Eureka Math

3rd Grade
Module 7
Lesson 3

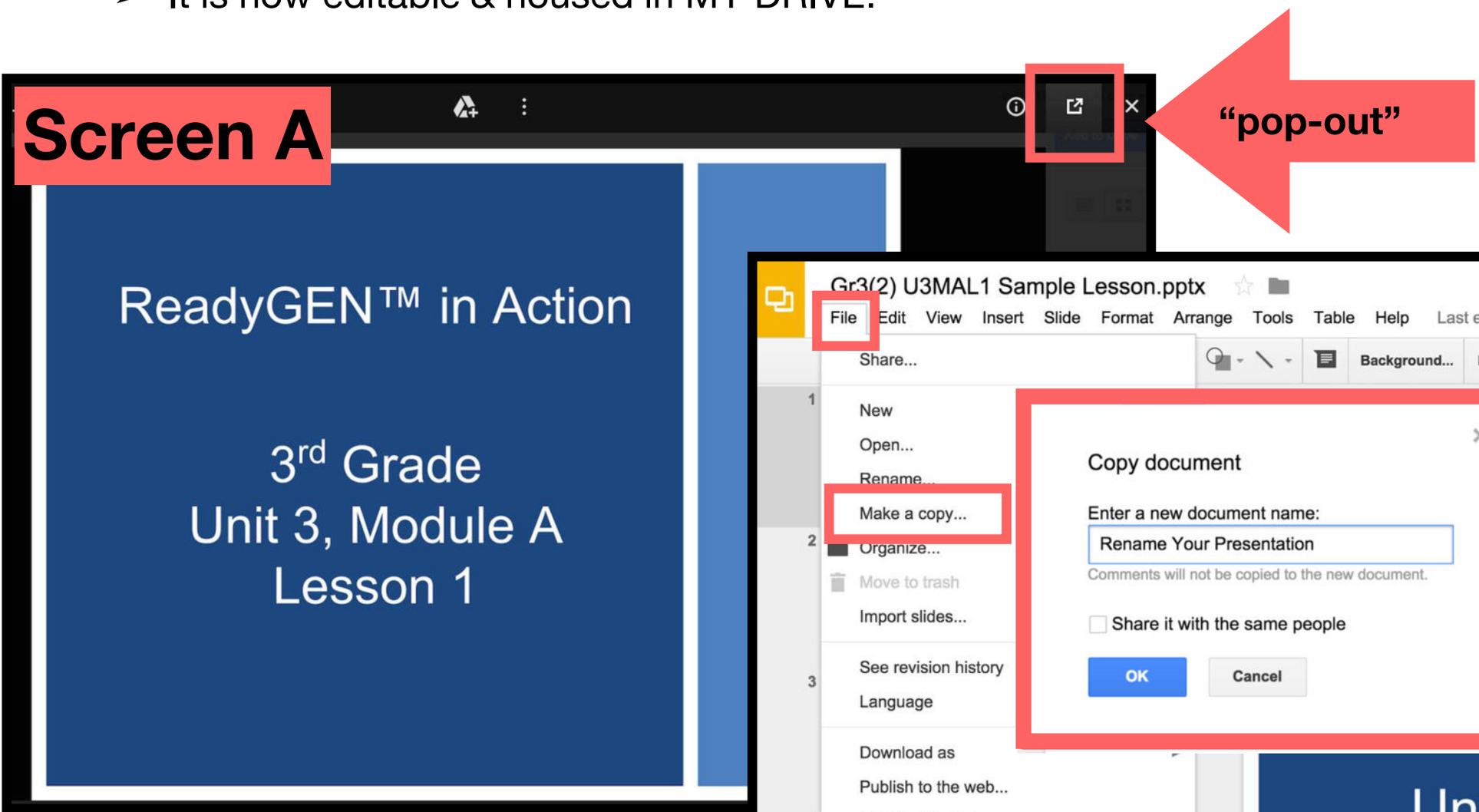
At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this project!

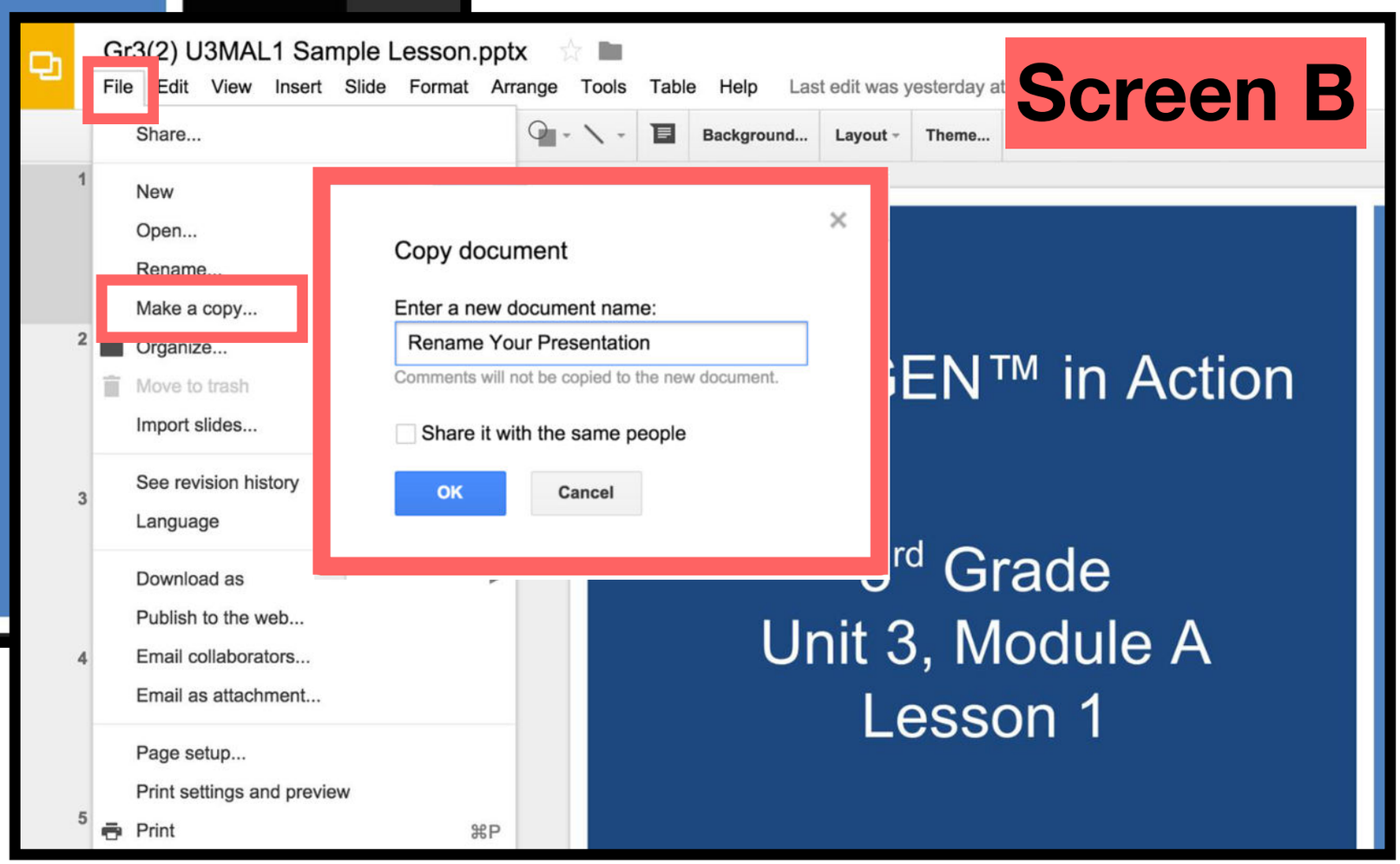
Directions for customizing presentations are available on the next slide.

Customize this Slideshow

Reflecting your Teaching Style and Learning Needs of Your Students

- When the Google Slides presentation is opened, it will look like Screen A.
- Click on the “pop-out” button in the upper right hand corner to change the view.
- The view now looks like Screen B.
- Within Google Slides (not Chrome), choose FILE.
- Choose MAKE A COPY and rename your presentation.
- Google Slides will open your renamed presentation.
- It is now editable & housed in MY DRIVE.





Icons

Read, Draw, Write

Learning Target

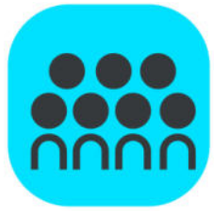
Personal White Board

Problem Set

Manipulatives Needed

Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

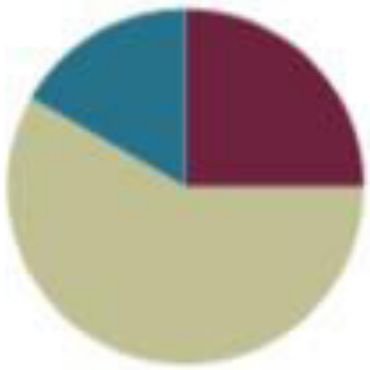
Small Group Time

Lesson 3

Objective: Share and critique peer solution strategies to varied word problems.

Suggested Lesson Structure

Fluency Practice	(15 minutes)
Concept Development	(35 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**

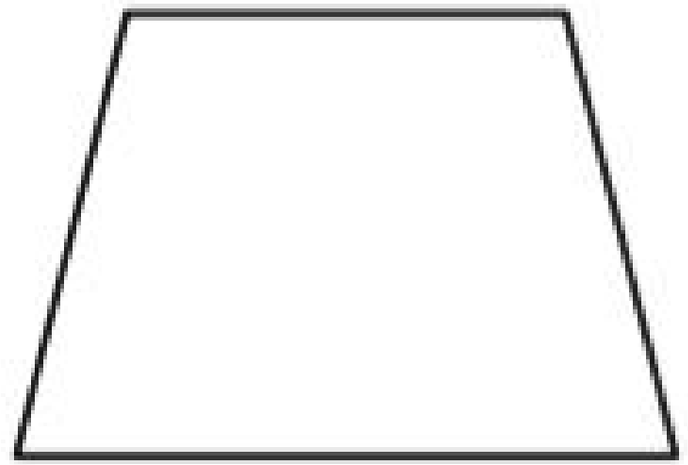


I can share and critique solutions to word problems.

Fluency Practice

Name the Shape (3 min.)

How many sides does this shape have?



What's the name for all four-sided figures?

Quadrilateral.

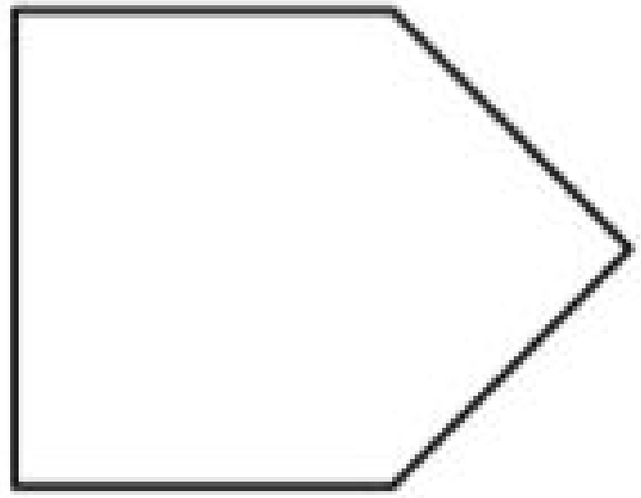
Fluency Practice

Name the Shape (3 min.)

How many sides does this shape have?

What's the name for all five-sided figures?

Pentagon



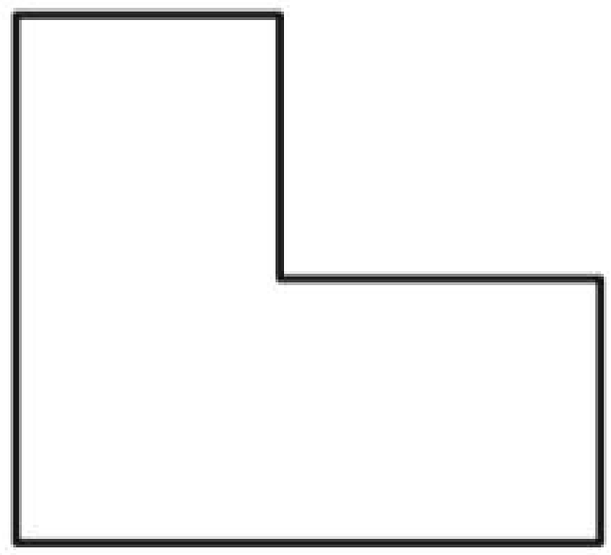
Fluency Practice

Name the Shape (3 min.)

How many sides does this shape have?

What's the name for all six-sided figures?

Hexagon



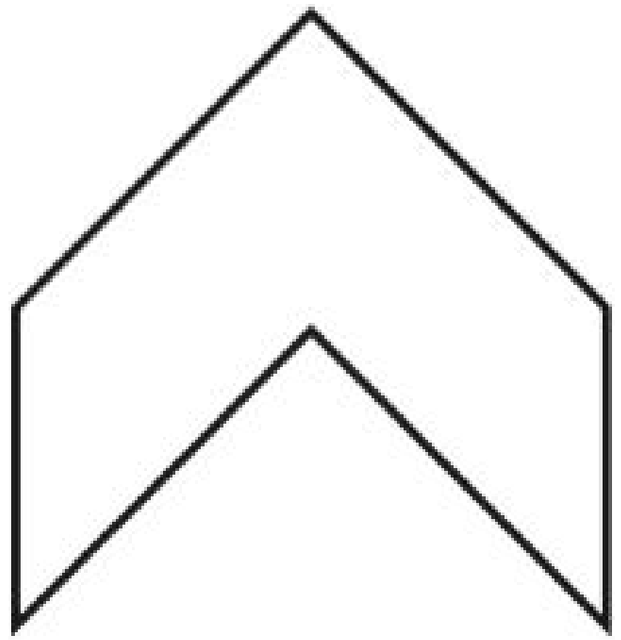
Fluency Practice

Name the Shape (3 min.)

How many sides does this shape have?

What's the name for all six-sided figures?

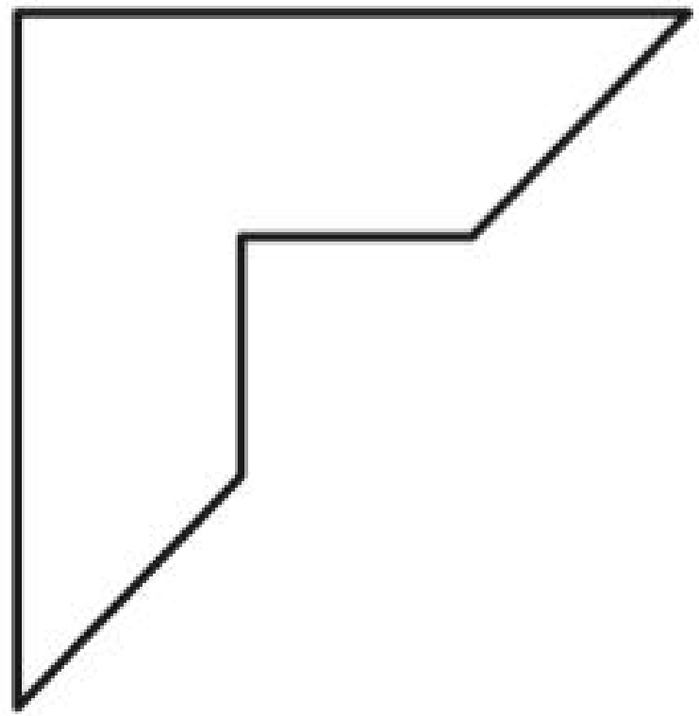
Hexagon



Fluency Practice

Name the Shape (3 min.)

How many sides does this shape have?



What's the name for all six-sided figures?

Hexagon

Fluency Practice

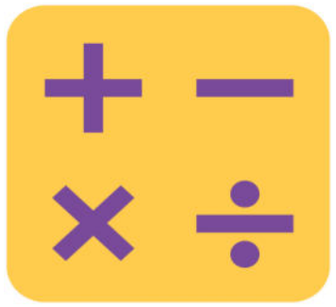
Multiply by 4 (8 min.)

5 x 4 = ____

Let’s skip-count up by fours to find the answer.

4, 8, 12, 16, 20.

5 × 4 = 20



Fluency Practice

Multiply by 4 (8 min.)

3 × 4 = ?

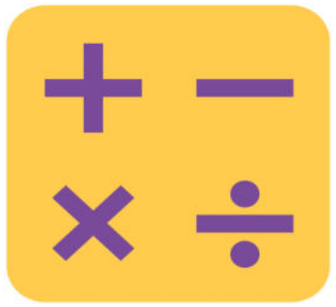
Let’s skip-count up by fours to find the answer.

4, 8, 12.

3 × 4 = 12

Let’s see how we can skip-count down to find the answer, too. Start at 20 with 5 fingers, 1 for each four.

20, 16, 12.



Fluency Practice

Multiply by 4 (8 min.)

4 × 4 = ?

Let’s skip-count up by fours to find the answer.

4, 8, 12, 16.

4 × 4 = 16

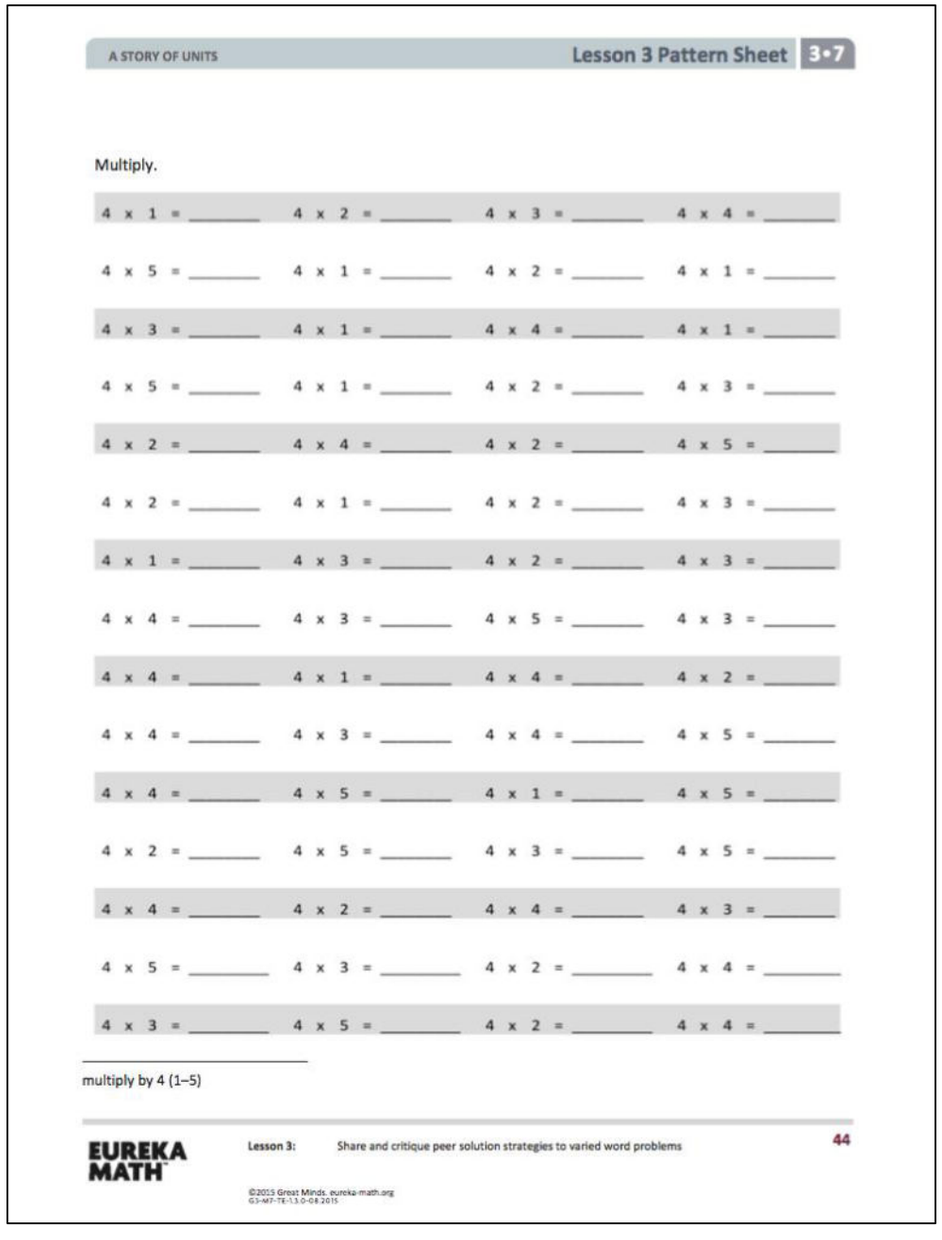
Let’s see how we can skip-count down to find the answer, too. Start at 20 with 5 fingers, 1 for each four.

20, 16.

Fluency Practice

Multiply by 4 (8 minutes)

Let’s practice multiplying by 4. Be sure to work left to right across the page.



A STORY OF UNITS — Lesson 3 Pattern Sheet 3•7

Multiply.

4 x 1 = _____	4 x 2 = _____	4 x 3 = _____	4 x 4 = _____
4 x 5 = _____	4 x 1 = _____	4 x 2 = _____	4 x 1 = _____
4 x 3 = _____	4 x 1 = _____	4 x 4 = _____	4 x 1 = _____
4 x 5 = _____	4 x 1 = _____	4 x 2 = _____	4 x 3 = _____
4 x 2 = _____	4 x 4 = _____	4 x 2 = _____	4 x 5 = _____
4 x 2 = _____	4 x 1 = _____	4 x 2 = _____	4 x 3 = _____
4 x 1 = _____	4 x 3 = _____	4 x 2 = _____	4 x 3 = _____
4 x 4 = _____	4 x 3 = _____	4 x 5 = _____	4 x 3 = _____
4 x 4 = _____	4 x 1 = _____	4 x 4 = _____	4 x 2 = _____
4 x 4 = _____	4 x 3 = _____	4 x 4 = _____	4 x 5 = _____
4 x 4 = _____	4 x 5 = _____	4 x 1 = _____	4 x 5 = _____
4 x 2 = _____	4 x 5 = _____	4 x 3 = _____	4 x 5 = _____
4 x 4 = _____	4 x 2 = _____	4 x 4 = _____	4 x 3 = _____
4 x 5 = _____	4 x 3 = _____	4 x 2 = _____	4 x 4 = _____
4 x 3 = _____	4 x 5 = _____	4 x 2 = _____	4 x 4 = _____

multiply by 4 (1–5)

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Fluency Practice

Equivalent Counting with Units of 3 (4 minutes)

Count to 10 as I write. Please do not count faster than I can write.

(Write as students count.)

1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

Count to 10 threes. (Write as students count.)

1 three, 2 threes, 3 threes, 4 threes, 5 threes, 6 threes, 7 threes, 8 threes, 9 threes, 10 threes.

Fluency Practice

Equivalent Counting with Units of 3 (4 minutes)

1	2	3	4	5	6	7	8	9	10
1 three	2 threes	3 threes	4 threes	5 threes	6 threes	7 threes	8 threes	9 threes	10 threes
3	6	9	12	15	18	21	24	27	30
1 three	6	3 threes	12	5 threes	18	7 threes	24	9 threes	30
3	2 threes	9	4 threes	15	6 threes	21	8 threes	27	10 threes

Concept Development

Use the Read-Draw-Write process to solve this problem. Remember to take a moment to visualize what's happening in the problem after you read.

Mrs. Mashburn buys 6 boxes of pencils. Nine pencils come in each box. She gives each of the 24 students in her class 2 pencils. How many pencils does she have left?

Concept Development

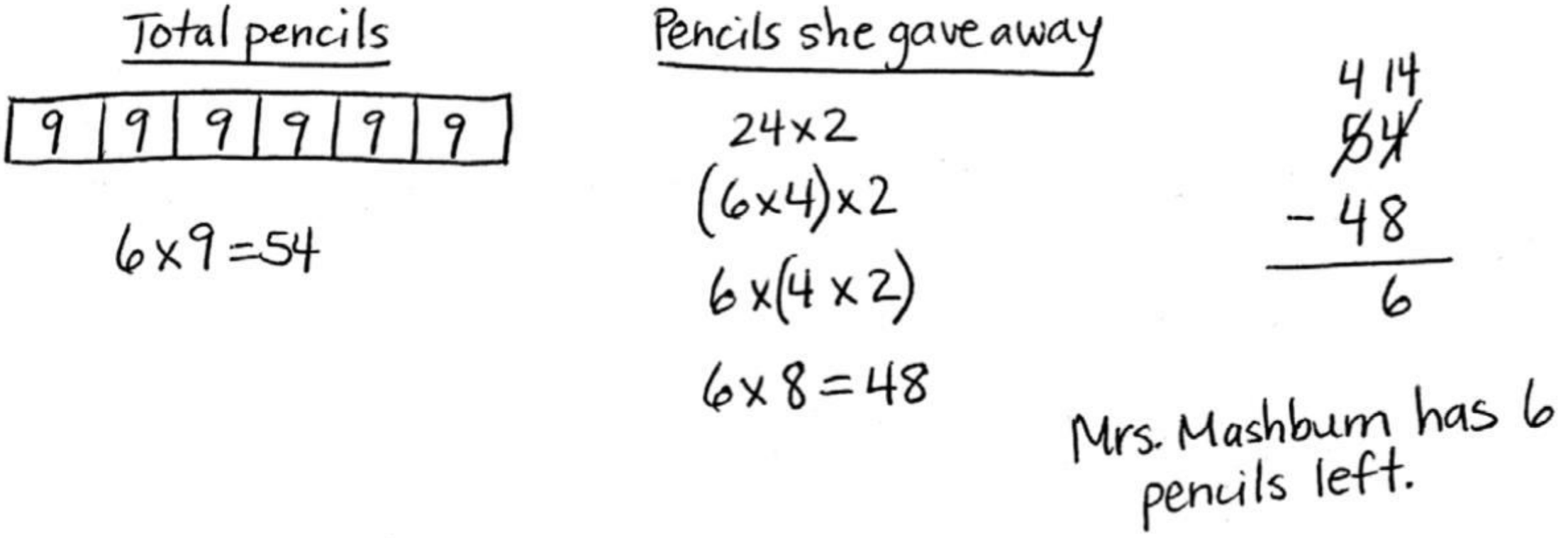
Compare your work with a partner's.

How many pencils does Mrs. Mashburn have left?

Concept Development

Let's look at and discuss some possible solutions for this problem. What did Student A do to solve this problem?

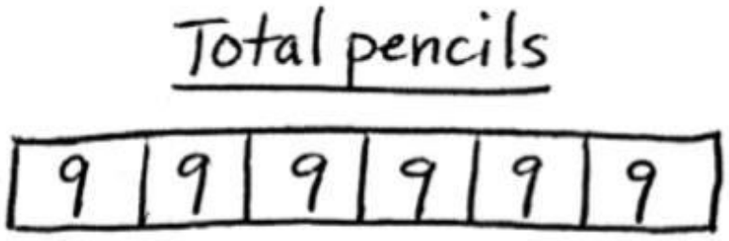
Student A



Concept Development

Other than getting the right answer, what did Student A do well?

Student A

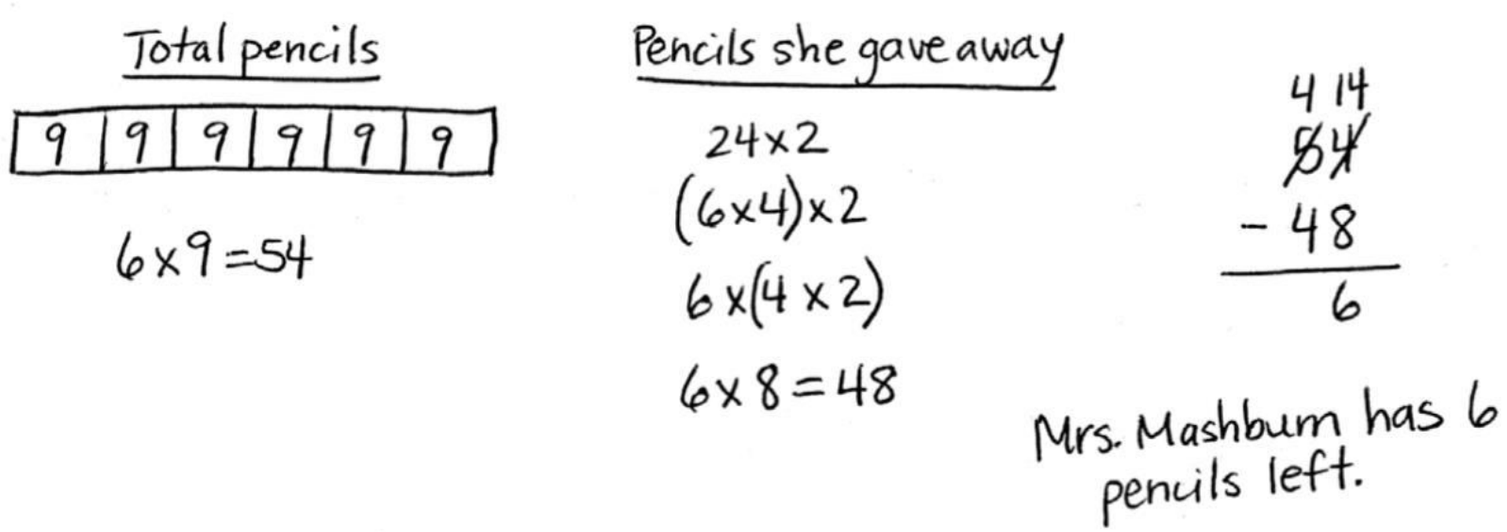


Concept Development

Facilitate a discussion in which students analyze this work. Choose any combination of the following questions to help guide the conversation:

- Was the drawing helpful? What makes the drawing helpful or unhelpful?
- Did Student A represent all the important information in his drawing? Why or why not?

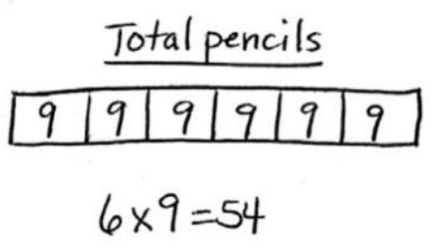
Student A



Concept Development

- Was this drawing the best one to use? Why or why not?
- Can you retell the story using only the drawing and labels? Explain.
- How did he organize the information?
- Was his method of solving the most efficient way? Why or why not?
- Would you have chosen to solve the problem this way? Why or why not?

Student A



Concept Development

What suggestion would you make to Student A to improve his work?

Student A

Total pencils

9	9	9	9	9	9

$6 \times 9 = 54$

Pencils she gave away

24×2

$(6 \times 4) \times 2$

$6 \times (4 \times 2)$

$6 \times 8 = 48$

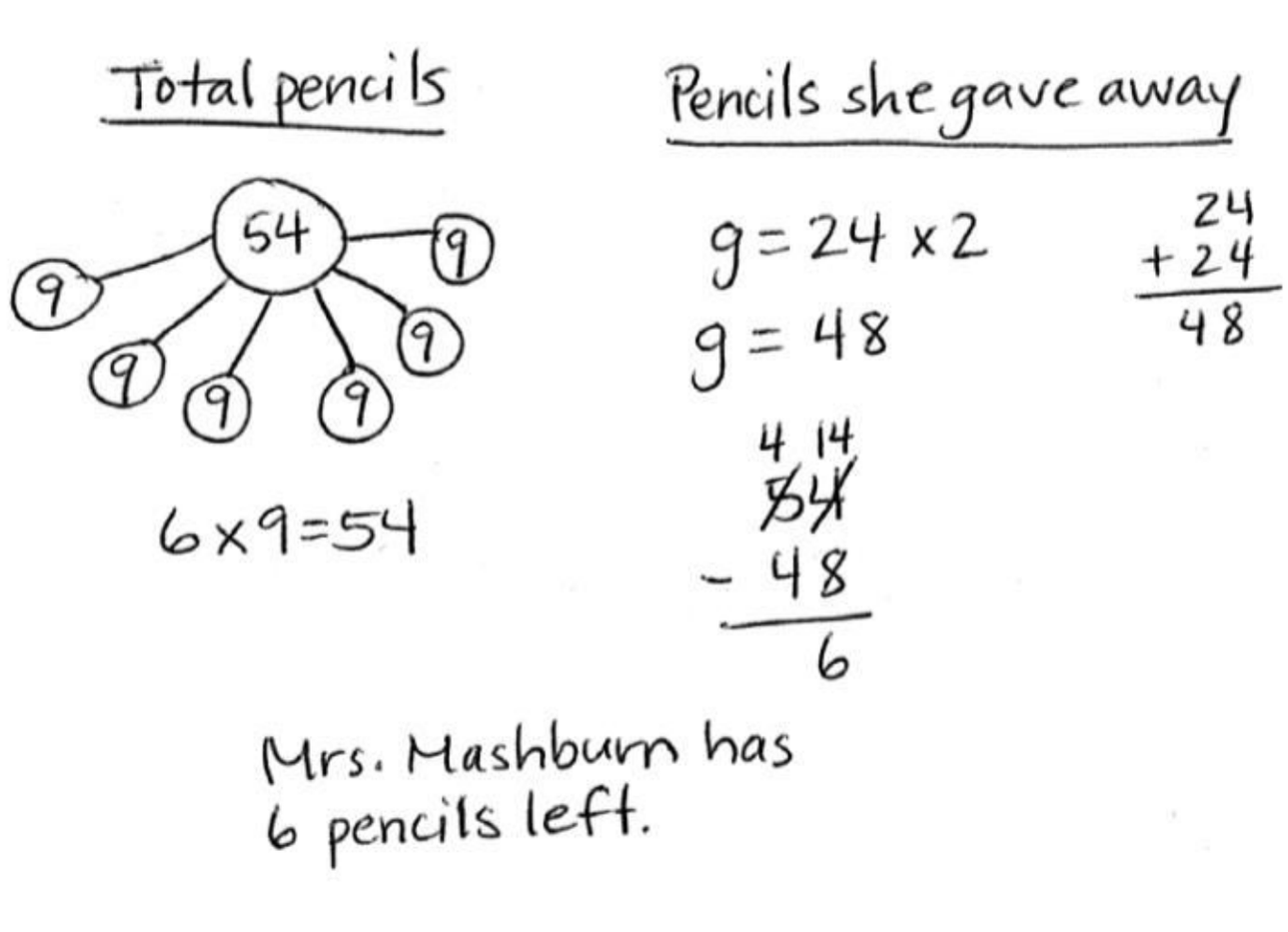
$$\begin{array}{r} 4\ 14 \\ \cancel{5}\cancel{4} \\ -\ 48 \\ \hline 6 \end{array}$$

Mrs. Mashburn has 6 pencils left.

Concept Development

Let's look at and discuss some possible solutions for this problem. What did Student B do to solve this problem?

Student B

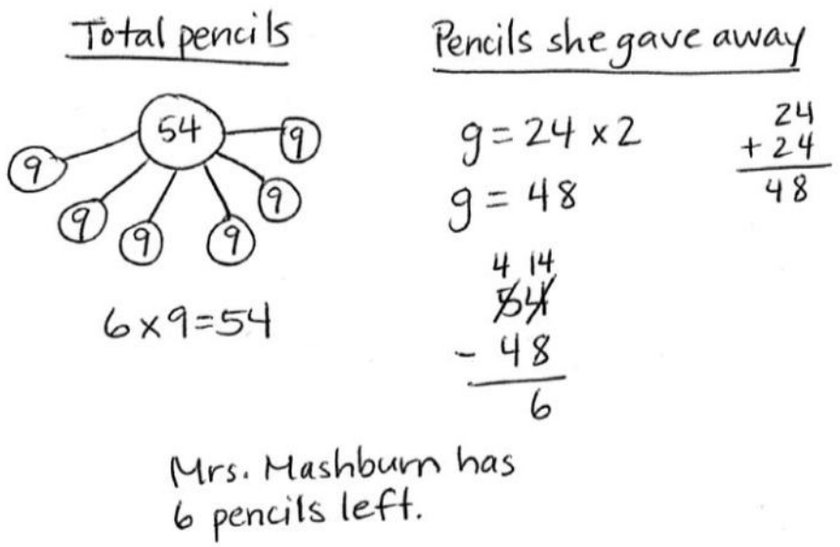


Concept Development

Facilitate a discussion in which students analyze this work. Choose any combination of the following questions to help guide the conversation:

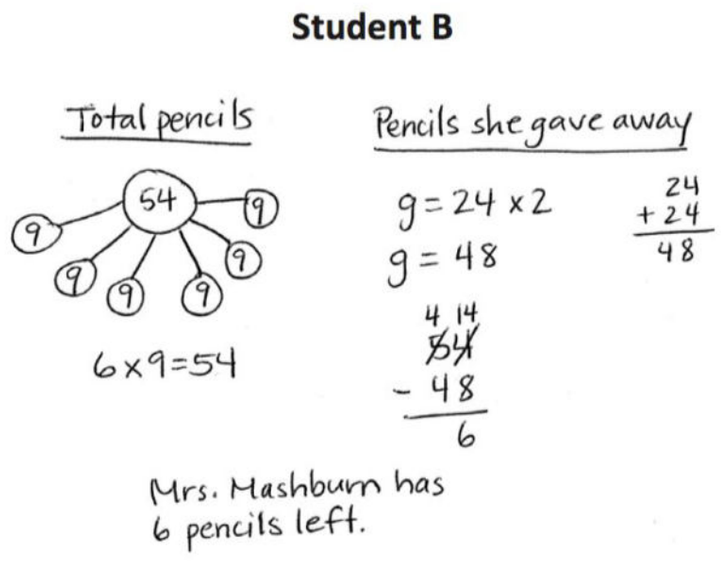
- Was the drawing helpful? What makes the drawing helpful or unhelpful?
- Did Student A represent all the important information in his drawing? Why or why not?

Student B



Concept Development

- Was this drawing the best one to use? Why or why not?
- Can you retell the story using only the drawing and labels? Explain.
- How did he organize the information?
- Was his method of solving the most efficient way? Why or why not?
- Would you have chosen to solve the problem this way? Why or why not?

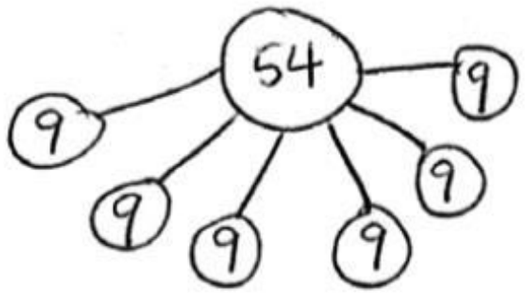


Concept Development

What suggestion would you make to Student B to improve her work?

Student B

Total pencils



$6 \times 9 = 54$

Pencils she gave away

$g = 24 \times 2$

$g = 48$

$$\begin{array}{r} 24 \\ +\,24 \\ \hline 48 \end{array}$$

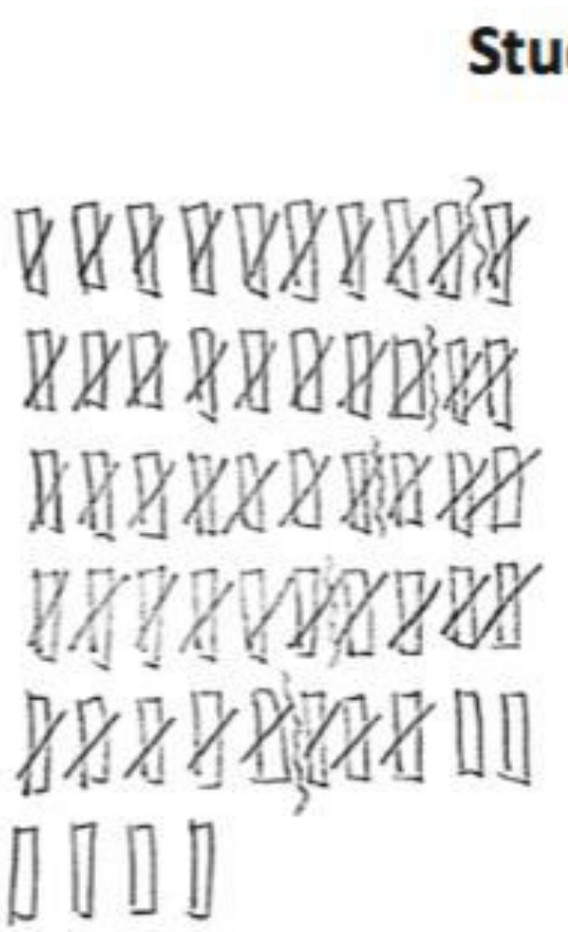
$$\begin{array}{r} {\scriptstyle 4}\,{\scriptstyle 14} \\ \cancel{54} \\ -\,48 \\ \hline 6 \end{array}$$

Mrs. Mashburn has 6 pencils left.

Concept Development

Let’s look at and discuss some possible solutions for this problem. What did Student C do to solve this problem?

Student C



$$\begin{array}{r} 4\ 14 \\ \not{5}\ \not{4} \\ -48 \\ \hline 06 \end{array}$$

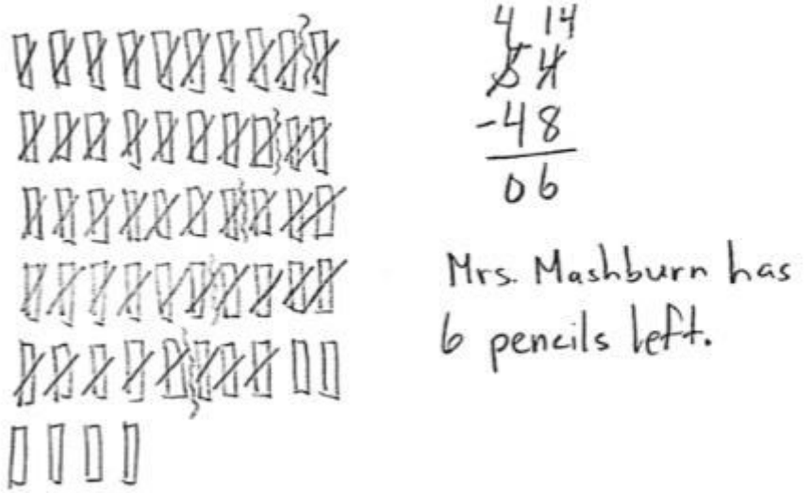
Mrs. Mashburn has 6 pencils left.

Concept Development

Facilitate a discussion in which students analyze this work. Choose any combination of the following questions to help guide the conversation:

- Was the drawing helpful? What makes the drawing helpful or unhelpful?
- Did Student C represent all the important information in her drawing? Why or why not?

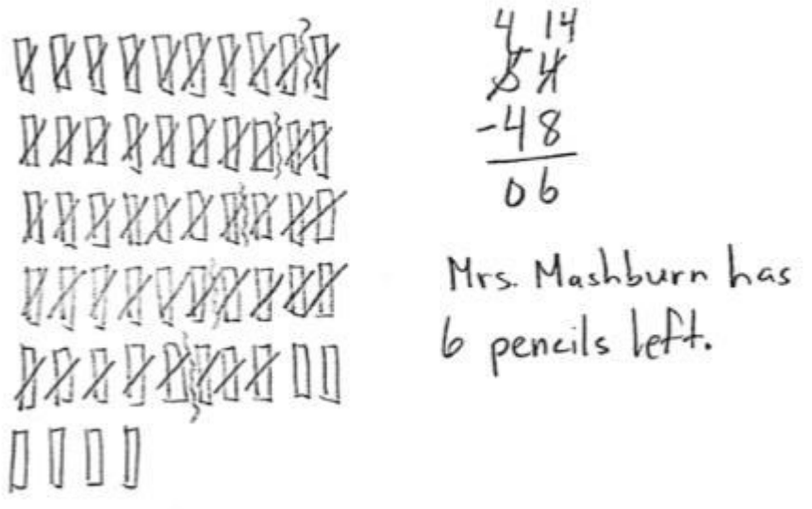
Student C



Concept Development

- Was this drawing the best one to use? Why or why not?
- Can you retell the story using only the drawing and labels? Explain.
- How did she organize the information?
- Was her method of solving the most efficient way? Why or why not?
- Would you have chosen to solve the problem this way? Why or why not?

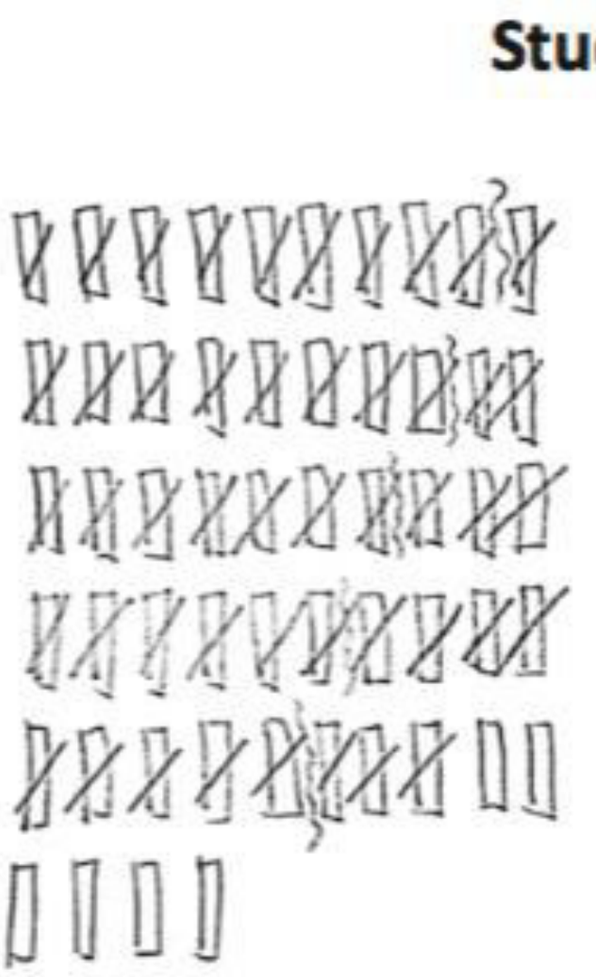
Student C



Concept Development

What suggestion would you make to Student C to improve her work?

Student C



$$\begin{array}{r} 4\ 14 \\ \not{5}\ \not{4} \\ -48 \\ \hline 06 \end{array}$$

Mrs. Mashburn has 6 pencils left.

Concept Development

How are the three ways of solving similar?
How are they different?

Student A

Total pencils

9	9	9	9	9	9

6 x 9 = 54

Pencils she gave away

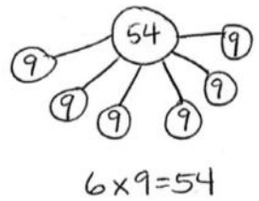
24 x 2
(6 x 4) x 2
6 x (4 x 2)
6 x 8 = 48

4 14
~~5 4~~
- 48
6

Mrs. Mashburn has 6 pencils left.

Student B

Total pencils



6 x 9 = 54

Pencils she gave away

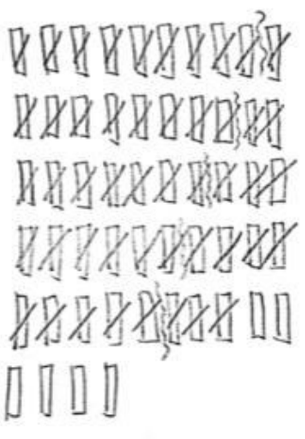
g = 24 x 2
g = 48

24
+ 24
48

4 14
~~5 4~~
- 48
6

Mrs. Mashburn has 6 pencils left.

Student C



4 14
~~5 4~~
-48
06

Mrs. Mashburn has 6 pencils left.

Concept Development

Which solution would you say is **most** efficient? Why?

Student A

Total pencils

9	9	9	9	9	9

6 x 9 = 54

Pencils she gave away

24 x 2

(6 x 4) x 2

6 x (4 x 2)

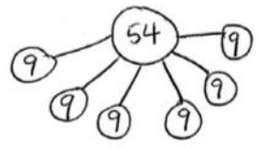
6 x 8 = 48

4 14
~~5 4~~
- 48
6

Mrs. Mashburn has 6 pencils left.

Student B

Total pencils



6 x 9 = 54

Pencils she gave away

g = 24 x 2

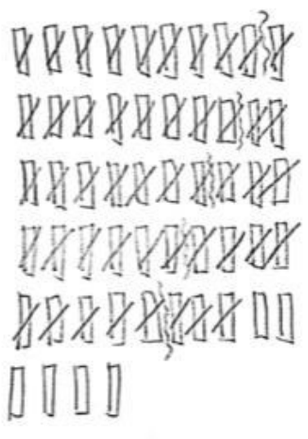
g = 48

24
+ 24
48

4 14
~~5 4~~
- 48
6

Mrs. Mashburn has 6 pencils left.

Student C



4 14
~~5 4~~
-48
06

Mrs. Mashburn has 6 pencils left.

Concept Development

Which solution would you say is **least** efficient? Why?

Student A

Total pencils

9	9	9	9	9	9

6 x 9 = 54

Pencils she gave away

24 x 2

(6 x 4) x 2

6 x (4 x 2)

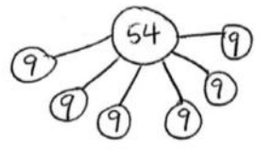
6 x 8 = 48

4 14
~~5 4~~
- 48
6

Mrs. Mashburn has 6 pencils left.

Student B

Total pencils



6 x 9 = 54

Pencils she gave away

g = 24 x 2

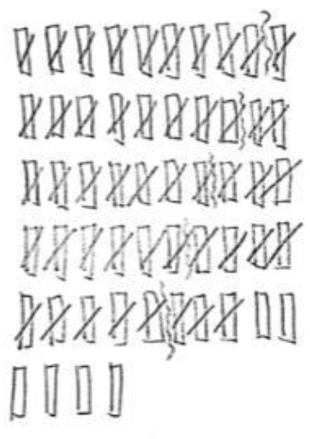
g = 48

24
+ 24
48

4 14
~~5 4~~
- 48
6

Mrs. Mashburn has 6 pencils left.

Student C



4 14
~~5 4~~
-48
06

Mrs. Mashburn has 6 pencils left.

Concept Development

Compare all three samples to your own work. Discuss the strengths of your own work, and also talk about what you might try differently.

Student A

Total pencils

9	9	9	9	9	9

6 x 9 = 54

Pencils she gave away

24 x 2

(6 x 4) x 2

6 x (4 x 2)

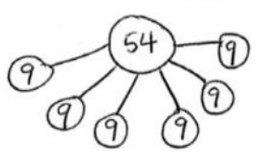
6 x 8 = 48

4 14
~~5 4~~
- 48
6

Mrs. Mashburn has 6 pencils left.

Student B

Total pencils



6 x 9 = 54

Pencils she gave away

g = 24 x 2

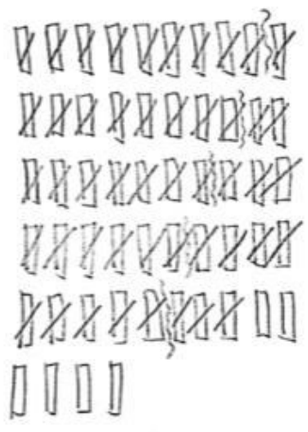
g = 48

24
+ 24
48

4 14
~~5 4~~
- 48
6

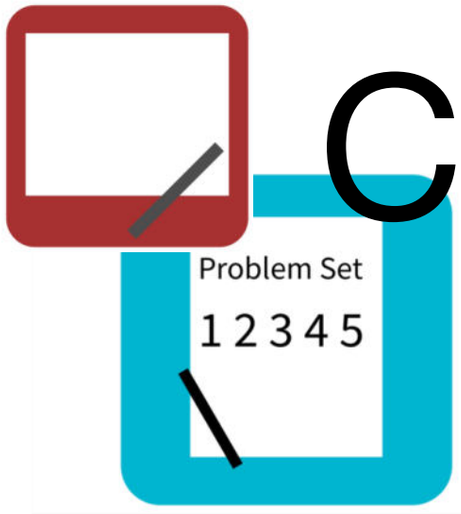
Mrs. Mashburn has 6 pencils left.

Student C



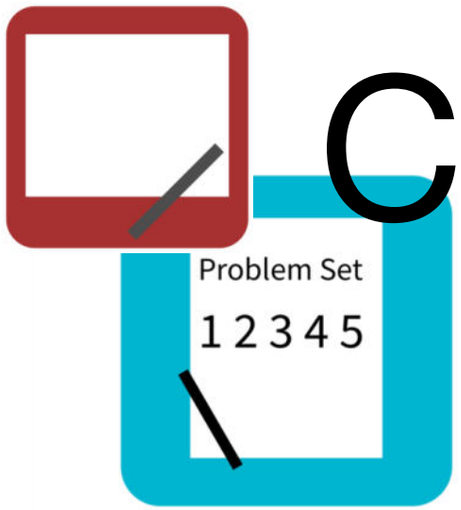
4 14
~~5 4~~
-48
06

Mrs. Mashburn has 6 pencils left.



Concept Development

Work with your partner to find two different ways to solve Problem 1 on your Problem Set. Be sure to use the RDW process when solving.

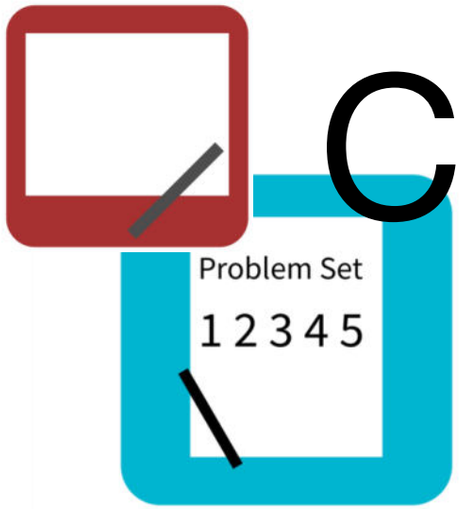


Concept Development

Study your partner's work. Try to explain how your partner solved the problem.

Compare the strategies that you used with your partner's strategies. How are they the same? How are they different?

What did your partner do well?



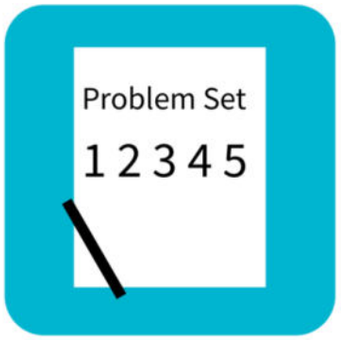
Concept Development

What suggestions do you have for your partner that might improve her work?

Why would your suggestions be an improvement?

What are the strengths of your own work?

Why do some methods work better for you than others?



Problem Set

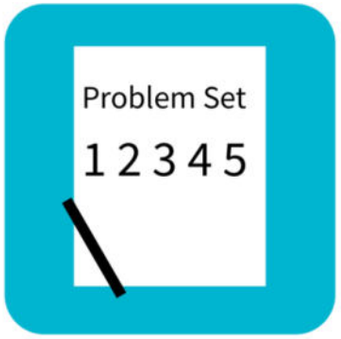
Name _____ Date _____

Use the RDW process to solve the problems below. Use a letter to represent the unknown in each problem. When you are finished, share your solutions with a partner. Discuss and compare your strategies with your partner's strategies.

1. Monica measures 91 milliliters of water into 9 tiny beakers. She measures an equal amount of water into the first 8 beakers. She pours the remaining water into the ninth beaker. It measures 19 milliliters. How many milliliters of water are in each of the first 8 beakers?

2. Matthew and his dad put up 8 six-foot lengths of fence on Monday and 9 six-foot lengths on Tuesday. What is the total length of the fence?

3. The total weight of Laura's new pencils is 112 grams. One pencil rolls off the scale. Now the scale reads 105 grams. What is the total weight of 7 new pencils?



Problem Set

4. Mrs. Ford's math class starts at 8:15. They do 3 fluency activities that each last 4 minutes. Just when they finish all of the fluency activities, the fire alarm goes off. When they return to the room after the drill, it is 8:46. How many minutes did the fire drill last?

5. On Saturday, the baker bought a total of 150 pounds of flour in five-pound bags. By Tuesday, he had 115 pounds of flour left. How many five-pound bags of flour did the baker use?

6. Fred cut an 84-centimeter rope into 2 parts and gave his sister 1 part. Fred's part is 56 centimeters long. His sister cut her rope into 4 equal pieces. How long is 1 of his sister's pieces of rope?

Debrief

What can you draw to show Problem 2? How can you build equations from those drawings?

Invite students to share and compare their processes for solving Problem 4.

Debrief

What was your first step toward solving Problem 5? How did you figure that out? Once you finished the first step, how did you choose a strategy for solving the second step?

Debrief

How might it be helpful to your own work to analyze another person's work?

What was it like to have a friend critique your work?

Exit Ticket (3 minutes)

Name _____ Date _____

Use the RDW process to solve the problem below. Use a letter to represent the unknown.

Twenty packs of fruit snacks come in a box. Each pack weighs 6 ounces. Students eat some. There are 48 ounces of fruit snacks left in the box. How many ounces of fruit snacks did the students eat?