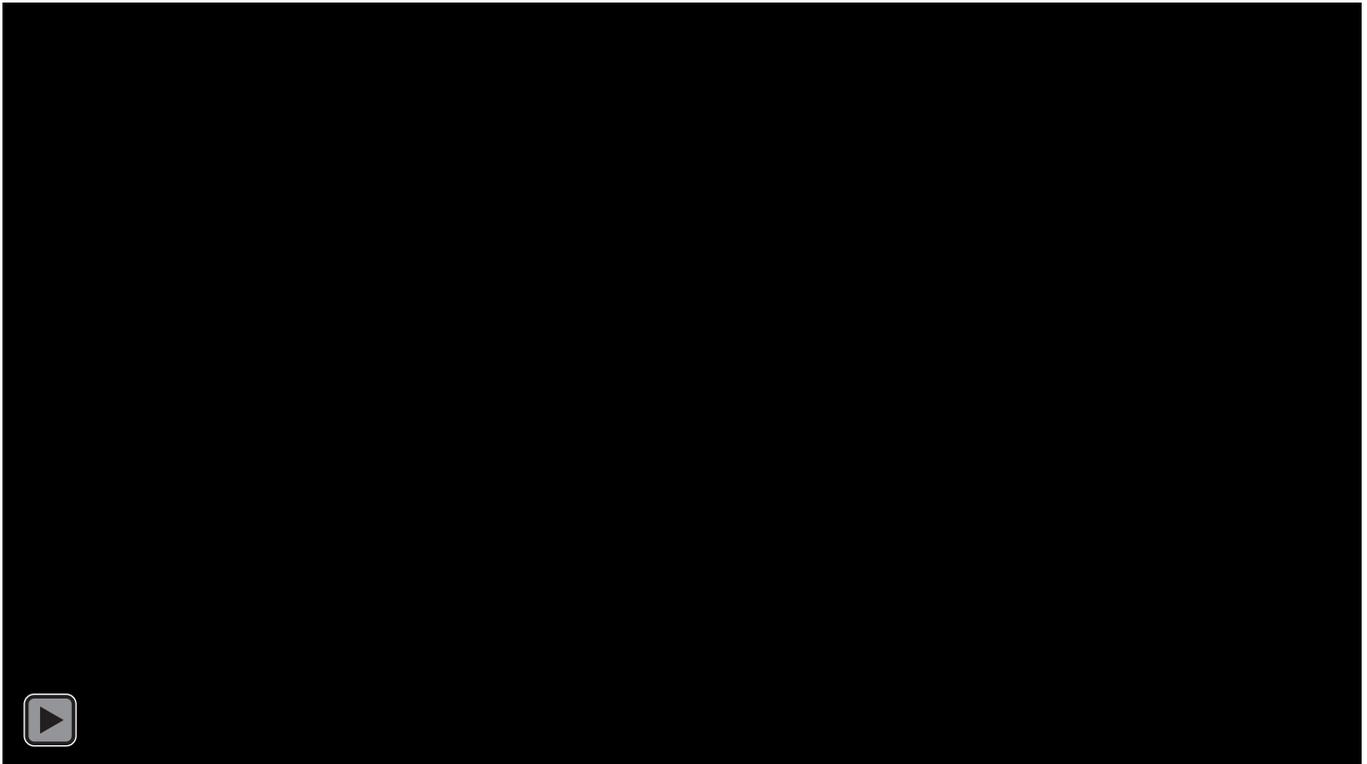
5. Introduce PAJAMA TIME video

- ▶ In this video, the mother helps the child get ready for bed. This is based on the “Talk math together” part of a MAKE CONNECTIONS STORYTIME CONNECTION sheet (WHAT FITS?). As you watch, think about:



How does the mother help her child understand first, second, before, and after?

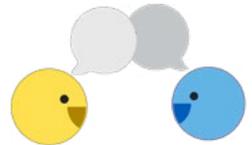
6. Watch PAJAMA TIME



7. Have participants discuss in pairs for 1-2 minutes



How does the mother help her child understand first, second, before, and after?



8. Review key points



The mother helps the child understand sequences (first second, before, and after):

- ▶ She uses math words (first, then, second).
- ▶ She doesn't tell the child if she is right or wrong. Instead, she models the child's suggestions with clothes. For instance, she puts the diaper on top when the child says to put on pants first.

9. Introduce COUNTING IN THE KITCHEN video

- ▶ This video shows a mother preparing food with her child. The mother asks the child to count. This is based on the "Talk Math Together" part of a MAKE CONNECTIONS STORYTIME CONNECTION sheet (MORE, LESS, SAME). As you watch this video, think about:



What does the mother do when the child counts incorrectly?

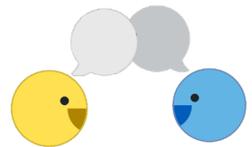
10. Watch COUNTING IN THE KITCHEN



11. Have participants discuss in pairs for 1-2 minutes



What does the mother do when the child counts incorrectly?



12. Review main points



When the child counts incorrectly, the mother helps her learn:

- ▶ The mother says “show me” instead of saying if the child is right or wrong.
- ▶ She has the child touch the peppers while they count together. This gives the child a chance to hear the counting sequence correctly as she counts with her mother.
- ▶ The mother is patient! Children need a lot of experience touching and handling objects as they count them. Many children can say the counting words before they can count objects correctly. Learning to count objects takes lots of time.

TELL STAFF

HANDOUT 6A is the second page of one of the STORYTIME CONNECTIONS. Each STORYTIME CONNECTION includes a sheet with ideas for math talk when reading aloud and a sheet for related math talk in daily activities. HANDOUT 6A is the “at home” part of a STORYTIME CONNECTION about counting books.



C. Activity: MORE, LESS, SAME (10 minutes)

1. Distribute and introduce HANDOUT 6

- ▶ HANDOUT 6A gives ideas on how to talk about counting and comparing amounts when you’re in the kitchen.

Read the sample math talk on 6A out loud or ask for volunteers to do so.

- ▶ You will be coming up with a math talk question to use when you’re in the kitchen. You will also think through how to respond when a child makes a counting mistake.

Read HANDOUT 6B out loud, including the math talk checklist.

- ▶ Math talk questions are about the child’s thinking, for example, “How do you know there are enough muffins for everyone?” or “How do you know you have one more cookie than me?” As children explain their thinking, you can observe how they compare amounts. If they are not comparing correctly, show them how you do it. They will learn from you.
- ▶ Avoid closed questions like “How many more do you have?”. Children may answer correctly or incorrectly without understanding how to compare amounts. They also rely on you to tell them if they are correct and may not gain the confidence to decide on their own.

2. Participants fill out HANDOUT 6B in pairs

As participants work, circulate to help them see if their ideas fit the math talk checklist. Help them revise if needed.

D. Wrap Up (2-5 minutes)

1. Review key points of the session



To review, here are the main points of the session:

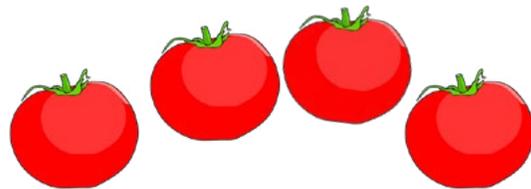
- ▶ Counting is more than number words. Learning how to count objects takes lots of practice. If children make mistakes, count objects along with them. They will hear the correct words from you and eventually start using them.
- ▶ Use math words, like small, medium, large, first, second, to help children learn about math through everyday activities.
- ▶ Always ask children to explain their ideas. If they are too young to explain their thinking, they will still learn that their ideas matter. You can also explain your thinking and they will learn from you.

Storytime Connections
Talk Math Together**Math topic:**
Comparing, counting**Math vocabulary:** Less, more, next, same,
counting words (one, two, three ...)

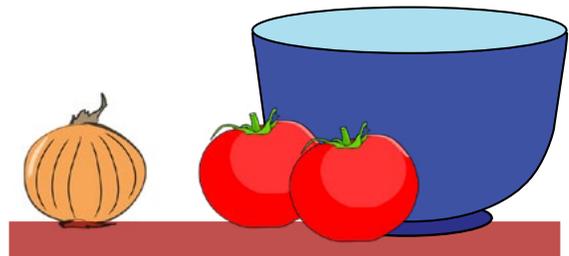
Compare and count together when you're cooking, putting away groceries, or cleaning up.

MORE, LESS, SAME**Talk about amounts.**

We need **four** tomatoes for the salsa.



We need **one more** onion.



How can you tell if we have enough tortillas for each person to get **two**?



Math Talk at Home

Handout 6B

Write down a math talk question that involves a child in comparing amounts.

_____?

Check that your question is math talk. If it is not, revise it.

MAKE SURE IT IS MATH TALK:

Does your question ask the child to explain his or her thinking?

If not, revise your question so that the answer involves explaining thinking.

A friend asks you, "My child skips the number 'three' and counts, "one, two, four." What should I do?"

How would you answer?

Conexiones con los cuentos
Plática matemática

Tema de matemáticas:
Comparando, contando

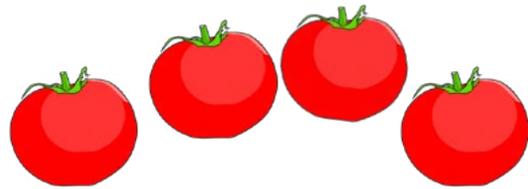
Vocabulario de matemáticas:
Menos, más, igual, contando palabras
(uno, dos, tres ...)

Comparen y cuenten juntos cuando estén cocinando, guardando alimentos o limpiando.

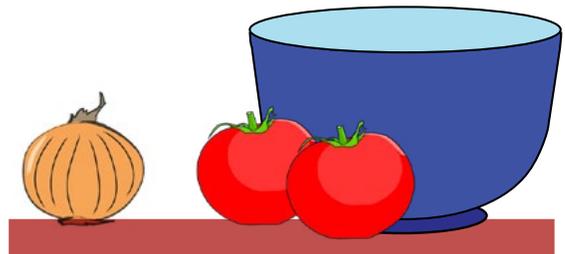
MÁS, MENOS, IGUAL

Hablen sobre cantidades.

Necesitamos **cuatro** tomates para la salsa.



Necesitamos una cebolla **más**.



¿Cómo puedes saber si tenemos suficientes tortillas para que cada persona coma **dos**?



Plática matemáticas en la casa

Folleto 6B

Escriba una pregunta de Plática matemática que involucre a un/a niño/a en la comparación de cantidades.

¿ _____ ?

Verifique que su pregunta sea Plática matemática. Si no es así, revíselo.

ASEGÚRESE DE QUE SEA PLÁTICA MATEMÁTICA:

¿Su pregunta pide que su niño/a que explique su pensamiento?

Si no es así, revise su pregunta para que la respuesta incluya la explicación de su pensamiento.

Una amiga le pregunta, "Mi hijo/a al contar se salta el número 'tres' y cuenta, "uno, dos, cuatro." . ¿Qué debo hacer?"

¿Cómo le respondería?