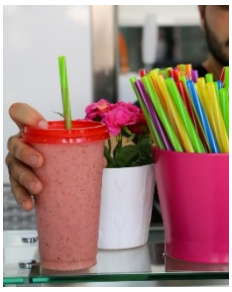
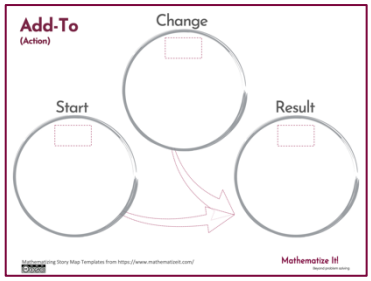
#2 Maya at the Farmer's Market

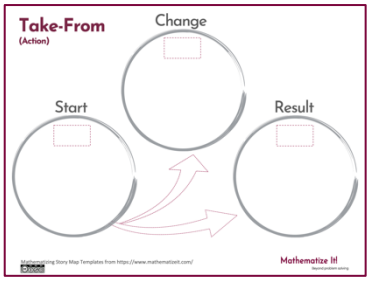


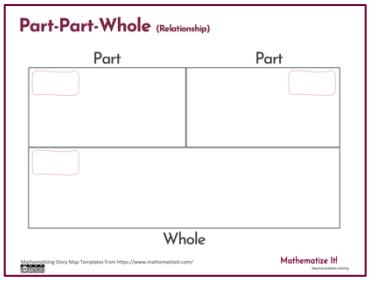
Add-To
Change Unknown

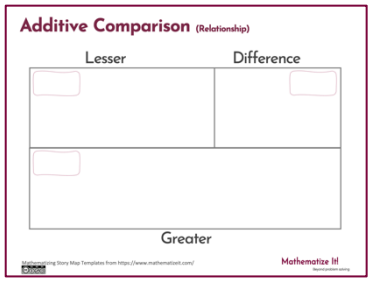
Making sense of word problems with mathematical comprehension & operation sense.

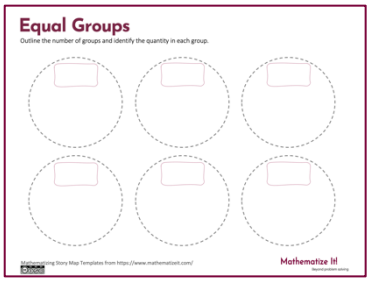
Mathematizing Story Maps

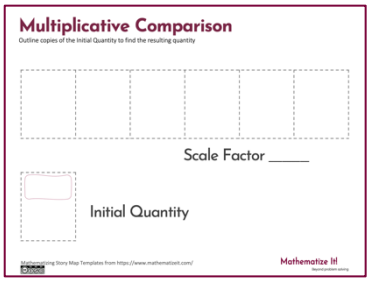


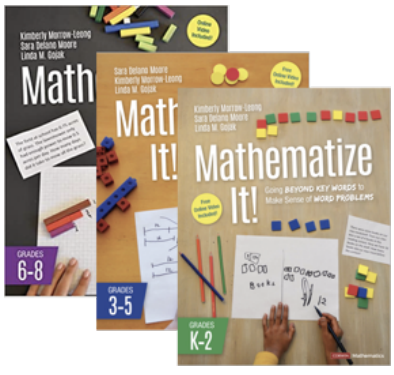


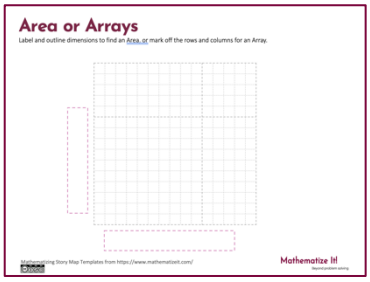


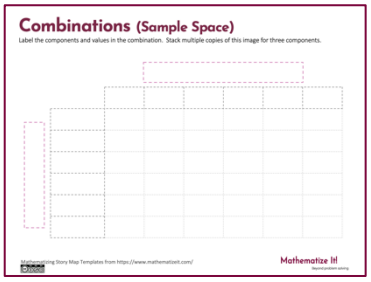












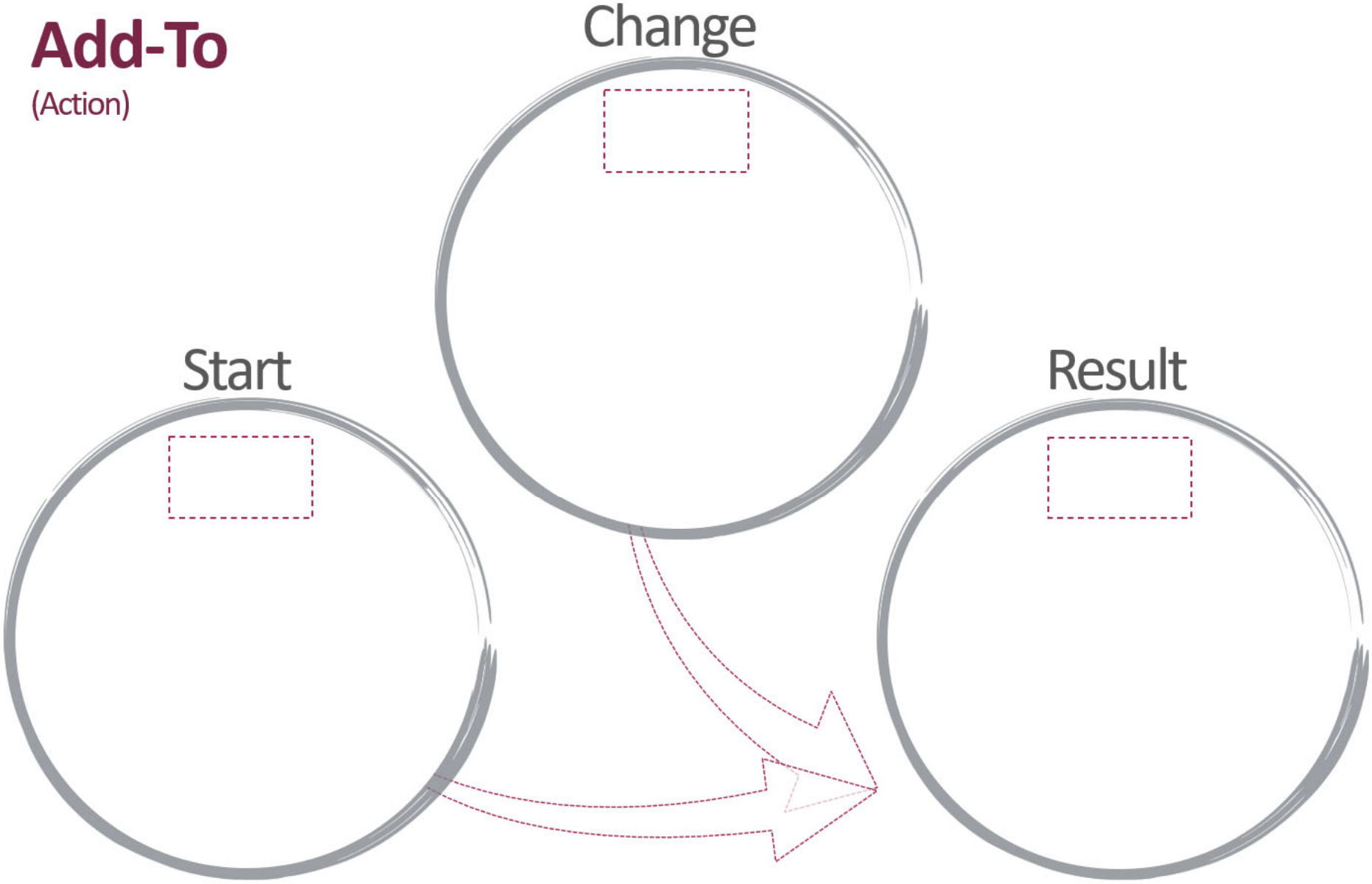
Mathematize It!

Beyond problem solving

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

Add-To

(Action)



Mathematize It!

Beyond problem solving

Teacher Notes
Mathematizing Story Maps
Maya at the Farmers' Market

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.

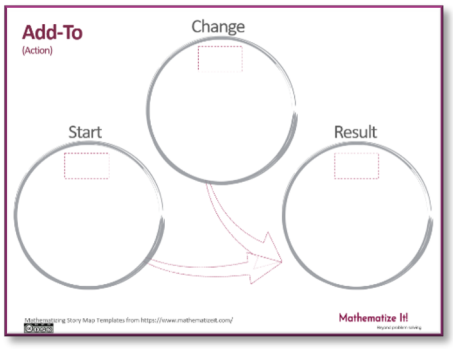
Missing Element

In this story, the change is unknown; students are figuring out the middle of the story. Students know the beginning and end of the story and work to figure out what happened in the middle, what quantity changed by coming into the situation.

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

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

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.

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

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

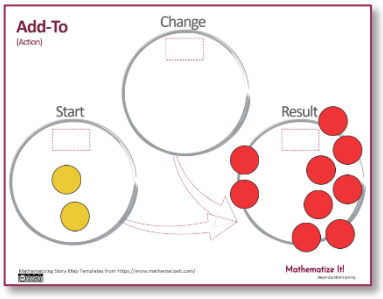
- *What quantities are in the story? How are they changing?*
- *What can you build or draw to show the storyline of a starting value, a change, and an ending value?*
- *How can the story map help record your thinking?*

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.

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

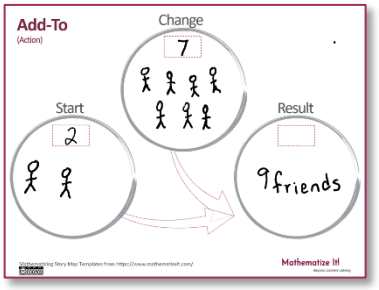
Encourage students to use manipulatives as they work on the Mathematizing Story Map to show the action that is in the story. Label the quantities and their units. Before ending for the day, give students the opportunity to record their thinking on paper.

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.



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?*

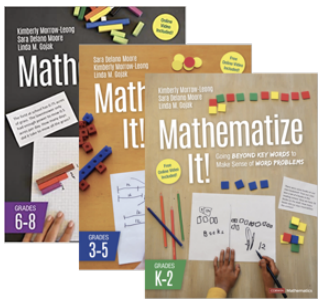
Encourage your students to use manipulatives and visuals to show their thinking about the math happening in each problem. Students should translate their work from manipulatives and sketches to the mathematical story map.

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.



Maya at the Farmer's Market 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 has a goal of trying 8 new fruits this summer. She has already tried 6, including kiwi – her new favorite. How many new fruits must Maya choose at the market today in order to meet her goal?
Julissa's friends are coming over to watch a movie. There are 5 chairs in the room and Julissa brings in some more so there are enough for all 9 friends. How many chairs did Julissa move into the TV room?
Emilee is getting ready to go to a jazz dance competition. She wants to take a sticker for each of her team friends. She finds 3 stickers and tells her mom they need to go shopping so she has 12 stickers to take to the competition. How many stickers do they need to buy?

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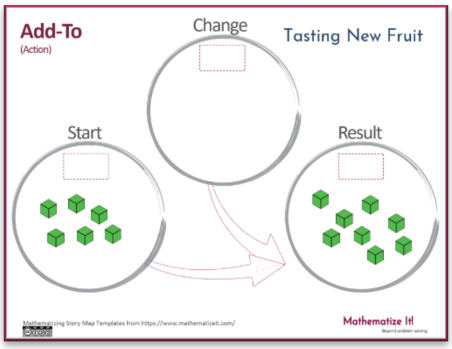

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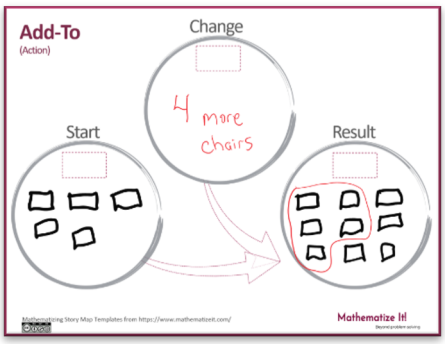

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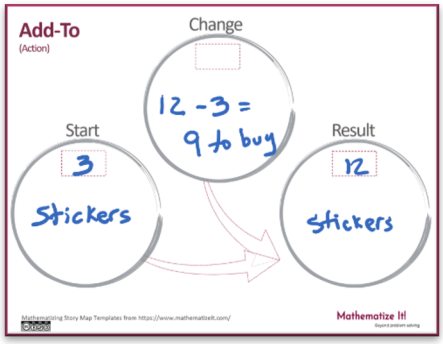

Add To Situations, Change Unknown