

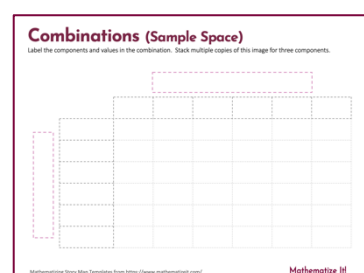
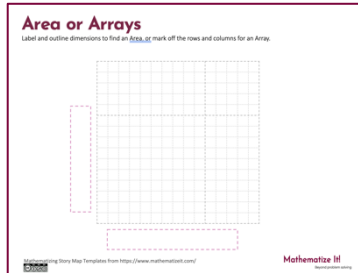
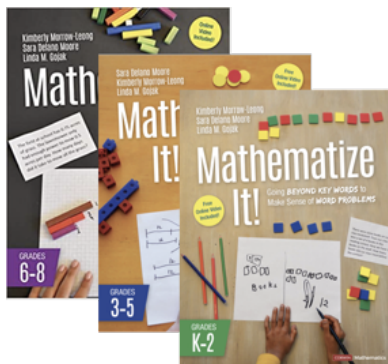
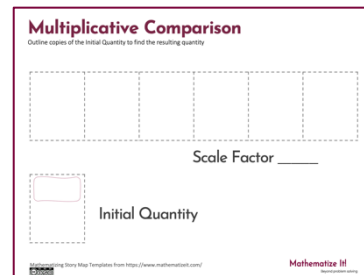
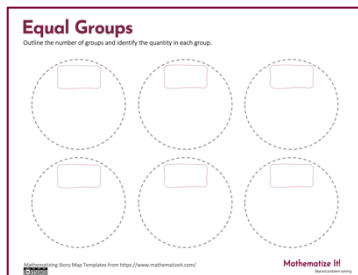
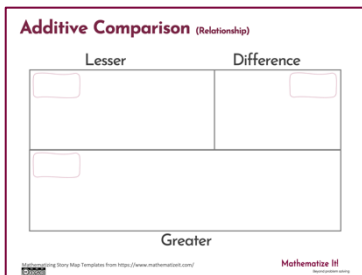
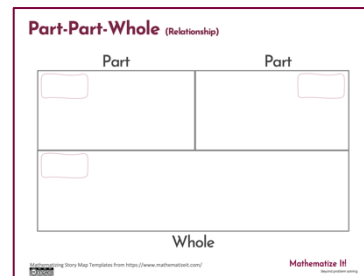
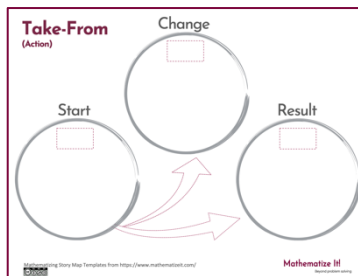
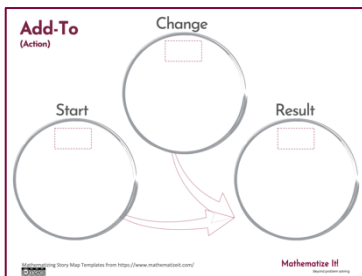
# #3 Maya in the Kitchen



## Add-To Start Unknown

Making sense of word problems with mathematical comprehension & operation sense.

## Mathematizing Story Maps



# Mathematize It!

Beyond problem solving



Mathematizing Story Map Templates from <https://www.mathematizeit.com/>  
Sara Delano Moore and Kimberly Morrow-Leong

# Add-To

(Action)

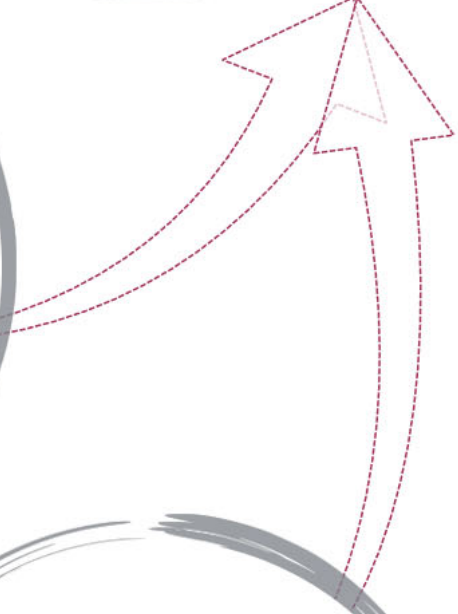
Change



Start



Result



# Teacher Notes

## Mathematizing Story Maps

### Maya in the Kitchen



#### Problem Type

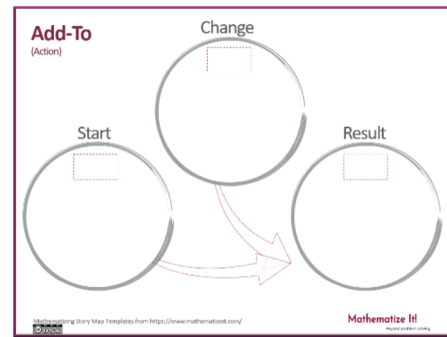
This story supports developing mathematical ideas around Add To job of addition. The Add-To problem situations describe a story where a starting value is changed by a quantity coming into the situation, leading to a resulting or ending value. In this situation, something will happen, and students will act it out on the Mathematizing Story Map.

#### Missing Element

In this story, the starting value is unknown; students are figuring out the beginning of the story. Students know the changing action and end of the story and work to figure out where the situation began by “playing the movie backwards.”

#### The Mathematizing Story Map

The Mathematical Story Map provided supports the narrative storyline of Add To situations by providing space to show the starting value, the change coming into the situation, and the resulting value at the end.



As you dig into the story, you and your students might also find opportunities to explore Part-Part-Whole situations where the total is unknown.

#### Addition & Subtraction Problem Situations

<b>Action Situations</b>	<b>Add To</b>	Result Unknown	Change Unknown	Start Unknown
	<b>Take From</b>	Result Unknown	Change Unknown	Start Unknown
<b>Relationship Situations</b>	<b>Part-Part Whole</b>	Total Unknown	One Part Unknown	Both Parts Unknown
	<b>Additive Comparison</b>	Difference Unknown	Greater Quantity Unknown	Lesser Quantity Unknown

Mathematizing Story Maps by Sara Delano Moore & Kimberly Morrow-Leong  
Find more at [mathematizeit.com](http://mathematizeit.com)



**Mathematize It!**

Beyond problem solving

## Day 1

Read the story at least once with your class. Talk about the story and support your students as they make sense of the events in the story as you would for any narrative.

Then encourage students to find the mathematics in the story with questions like these:

- *What quantities are in the story? How are they changing?*
- *What can you build or draw to show the storyline of a starting value, a change, and an ending value?*
- *How can the story map help record your thinking?*

If students start calculating numbers right away, particularly if they are “number plucking” or randomly doing calculations, refocus their attention on the action in the story.

Encourage students to use manipulatives as they work on the Mathematizing Story Map to show the action that is in the story. Label the quantities and their units. Before ending for the day, give students the opportunity to record their thinking on paper.

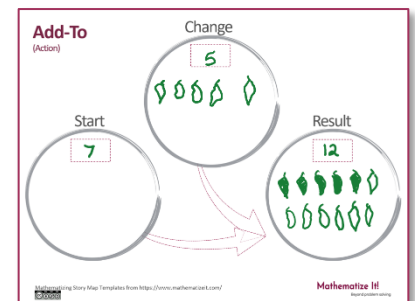
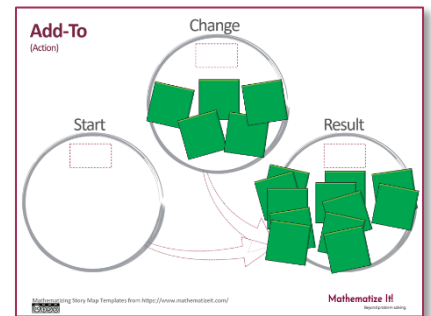
Encourage students to use manipulatives and visuals to show their thinking about the math in the story. Students should translate their work from manipulatives and sketches to the mathematical story map.

## Day 2

Reread the story and use the Mathematizing Story Map to retell it and act it out. Ask your students to translate their actions on the Mathematizing Story Map into an equation. Each student should be able to connect the elements of the story map to the narrative. Discuss the **quantities** in the story and what strategies students might use to find an answer to the question they have asked. Ask students to consider other mathematical stories (or variations on the current story) they can see in this narrative.

You may wish to use the [Three Reads Strategy](#) (p.15) to support student understanding of the text itself.

To focus on the story, create a **numberless word problem**. Remove the numbers from the story as the class discusses it.



## Day 3

Use the mathematizing story map to support solving the word problems provided. Take time for reading comprehension (does the story make sense?) before mathematical comprehension (what is happening in the story?) These questions can help students develop mathematical comprehension.

- *What quantities are in the story? How are they changing?*
- *What can you build or draw to show the storyline of a starting value, a change, and an ending value?*
- *How can the story map help record your thinking?*

Encourage your students to use manipulatives and visuals to show their thinking about the math happening in each problem. Students should translate their work from manipulatives and sketches to the mathematical story map.

## Days 4-5

Choose one or more of these options to continue developing student thinking.

- Continue working on the problems provided, focusing on the story map as a tool to develop mathematical comprehension and operation sense.
- Lead a discussion among students focusing on how the story map fits the narrative and problems provided. Use these questions to focus thinking on the job addition is doing in these situations:
  - *What is the action in each problem? What quantity is coming into the situation as a change?*
  - *How does the story map show the change in the situation?*
  - *Where is each part of the story (beginning, change, and end) shown on the map?*
  - *What number sentence(s) can you write to show what is happening in the story map?*
- Ask students to develop new narratives or problems, either from scratch or as extensions of the current storyline, which can also be told using the same mathematical story map. Encourage students to explain the underlying connections which make the mathematics similar even if the story contexts are not the same.

To read more about problem situations and the four operations, check out the [\*Mathematize It!\*](#) book series.



Mathematizing Story Maps by Sara Delano Moore & Kimberly Morrow-Leong  
Find more at [mathematizeit.com](http://mathematizeit.com)



**Mathematize It!**

Beyond problem solving

## Maya in the Kitchen Practice Problems

Use objects, pictures, numbers, and words to describe what is happening in each problem. Use a mathematizing story map to record your thinking. Sketch your thinking on this page. Write your number sentence and answer.

Maya is rolling dough balls to help make tortillas. She forgot to count them at first but knows the family needs 24 tortillas for Sunday dinner. Once she started counting, Maya made 15 dough balls before she realized she had enough. How many dough balls did Maya make before she started counting?

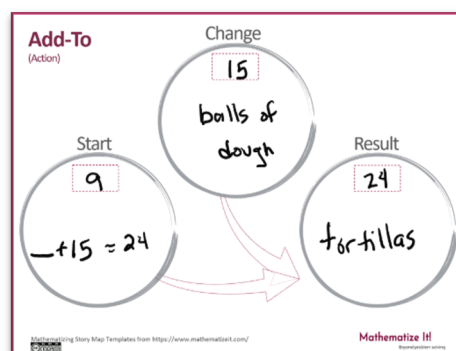
Maya is helping set the table for a family party. Her brother started setting the table last night and Maya has to set 3 more places so that there are enough places for all 7 family members. How many places did Maya's brother set?

It's time to make tres leches cake for dessert – Maya's favorite! There has to be enough cake for a big family picnic so Maya and her grandmother are making two cakes – they need 10 eggs altogether. Abuelita cracked some eggs and then asked Maya to finish the work. Maya cracked 8 eggs. How many eggs did her grandmother crack?

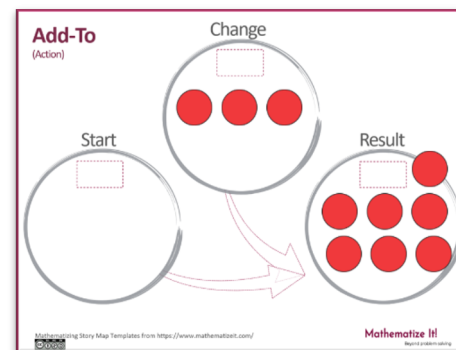
## Maya in the Kitchen Practice Problems

Use objects, pictures, numbers, and words to describe what is happening in each problem. Use a mathematizing story map to record your thinking. Sketch your thinking on this page. Write your number sentence and answer.

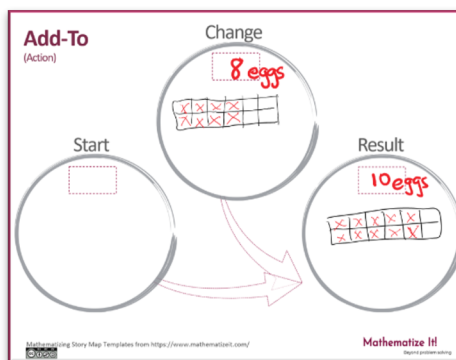
Maya is rolling dough balls to help make tortillas. She forgot to count them at first but knows the family needs 24 tortillas for Sunday dinner. Once she started counting, Maya made 15 dough balls before she realized she had enough. How many dough balls did Maya make before she started counting?



Maya is helping set the table for a family party. Her brother started setting the table last night and Maya has to set 3 more places so that there are enough places for all 7 family members. How many places did Maya's brother set?



It's time to make tres leches cake for dessert – Maya's favorite! There has to be enough cake for a big family picnic so Maya and her grandmother are making two cakes – they need 10 eggs altogether. Abuelita cracked some eggs and then asked Maya to finish the work. Maya cracked 8 eggs. How many eggs did her grandmother crack?



Add To Situations, Start Unknown