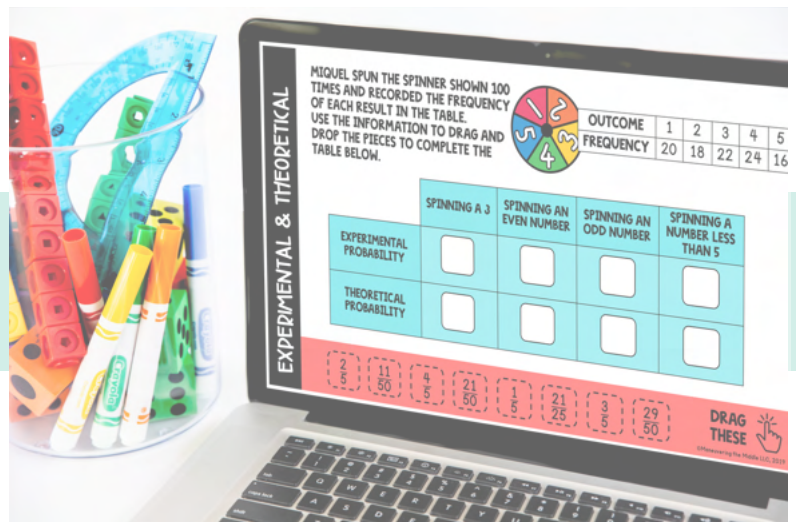# MANEUVERING THE MIDDLE

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RESTATE, REPRESENT, REFLECT

A MANEUVERING THE MIDDLE® RESOURCE

WHAT IS IT?

This resource is designed to equip students with the problem-solving skills presented in the math training, "Practical Problem-Solving Strategies". The materials provided can be used in a variety of ways to best fit the needs of your classroom.

WHAT'S INCLUDED?

This resource includes three suggested activities as ways to incorporate practice with a set of word problem cards. The table below outlines the specific activity instruction pages as well as the sets of word problem cards to choose from according to the type of values the problems include.

page	resource
4	Activity Instructions – Guided Mat Practice
5	Activity Instructions – Stations
6	Activity Instructions – Gallery Walk
7	Problem-Solving Mat
8	Recording Sheet
10	Answer Key
11	Whole Number Cards
17	Decimal Cards
23	Fraction Cards

TEACHER TIPS

- Choose the set of word problem cards based on the abilities and needs of your students.

- Each set of cards includes 18 problems to provide a flexible variety of options. Do not feel obligated to include all cards but rather choose the number of cards that works for the time you have available. Be sure to factor in time for meaningful discussion on the problem-solving process.

LEARN MORE ABOUT ALL ACCESS

All Access is math curriculum designed to meet students' needs and empower teachers. You can find out more by clicking the link below.

maneuveringthemiddle.com/math-curriculum

GUIDED MAT PRACTICE
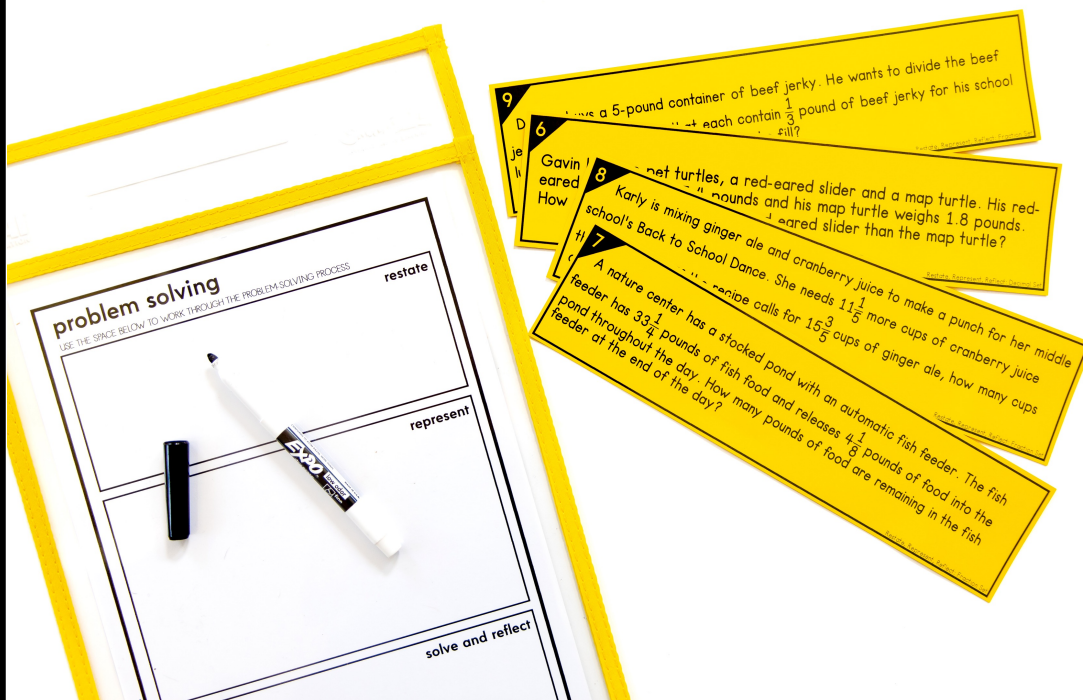## RESTATE, REPRESENT, REFLECT

IDEAS FOR IMPLEMENTATION

This activity provides a teacher-guided practice where students apply problem-solving skills to solve word problems. This activity is a great way to promote classroom discussions and allows students to construct mathematical arguments to justify their solutions.

INSTRUCTIONS

1. Select the word problems you will work through as a class. Consider choosing a variety of problem types to highlight how different types of representations can be used to model situations.

2. Print and laminate a class set of the "problem-solving skills" mat.

3. Project a word problem on the board and instruct your students to use a dry erase marker to work through the problem-solving process on their mat.

4. After students have completed the problem, assign each student a partner to discuss their problem-solving process and solution. Allow students to correct errors and collaborate to determine the solution.

5. As partners are discussing, circulate the room and select a few students to share their constructed representations and solutions with the entire class. Consider selecting students who represented the problem situations differently, but arrived at the correct solution, to emphasize that there can be multiple ways to solve a given problem situation.

STATIONS
RESTATE, REPRESENT, REFLECT

PARTNERS   GROUPS

IDEAS FOR IMPLEMENTATION

Stations are a great way to incorporate movement and cooperative learning in your class. Students will enjoy getting out of their seats to apply problem-solving skills as they solve a variety of word problems.

INSTRUCTIONS

1. Print selected word problems on cardstock and spread them out around the room.

2. Print and copy a recording sheet for each student.

3. Students should work in groups of 2-4 and can begin at any station. Set a timer for the appropriate amount of time to complete a station (around 5-7 minutes) and allow students to complete the problem-solving process for the word problem on their recording sheets.

4. When time is up, students should rotate to the next station and will repeat this process until all stations have been completed.

TEACHER TIPS

• Consider having your students complete only one stage of the problem-solving process at each station. For example, students could focus on either the "restate" or "represent" portion to allow for exposure to more problems or to focus on a specific skill of the problem-solving process.

• To encourage participation from all group members, consider providing a package of sticky notes at each station so that students can first "restate" or "represent" the situation on a sticky note. Then, prompt students to discuss their ideas with the group before recording their final response on their recording sheet.
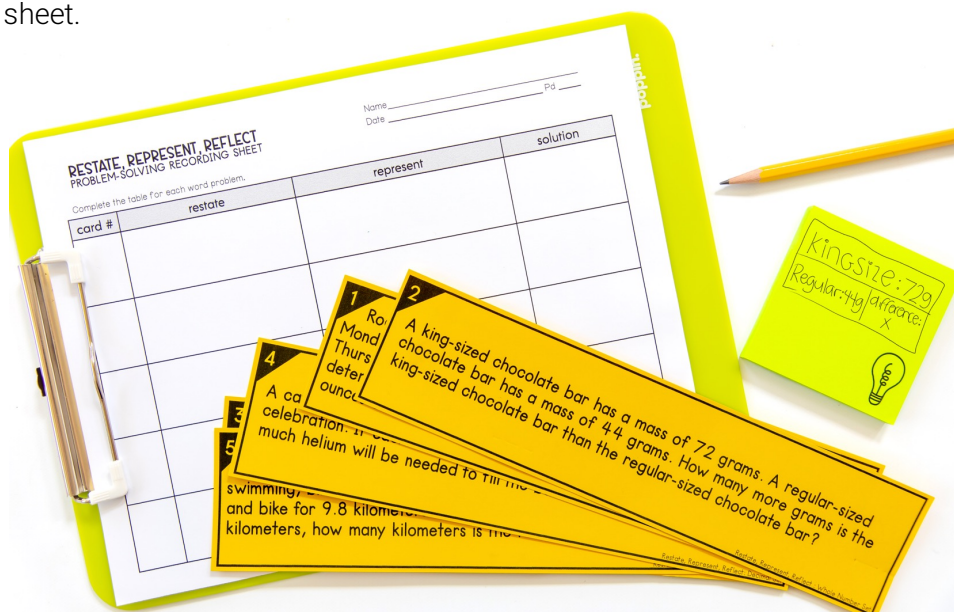
GALLERY WALK
RESTATE, REPRESENT, REFLECT

IDEAS FOR IMPLEMENTATION

A gallery walk is a helpful way to get students out of their seats as they apply problem-solving skills to solve word problems. This activity promotes collaboration and peer feedback as students observe and respond to the work of their classmates.

INSTRUCTIONS

1. Print selected word problems on cardstock.

2. For each word problem, you will need a piece of butcher paper or poster board. Divide the butcher paper into three sections with the following titles: "restate", "represent", and "solve & reflect".

3. Place each word problem with a piece of butcher paper around the room using tape, magnets, tacks, etc.

4. Students should work in groups of 2-4 and can begin at any word problem. Set a timer for the appropriate amount of time to complete ONE portion of the problem-solving process and instruct students to record their work on the butcher paper. For example, in the first rotation students will complete the "restate" section, in the next rotation students will complete the "represent" section, and in the final rotation they will complete the "solve & reflect" section.

5. As students rotate to the next station, they will observe the work done by previous groups, make any necessary adjustments or corrections to their work and then complete the next section of the problem-solving process. Students will repeat this process until all the stages of the problem-solving process have been completed for the word problems.

6. If you select the same number of word problems as you have groups of students, then after three rotations all the posted word problems will be completed and solved. Consider extending the activity by having your students continue to rotate around the classroom to observe their classmate's work. Challenge your students to add different ways to restate or represent the word problem on the butcher paper and provide feedback on the solution.

problem solving

USE THE SPACE BELOW TO WORK THROUGH THE PROBLEM-SOLVING PROCESS

restate

represent

solve and reflect

RESTATE, REPRESENT, REFLECT
PROBLEM-SOLVING RECORDING SHEET

Name_____

Date _____ Pd _____

Complete the table for each word problem.

card #	restate	represent	solution

card #	restate	represent	solution

RESTATE, REPRESENT, REFLECT
ANSWER KEY

PROBLEM #	WHOLE NUMBER SET	DECIMAL SET	FRACTION SET
1	118 oz	6.4 lbs	$6\frac{3}{4}$ lbs
2	28 grams	1.05 oz	$1\frac{1}{4}$ oz
3	17 lbs	10.8 lbs	$2\frac{2}{3}$ bags
4	72 ft³	16.8 ft³	16 ft³
5	21,884 m	2.4 km	$4\frac{1}{4}$ mi
6	4 times bigger	3 times bigger	4 times bigger
7	43 lbs	66.7 lbs	$29\frac{1}{8}$ lbs
8	220 oz	177.9 oz	$26\frac{4}{5}$ cups
9	73 g	26.05 g	15 sandwich bags
10	262 ft²	61.48 m²	$74\frac{5}{8}$ ft²
11	14,058 m	85.84 mi	$84\frac{3}{4}$ mi
12	18 dozen	11 dozen	18 dozen
13	654 cm	5.99 m	$13\frac{1}{2}$ ft
14	164 ft	40.2 m	131 m
15	5,708 lbs	2,914.44 lbs	$7\frac{1}{6}$ barrels
16	223 pieces	36.91 oz	$4\frac{2}{5}$ lbs
17	112 ft	39 m	$32\frac{2}{3}$ m
18	14 g	0.4 oz	$\frac{1}{4}$ oz

1 Roderick buys a package of chicken to use throughout the week. On Monday, he uses 28 ounces to make chicken salad for lunch. On Thursday, he grills 53 ounces of chicken for dinner. If Roderick determines he has 37 ounces of chicken remaining to cook, how many ounces of chicken did he buy at the beginning of the week?

2 A king-sized chocolate bar has a mass of 72 grams. A regular-sized chocolate bar has a mass of 44 grams. How many more grams is the king-sized chocolate bar than the regular-sized chocolate bar?

3 Esmeralda is a barista at Mug Haven. She opens a 56-pound bag of coffee beans at the beginning of the day. At closing time, she determines there are 39 pounds of coffee beans remaining in the bag. How many pounds of coffee beans were used throughout the day?

4

A car dealership orders 8 large balloons shaped like a car for their grand opening celebration. If each balloon is filled with 9 cubic feet of helium, how much helium will be needed to fill the balloons?

5

San Francisco is hosting the World Triathlon, a race consisting of swimming, biking, and running. The athletes will swim for 2,016 meters and bike for 78,100 meters. If the total distance of the triathlon is 102,000 meters, how many meters is the running portion of the race?

6

Gavin has two pet turtles, a red-eared slider and a map turtle. His red-eared slider weighs 2,680 grams and his map turtle weighs 670 grams. How many times bigger is the red-eared slider than the map turtle?

7

A nature center has a stocked pond with an automatic fish feeder. An employee fills the fish feeder with 64 pounds of fish food at the beginning of the week. The feeder releases 3 pounds of fish food each day. At the end of the week, how much feed is remaining in the feeder?

8

Karly is mixing ginger ale and cranberry juice to make a punch for her middle school's Back to School Dance. She needs 84 more ounces of cranberry juice than ginger ale. If the recipe calls for 136 ounces of ginger ale, how many ounces of cranberry juice does she need?

9

Damien buys beef jerky in bulk and then divides up the beef jerky evenly into 5 sandwich bags for his school lunches. If the package holds 365 grams of beef jerky, how many grams of beef jerky are in each of the sandwich bags?

10

Carter has a backyard garden with a rectangular section to grow vegetables and a triangular section to grow herbs. The garden has a total area of 308 square feet. If the herb garden has an area of 46 square feet, how many square feet is the vegetable garden?

11

Explore More is an outdoor adventure company that offers beginner and intermediate canoeing trips down the Rio Grande River. They advertise a trip for beginners that is 8,046 meters long. If the beginner trip is 6,012 meters shorter than the intermediate trip, how many meters long is the intermediate trip?

12

Angelina is making pork tamales to sell by the dozen at a local market. She cooks 108 ounces of filling for the tamales and uses 6 ounces of filling for each dozen. How many dozens of tamales can Angelina make to bring to the market?

13

Ivory created a paper chain of her school colors, blue, green, and white, as a decoration for a pep rally. The blue section measured 253 centimeters long, the green section measured 174 centimeters long, and the white section measured 26 centimeters less than the blue section. What is the total length of the paper chain?

14

Mara and Lori are playing a round of golf. Mara hit her golf ball three times as far as Lori hit her golf ball. If Mara's golf ball traveled 492 feet, how far did Lori's golf ball travel?

15

Tyron owns a pecan tree farm. Last year he harvested 6,680 pounds of pecans. This year he harvested 972 fewer pounds of pecans than last year. How many pounds of pecans did Tyron harvest this year?

16

Sung bought a pinata for his daughter's birthday party that holds 314 pieces of candy. Sung had a bag of candy at home with 91 pieces of candy that he put into the pinata. How many more pieces of candy does Sung need to buy in order to fill the pinata?

17

At an indoor rock-climbing wall, the black route is four times as long as the pink route. If the pink route is 28 feet long, how long is the black route?

18

Sugar Sticks is a powdered candy that is sold in large straws. A package of 14 Sugar Sticks advertises that there are a total of 196 grams of powdered sugar candy in the package. If each straw contains the same amount of powdered sugar, how many grams of candy are in each straw?

1

Roderick buys a package of chicken to use throughout the week. On Monday, he uses 1.45 pounds to make chicken salad for lunch. On Thursday, he grills 3.6 pounds of chicken for dinner. If Roderick determines he has 1.35 pounds of chicken remaining to cook, how many pounds of chicken did he buy at the beginning of the week?

2

A king-sized chocolate bar has a mass of 2.6 ounces. A regular-sized chocolate bar has a mass of 1.55 ounces. How many more ounces is the king-sized chocolate bar than the regular-sized chocolate bar?

3

Esmeralda is a barista at Mug Haven. She opens a 27.6-pound bag of coffee beans at the beginning of the day. At closing time, she determines there are 16.8 pounds of coffee beans remaining in the bag. How many pounds of coffee beans were used throughout the day?

4

A car dealership orders 24 balloons for their grand opening celebration. If each balloon is filled with 0.7 cubic feet of helium, how much helium will be needed to fill the balloons?

5

The San Francisco Bay Area is hosting a triathlon, a race consisting of swimming, biking, and running. The athletes will swim for 0.4 kilometers and bike for 9.8 kilometers. If the total distance of the triathlon is 12.6 kilometers, how many kilometers is the running portion of the race?

6

Gavin has two pet turtles, a red-eared slider and a map turtle. His red-eared slider weighs 5.4 pounds and his map turtle weighs 1.8 pounds. How many times bigger is the red-eared slider than the map turtle?

7 A nature center has a stocked pond with an automatic fish feeder. The fish feeder has 70.5 pounds of fish food and releases food into the pond twice a day. If the feeder releases 2.6 pounds of food in the morning and 1.2 pounds of food in the evening, how many pounds of food are remaining in the feeder at the end of the day?

8 Karly is mixing ginger ale and cranberry juice to make a punch for her middle school's Back to School Dance. She needs 65.35 more ounces of cranberry juice than ginger ale. If the recipe calls for 112.55 ounces of ginger ale, how many ounces of cranberry juice does she need?

9 Damien buys beef jerky in bulk and then divides up the beef jerky evenly into 5 sandwich bags for his school lunches. If the package holds 130.25 grams of beef jerky, how many grams of beef jerky are in each of the sandwich bags?

10

Carter has a backyard garden with a rectangular section to grow vegetables and a triangular section to grow herbs. The garden has a total area of 78.12 square meters. If the herb garden has an area of 16.64 square meters, how many square meters is the vegetable garden?

11

Explore More is an outdoor adventure company that offers beginner and intermediate canoeing trips down the Rio Grande River. They advertise a trip for beginners that is 33.14 miles long. If the beginner trip is 52.7 miles shorter than the intermediate trip, how long is the intermediate trip?

12

Angelina is making pork tamales to sell by the dozen at a local market. She cooks 61.6 ounces of filling for the tamales and uses 5.6 ounces of filling for each dozen. How many dozens of tamales can Angelina make to bring to the market?

13

Ivory created a paper chain of her school colors, blue, green, and white, as a decoration for a pep rally. The blue section measured 2.29 meters long, the green section measured 1.63 meters long, and the white section measured 2.07 meters long. What is the total length of the paper chain?

14

Mara and Lori are playing a round of golf. Mara hit her golf ball three times as far as Lori hit her golf ball. If Mara's golf ball traveled 120.6 meters, how far did Lori's golf ball travel?

15

Tyron owns a pecan tree farm. Last year he harvested 3,428.74 pounds of pecans. This year he harvested 514.3 fewer pounds of pecans than last year. How many pounds of pecans did Tyron harvest this year?

16

Sung bought a pinata for his daughter's birthday party that holds 52.93 ounces of candy. Sung had 16.02 ounces of candy at home that he put into the pinata. How many more ounces of candy does Sung need to buy in order to fill the pinata?

17

At an indoor rock-climbing wall, the black route is four times as long as the pink route. If the pink route is 9.75 meters long, how long is the black route?

18

Sugar Sticks is a powdered candy that is sold in large straws. A package of 8 Sugar Sticks advertises there are a total of 3.2 ounces of powdered sugar candy in the package. If each straw contains the same amount of powdered sugar, how many ounces of candy are in each straw?

1 Roderick buys a package of chicken to use throughout the week. On Monday, he uses $1\frac{1}{2}$ pounds to make chicken salad for lunch. On Thursday, he grills $3\frac{1}{4}$ pounds of chicken for dinner. If Roderick determines he has 2 pounds of chicken remaining to cook, many pounds of chicken did he buy at the beginning of the week?

2 A king-sized chocolate bar has a mass of $2\frac{1}{2}$ ounces. A regular-sized chocolate bar has a mass of $1\frac{1}{4}$ ounces. How many more ounces is the king-sized chocolate bar than the regular-sized chocolate bar?

3 Esmeralda is a barista at Mug Haven. At the beginning of the day, there are 8 bags of whole coffee beans. Throughout the day, Esmeralda grinds the coffee beans to make drinks for customers. At closing time, she determines there are $5\frac{1}{3}$ bags of coffee beans remaining. How many bags of coffee beans did she use throughout the day?

4

A car dealership orders 24 balloons for their grand opening celebration. If each balloon is filled with $\frac{2}{3}$ cubic feet of helium, how much helium will be needed to fill the balloons?

5

The San Francisco Bay Area is hosting a triathlon, a race consisting of swimming, biking, and running. The athletes will swim for $\frac{3}{4}$ miles and bike for $15\frac{1}{2}$ miles. If the total distance of the triathlon is $20\frac{1}{2}$ miles, how many miles is the running portion of the race?

6

Gavin has two pet turtles, a red-eared slider and a map turtle. His red-eared slider weighs 6 pounds and his map turtle weighs $\frac{3}{2}$ pounds. How many times bigger is the red-eared slider than the map turtle?

7 A nature center has a stocked pond with an automatic fish feeder. The fish feeder has $33\frac{1}{4}$ pounds of fish food and releases $4\frac{1}{8}$ pounds of food into the pond throughout the day. How many pounds of food are remaining in the fish feeder at the end of the day?

8 Karly is mixing ginger ale and cranberry juice to make a punch for her middle school's Back to School Dance. She needs $11\frac{1}{5}$ more cups of cranberry juice than ginger ale. If the recipe calls for $15\frac{3}{5}$ cups of ginger ale, how many cups of cranberry juice does she need?

9 Damien buys a 5-pound container of beef jerky. He wants to divide the beef jerky into sandwich bags that each contain $\frac{1}{3}$ pound of beef jerky for his school lunches. How many sandwich bags can he fill?

10 Carter has a backyard garden with a rectangular section to grow vegetables and a triangular section to grow herbs. The garden has a total area of $96\frac{7}{8}$ square feet. If the herb garden has an area of $22\frac{1}{4}$ square feet, how many square feet is the vegetable garden?

11 Explore More is an outdoor adventure company that offers beginner and intermediate canoeing trips down the Rio Grande River. They advertise a trip for beginners that is $33\frac{1}{2}$ miles long. If the beginner trip is $51\frac{1}{4}$ miles shorter than the intermediate trip, how long is the intermediate trip?

12 Angelina is making pork tamales to sell by the dozen at a local market. She cooks $13\frac{1}{2}$ cups of filling for the tamales and uses $\frac{3}{4}$ cup of filling for each dozen. How many dozens of tamales can Angelina make to bring to the market?

13 Ivory created a paper chain of her school colors, blue, green, and white, as a decoration for a pep rally. The blue section measured $5\frac{1}{2}$ feet long, the green section measured $4\frac{1}{4}$ feet long, and the white section measured $3\frac{3}{4}$ feet long. What is the total length of the paper chain?

14 Mara and Lori are playing a round of golf. Lori hit her golf ball $\frac{1}{3}$ as far as Mara hit her golf ball. If Mara's golf ball traveled 393 feet, how far did Lori's golf ball travel?

15 Tyron owns a pecan tree farm. Last year he harvested enough pecans to fill $9\frac{5}{6}$ barrels. During the harvest this year, he filled $2\frac{2}{3}$ fewer barrels than last year. How many barrels of pecans did Tyron fill this year?

16

Sung bought a pinata for his daughter's birthday party that holds $5\frac{1}{5}$ pounds of candy. Sung had $\frac{4}{5}$ pounds of candy at home that he put into the pinata. How many more pounds of candy does Sung need to buy in order to fill the pinata?

17

At an indoor rock-climbing wall, the black route is four times as long as the pink route. If the pink route is $8\frac{1}{6}$ meters long, how long is the black route?

18

Sugar Sticks is a powdered candy that is sold in large straws. A package of 9 Sugar Sticks advertises there are a total of $2\frac{1}{4}$ ounces of powdered sugar candy in the package. If each straw contains the same amount of powdered sugar, how many ounces of candy are in each straw?