



Welcome to **Juicy Tasks to Nourish Students' Mathematical Reasoning**

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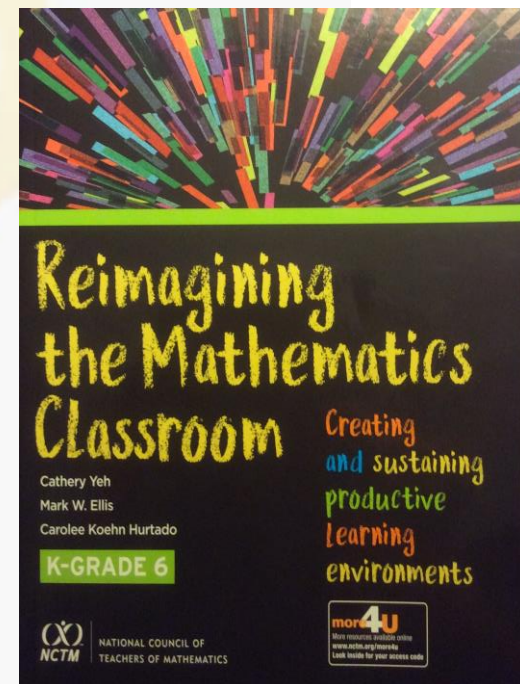
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Outcomes

Participants will:

- Engage in a “juicy” math task
- Reflect on the task selection process – what does a good task look like?
- Learn how to build capacity from existing resources, increase the “juiciness” of traditional textbook problems



Getting Ready

Solve it! Solve it another way.

Jasmin received 5 packages of Pokemon cards for her birthday. Each package had 12 Pokemon cards. She gave 15 Pokemon cards to her brother. How many Pokemon cards does Jasmin have now?

How might a second grader solve it?

Solve it! Solve it another way.

Jasmin received 5 packages of Pokemon cards for her birthday. Each package had 12 Pokemon cards. She gave 15 Pokemon cards to her brother. How many Pokemon cards does Jasmin have now?

What Mathematics Does This Child Know?

12 12 12 12 12

10 10 10 10 = 50 60

2 2 2 2 2 = 10 (45)

|||||

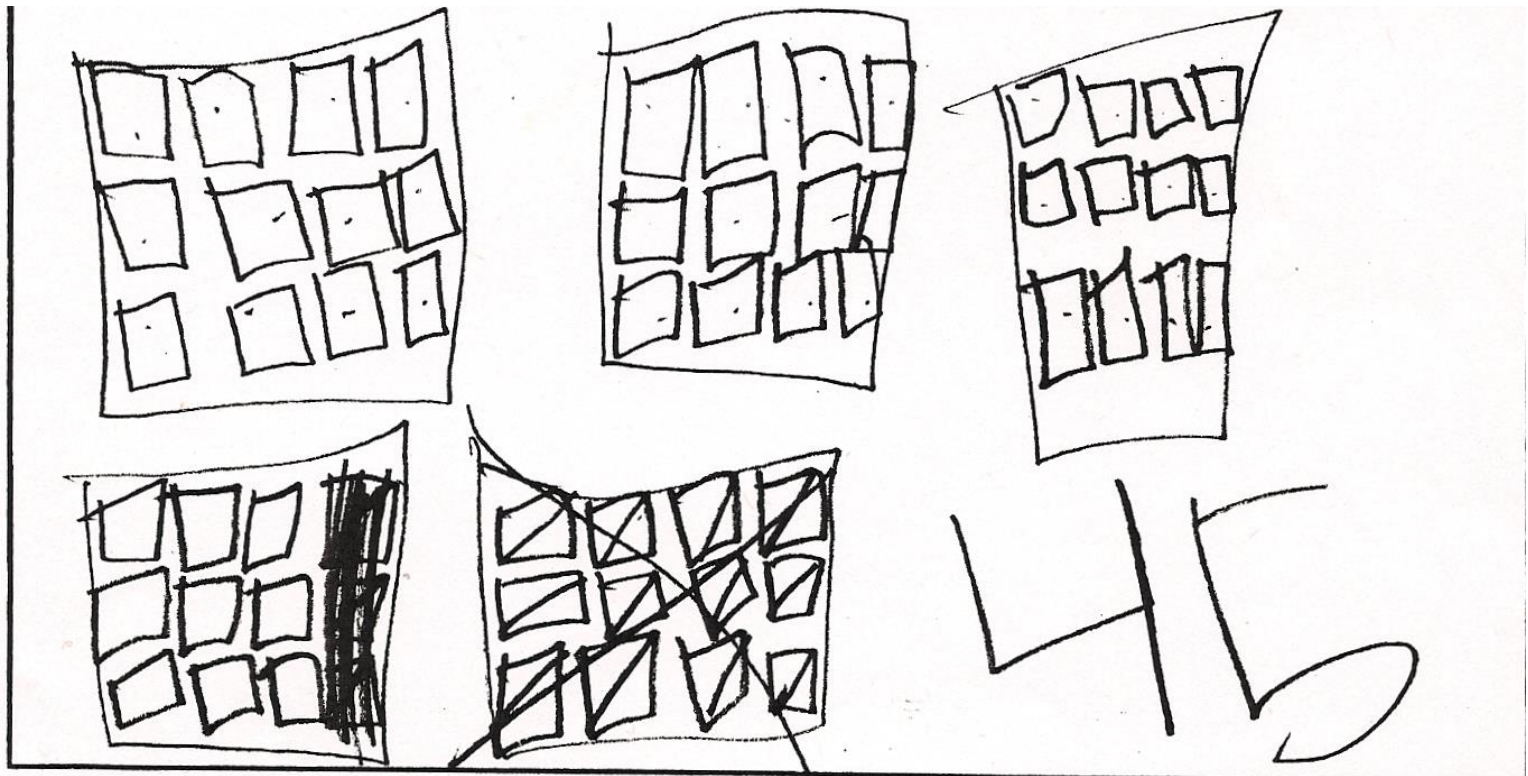


12 12 12 12
10 24 24
12 48
56 10
15
45

(45)

5 5 5 5 5 5 5 5
55 45

What Mathematics Does This Child Know?



What Mathematics Does This Child Know?

12 12 12 12 12

10/10/10/10/10=50

60

22222=10

|||||

45

What Mathematics Does This Child Know?

Handwritten mathematical work showing multiplication and addition:

Top left: $12 \frac{1}{2}$ (with a small '1' above the '2') and 12 are written above a horizontal line. Below the line is 110 . To the right of 110 is a vertical line, and below it is 12 .

Top middle: 12 and 12 are written above a horizontal line. Below the line is 24 .

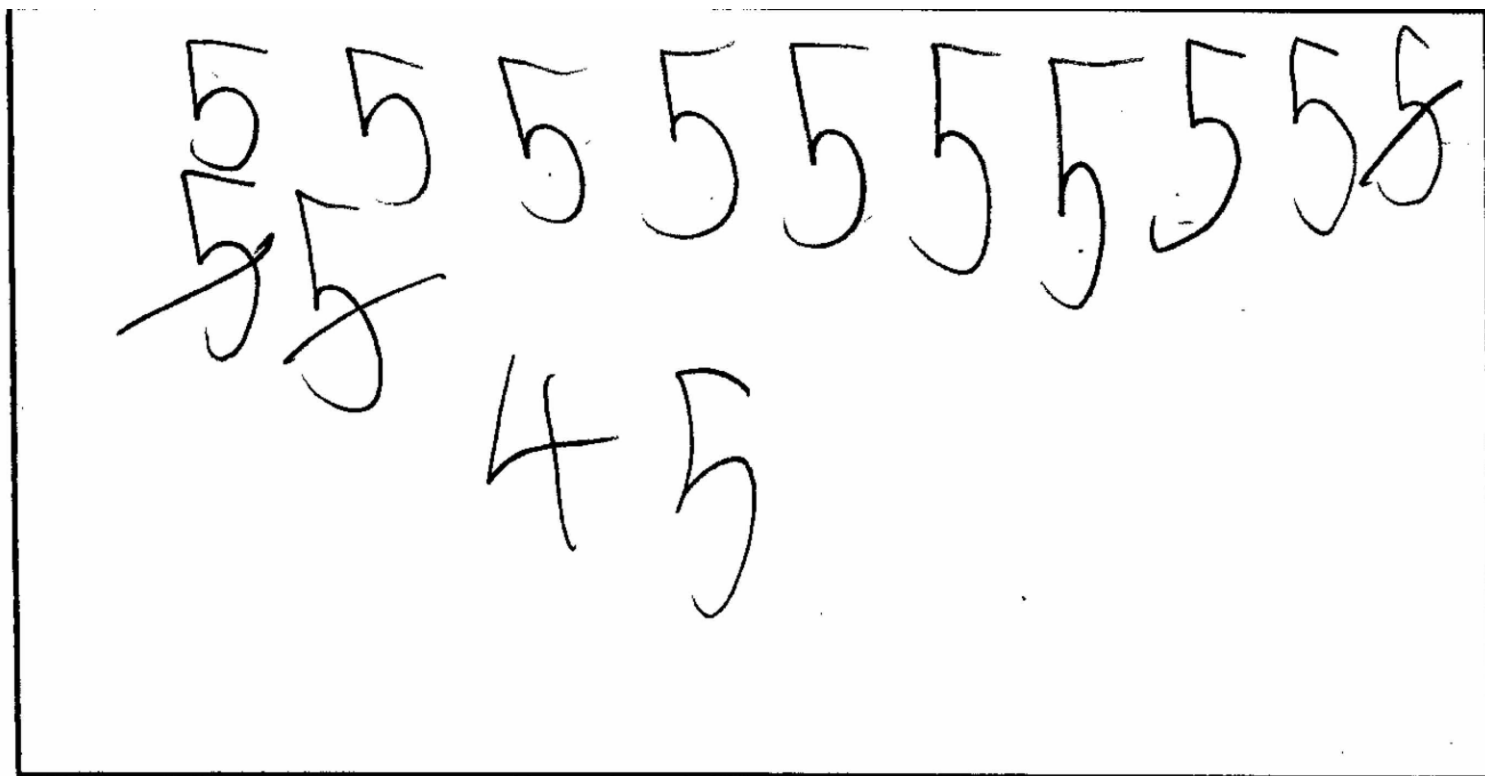
Top right: 12 and 12 are written above a horizontal line. Below the line is 24 .

Bottom left: 12 is written above a horizontal line. Below the line is 48 .

Bottom middle: 56010 is written above a horizontal line. Below the line is 15 . Below 15 is 45 .

Handwritten number 45 circled.

What Mathematics Does This Child Know?

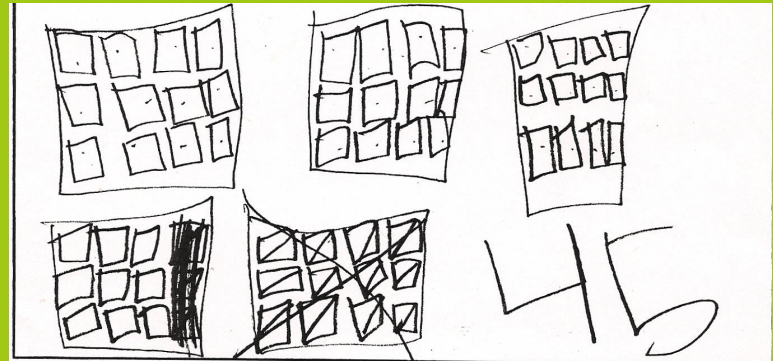


Student Work

12 12 12 12 12

10/10 10 10 = 50 60

2 2 2 2 2 = 10 (45)
|||||



12 12 12 12
10 24 24
12 48
56 10
- 15
45

(45)

5 5 5 5 5 5 5 5 5
5 5
45

Computation Methods

Levels	$8 + 6 = 14$	$14 - 8 = 6$
Level 1: Count all	Count All a 1 2 3 4 5 6 7 8 1 2 3 4 5 6 ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ 1 2 3 4 5 6 7 8 9 10 11 12 13 14 c	Take Away a 1 2 3 4 5 6 7 8 9 10 11 12 13 14 ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ b 1 2 3 4 5 6 7 8 1 2 3 4 5 6 c
Level 2: Count on	Count On 8 ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ 9 10 11 12 13 14	To solve $14 - 8$ I count on $8 + ? = 14$ 10 11 12 13 14 I took away 8 8 to 14 is 6 so $14 - 8 = 6$
Level 3: Recompose	Recompose: Make a Ten ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ 10 + 4 ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ 10 + 4	$14 - 8$: I make a ten for $8 + ? = 14$ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ 8 + 2 + 4 6 8 + 6 = 14
Doubles $\pm n$	$6 + 8$ $= 6 + 6 + 2$ $= 12 + 2 = 14$	

K, Counting and Cardinality;

K-5 Operations and Algebraic Thinking Progressions Documents

Which of the Mathematical Practices are promoted by this task?

1. Make sense of problems and persevere in solving them
2. Reason abstractly and quantitatively
3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for and make use of structure
8. Look for and express regularity in repeated reasoning

Common Core Standards

Grade 2

Jasmin received 5 packages of Pokemon cards for her birthday. Each package had 12 Pokemon cards. She gave 15 Pokemon cards to her brother. How many Pokemon cards does Jasmin have now?

Operations and Algebraic Thinking

- Represent and solve one and two step word problems involving addition and subtraction
- Work with equal groups of objects to gain foundations for multiplication

Number and Operations in Base 10

- Use place value understanding and properties of operations to add and subtract using concrete models, drawings & strategies (fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction)
- Skip count by 5's, 10's and 100's

What are the differences between these two tasks?
What are the elements of a juicy task?

A Comparison of Two Tasks

Task One

Jasmin received 5 packages of Pokemon cards for her birthday. Each package had 12 Pokemon cards. She gave 15 Pokemon cards to her brother. How many Pokemon cards does Jasmin have now?

Task Two

Multiplication Facts to 81 (A)									
Determine each product.									
$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$
$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$
$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 8 \\ \hline \end{array}$
$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$
$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$
$\begin{array}{r} 6 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$
$\begin{array}{r} 5 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 8 \\ \hline \end{array}$
$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$

Characteristics of a Juicy Task

- ▣ Profundity
- ▣ Elasticity
- ▣ Relevancy



Profundity of a Task

- Focuses on deep, meaningful mathematical content
- Promotes connections to prior learning and recognition of new mathematical relationships
- Provokes cognitive demand that engages students in reasoning, sense-making, and problem solving

Number Sense Routine: Choral Counting

- As a group, we will count by 12, starting at 12.
- You will have some quiet time to get started.
- Everyone will count together as a group. Please count loud enough so that I can hear you but don't count faster than I can write.

Choral Counting by 12

12	24	36	48	60
72	84	96	108	120
132	144	156	168	180
192				

Choral Counting by 12

12	24	36	48	60
72	84	96	108	120
132	144	156	168	180
192				

- I see 2, 4, 6, 8, 0 as you go across
- When you go down, the tens place increases by 6
- If you jump from 60 to 120, its like adding 60
- I notice in the first column, every number ends in 2. It's the same for the second column except every number ends in 4
- The tens go 1, 2, 3, 4, 6- it skips 5!
- On one diagonal, you add 72 to get the next number BUT its not the same for the other diagonal ($12 + 72 = 84$)

Elasticity of a Task

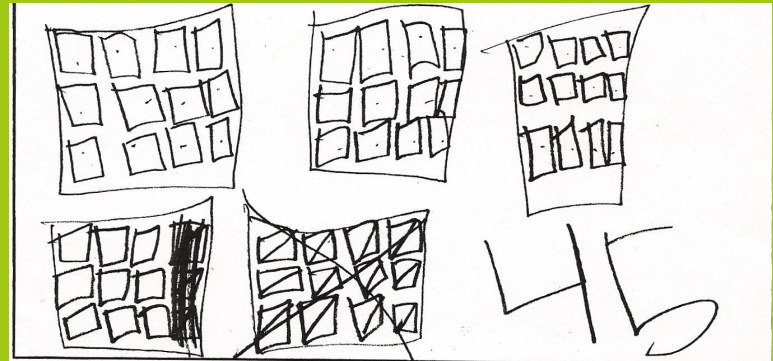
- Allows multiple pathways for entry, exploration, and/or exit
- Invites multiple forms of representation
- Supports the same learning goals for all students

Student Work

12 12 12 12 12

10/10 10 10 = 50 60

2 2 2 2 2 = 10 (45)
|||||



12 12 12 12
10 24 24
12 48
560
-15
45

(45)

55 55 55 55 55 55 55
45

Elasticity of a Task

Jasmin received __ packages of Pokemon cards for her birthday. Each package had __ Pokemon cards. She gave ____ Pokemon cards to her brother.

How many Pokemon cards does Jasmin have now?

(2, 5, 2) (3, 4, 5) (3, 10, 15) (5, 12, 15)

Relevancy of a Task

- Activates students' prior knowledge and lived experiences
- Feels familiar and authentic to students
- Intentionally provides cognitive “hooks” that support learning with coherence and connection

Less is more and start from the end.

14. Colin read 19 pages on Monday and 24 pages on Tuesday. How many pages did he read on both days?

Colin read ___ pages on Monday and ___ pages on Tuesday. How many pages did he read on both days? Use drawings, numbers, and words to explain your thinking and reasoning.

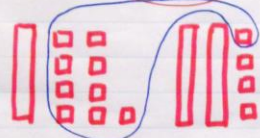
(19, 24)

(59, 34)

Colin read 19 pages on Monday and 24 pages on Tuesday. How many pages did he read on both days?

19, 24

Direct Model by 10's



$$\begin{aligned} 10 + 20 &= 30 \\ 9 + 1 &= 10 \\ 30 + 10 &= 40 \\ 40 + 3 &= 43 \end{aligned}$$

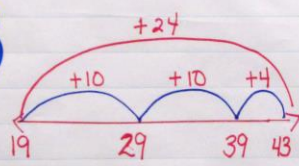
59, 34

Add by Place Value

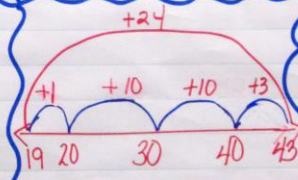
$$\begin{array}{r} 19 + 24 \\ \hline 10 \quad 9 \quad 20 \quad 4 \end{array}$$

$$\begin{aligned} 10 + 20 &= 30 \\ 9 + 1 &= 10 \\ 30 + 10 &= 40 \\ 40 + 3 &= 43 \end{aligned}$$

Count on by 10's



$$19 + 24 = 43$$



Count on to make a friendly ten

$$19 + 24 = 43$$

Compensating

$$59 + 34$$

$$\begin{aligned} 59 + 1 &= 60 \\ 60 + 33 &= 93 \end{aligned}$$

Compensating

$$\begin{array}{r} 59 + 34 \\ + \quad 1 \quad - \quad 1 \\ \hline 60 + 33 = 93 \end{array}$$

Multiplication Facts to 81 (A)

Determine each product.

$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$
$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$
$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 8 \\ \hline \end{array}$
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Opening Up A Closed Task Strategy 1

Give the answer and ask for the problem.

Multiplication Facts to 81 (A)

Determine each product.

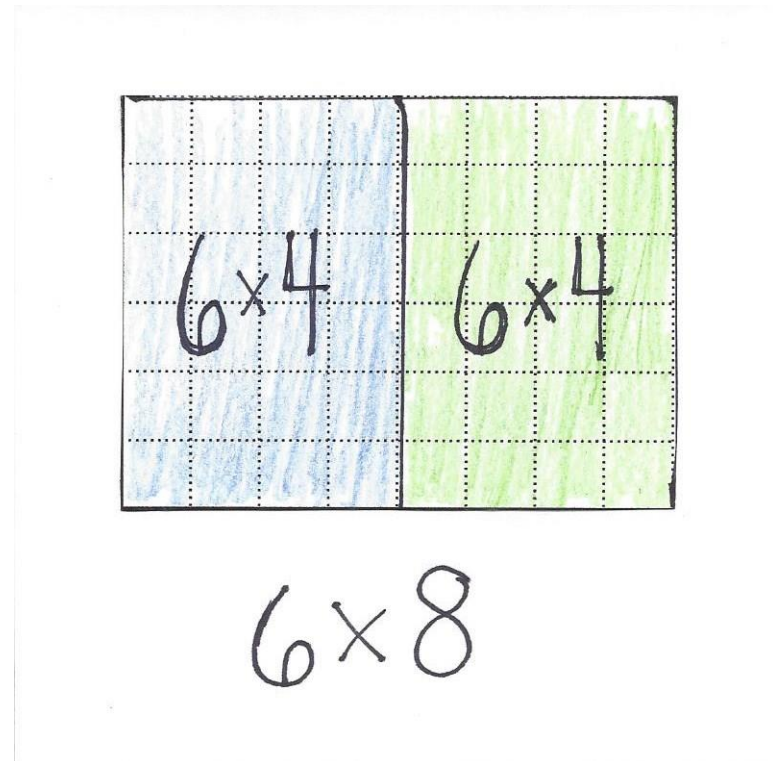
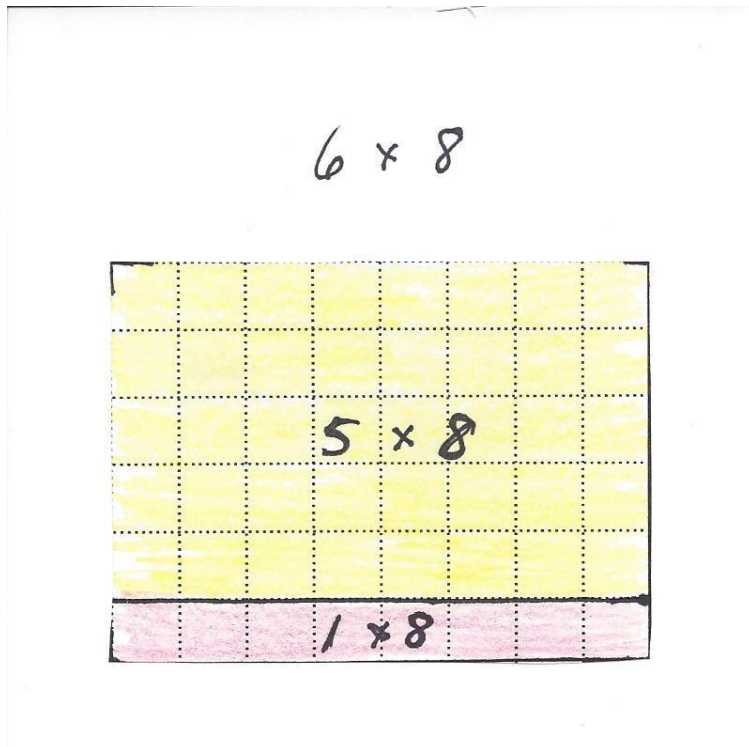
$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$
5	9	5	6	5	5	4	2	5	7

Strategy 1: Give the answer and ask for the problem.

1. 40 cupcakes at the school bake sale are arranged in equal rows. What's one way they can be arranged? Can you think of another way?
2. Create a story problem to represent the equation $5 \times 7 = 35$.
3. $5 \times 4 = 20$. How does knowing 5×4 help me figure out 5×8 ?

6×8 is 48. What facts do you know that you can use to help you solve this?

Strategy 1: Give the answer and ask for the problem.



Multiplication Facts to 81 (A)

Determine each product.

$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$
$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$
$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 8 \\ \hline \end{array}$
$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$

Opening Up A Closed Task Strategy 2

Take out an element of the problem.

Multiplication Facts to 81 (A)

Determine each product.

5	7	5	8	5	5	5	5	2	5
<u>× 1</u>	<u>× 5</u>	<u>× 5</u>	<u>× 5</u>	<u>× 3</u>	<u>× 9</u>	<u>× 5</u>	<u>× 6</u>	<u>× 5</u>	<u>× 4</u>
5	9	5	6	5	5	4	2	5	7

Strategy 2: Take out an element of the problem.

1. Make this true in as many ways as you can: $40 = \underline{\quad} \times \underline{\quad}$
2. Martha has a purse with nickels and dimes worth 40¢. How many nickels and dimes might she have? Is there another way to make 40¢?
3. What is a possible perimeter for a rectangle with an area of 40 sq ft? Can you think of another?

Multiplication Facts to 81 (A)

Determine each product.

$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$
$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$
$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 8 \\ \hline \end{array}$
$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$

Opening Up A Closed Task Strategy 3

Offer two situations or examples, and ask for similarities and differences.

Multiplication Facts to 81 (A)

Determine each product.

$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$
5	9	5	6	5	5	4	2	5	7

Strategy 3: Offer two situations or examples, and ask for similarities and differences.

1. $8 \times 5 = 40$ and $5 \times 8 = 40$. How can they both have the same product?
2. How is multiplying numbers like adding them? How is it different?

23. $6 + 8 = \underline{\quad}$

24. $9 + 9 = \underline{\quad}$

25. $7 + 0 = \underline{\quad}$

26.
$$\begin{array}{r} 9 \\ + 7 \\ \hline \end{array}$$

27.
$$\begin{array}{r} 8 \\ + 5 \\ \hline \end{array}$$

28.
$$\begin{array}{r} 8 \\ + 2 \\ \hline \end{array}$$

29.
$$\begin{array}{r} 9 \\ + 9 \\ \hline \end{array}$$

Now try one of these strategies:

1. Give the answer and ask for the problem.
2. Offer two situations or examples, and ask for similarities and differences.
3. Offer two situations or examples, and ask for similarities and differences.

Camera Project

Where's the math?

How do you use math
each day?



How does this student make meaning of the world mathematically?



How does this student make meaning of the world mathematically?



How does this student make meaning of the world mathematically?

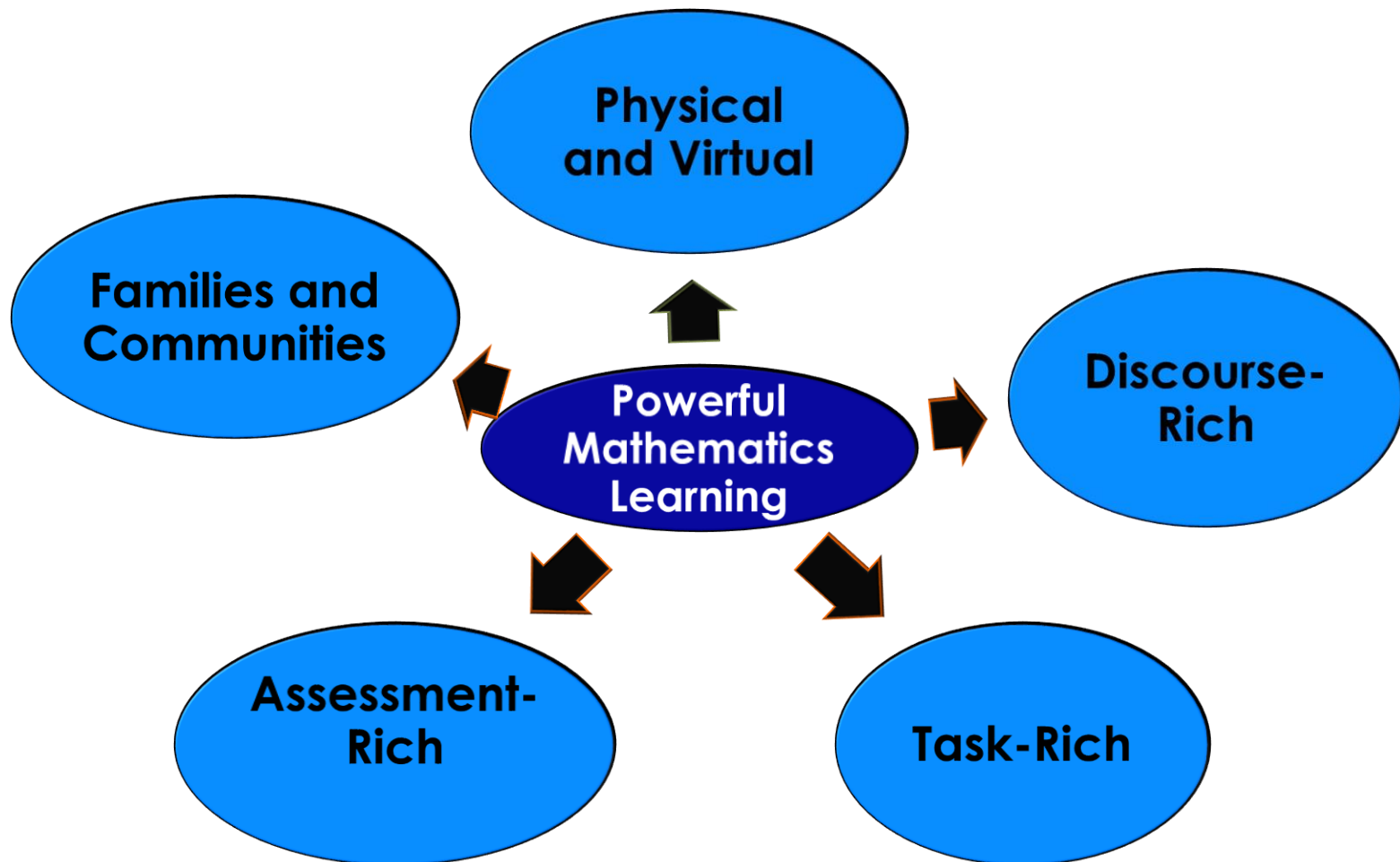


Camera Project

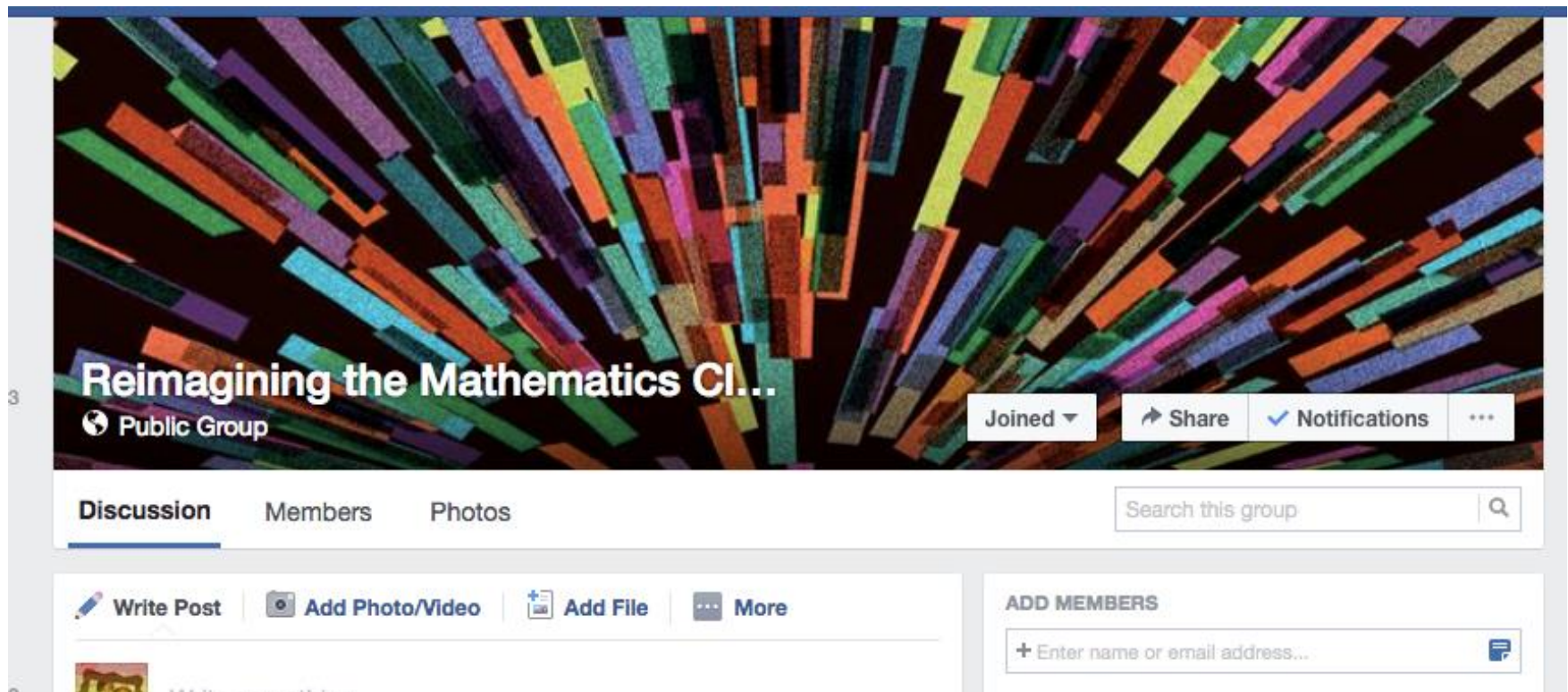
Task: Look around you (the room, your bag, wallet) and think about the ways in which you can use mathematics to describe what you see and how you make sense of the world.



Creating Productive Learning Environments



Learning Together Collaborative Learning Opportunities



Join us on:

Reimagining the Mathematics Classroom on Facebook!

Thank you!

Questions or Ideas for
Discussion?
Join us for the
Reflection Cove #2 from
11:00-12:00pm!

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