

HOUGHTON MIFFLIN HARCOURT

MATH

Expressions

Common Core

Trinity Parent's Night Presentation

August 31, 2016



Warm-up

- I want each of you try to do the following problem 'in your head'
- When you are done, quietly show a 'thumbs up'
- The important thing is to 'remember' exactly 'how' you worked the problem

$$5 * 18$$

Why Do Students Struggle?

- Lack of Number Sense
- Errors in procedural knowledge
- Mathematics language learning
- Disposition, belief, and motivation

Students with a Fixed Mindset

- Believe that talent alone creates success
- Are reluctant to take on challenges
- Prefer to stay in their comfort zone
- Are fearful of making mistakes
- Think it is important to 'look smart' in front of others
- Believe that talents and abilities are set in stone, you either have them or you don't

Students with a Growth Mindset

- Believe that talents can be developed and great abilities can be built over time
- View mistakes as an opportunity to develop
- Are resilient
- Believe that effort creates success
- Think about how they learn

A smiling male teacher with a beard, wearing a blue and white checkered shirt, stands in front of a blue chalkboard. Several students' hands are raised in the air, indicating an interactive classroom environment. The chalkboard has some math problems written on it, including $5 + x = 10$ and $+1 = 8$.

Characteristics

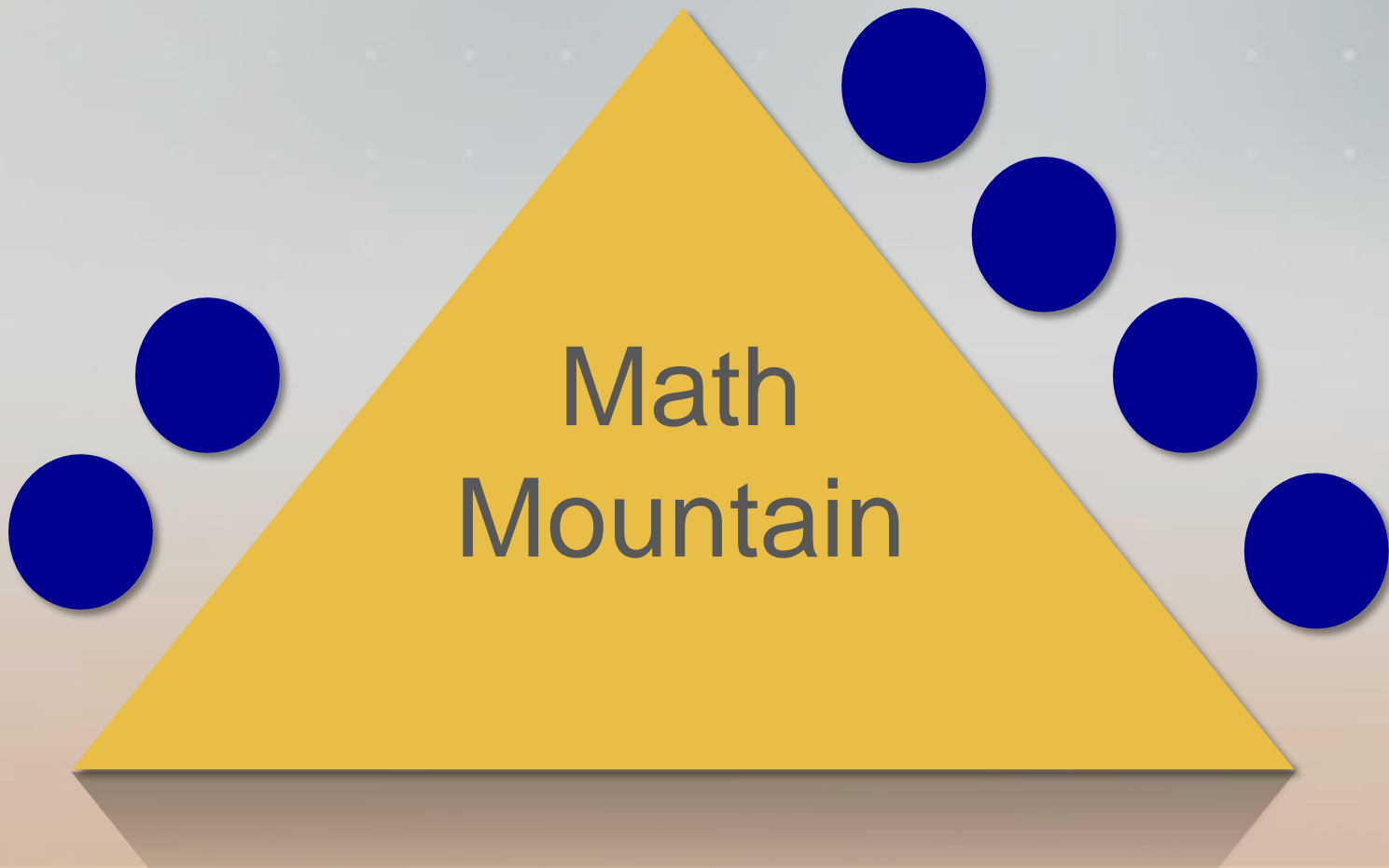
- **Fewer** and more **Rigorous** content
- Aligned with **College** and **Career** expectations
- Application of **Higher-order Skills**
- Built on strengths of **Current State Standards**
- **Internationally** Benchmarked

Multiple Math Models *for* Understanding and Fluency



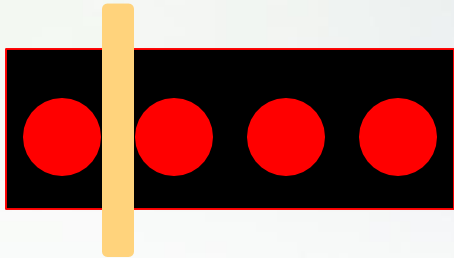
6

Math
Mountain

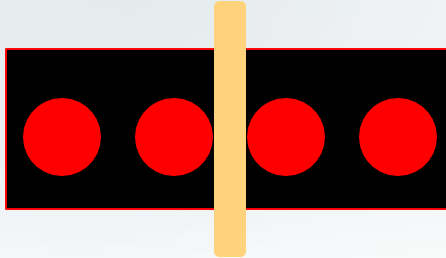


Break Apart and Partners of a Number

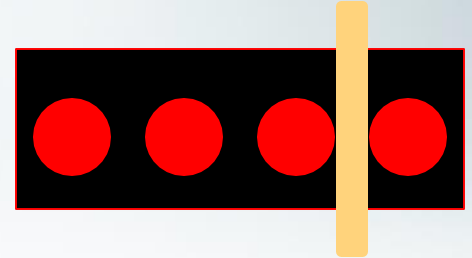
Children initially learn about breaking numbers into smaller components by using counters and a break-apart stick to help them see groups with groups.



1 and 3



2 and 2



3 and 1

➤ Tell Partner Stories About 4-Partners



Math Talk in Action

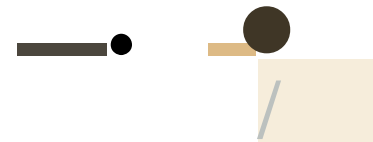
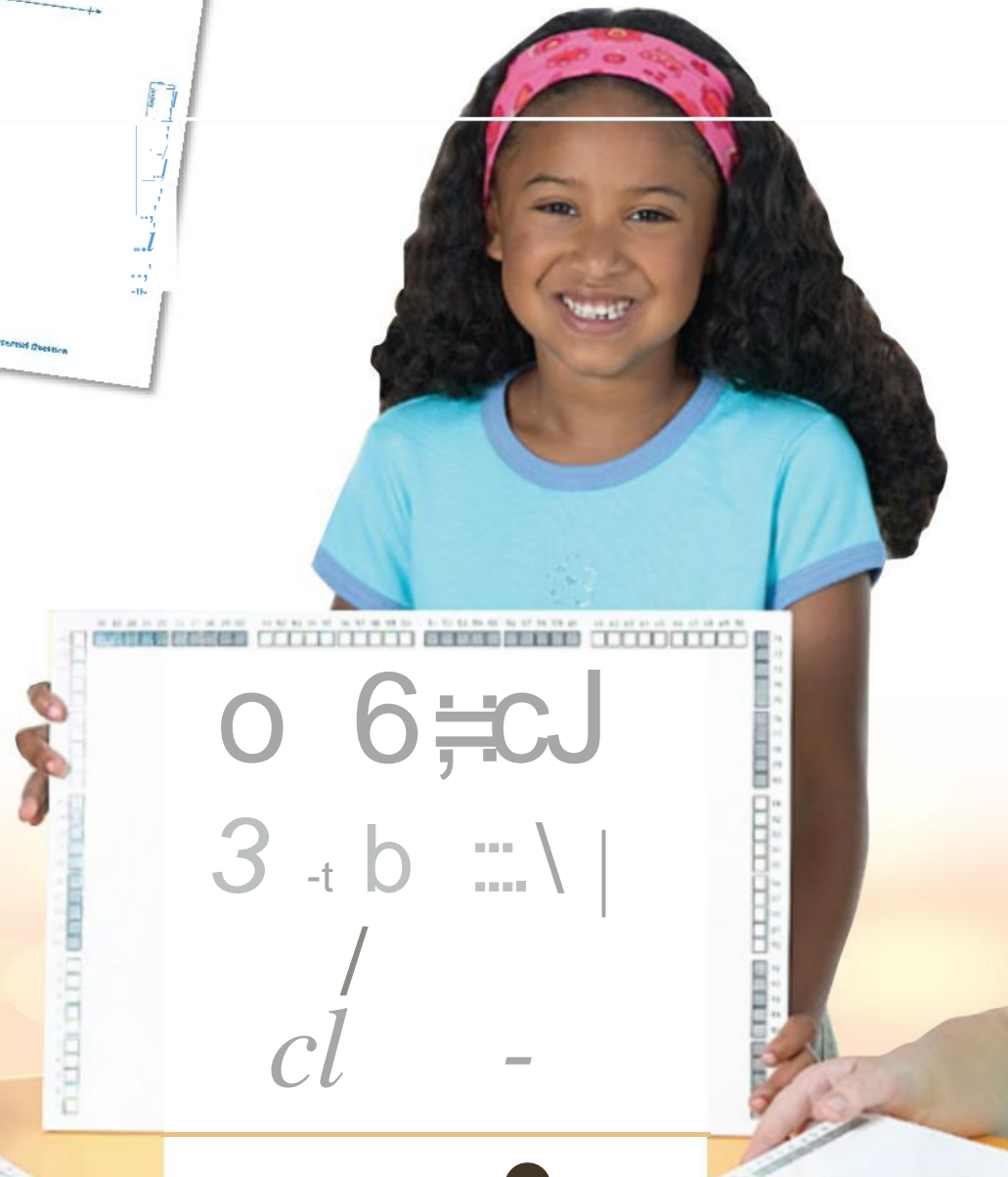
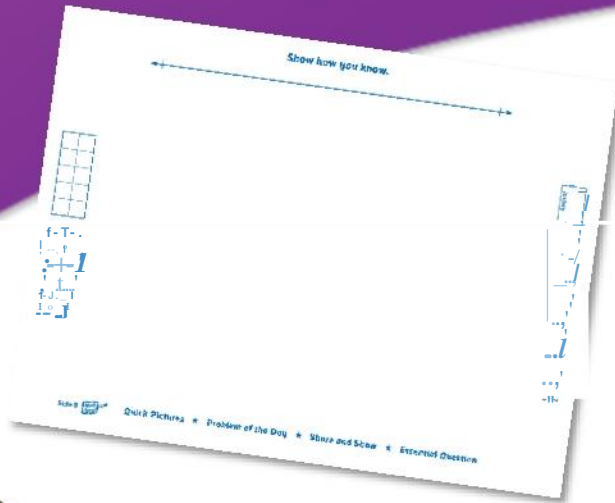
Who would like to tell a story about one set of partners of 4?

Mike: There is a total of 4 nuts under the tree. 2 of the nuts belong to the brown squirrel, and 2 of the nuts belong to the red squirrel.

That's great! Which partners of 4 did Mike use in his story?

Mio: 2 and 2.

Math Boards



First Grade

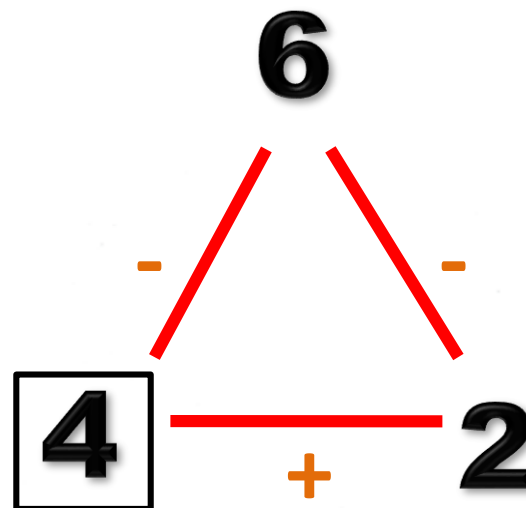
$$7 + 5 = \square$$

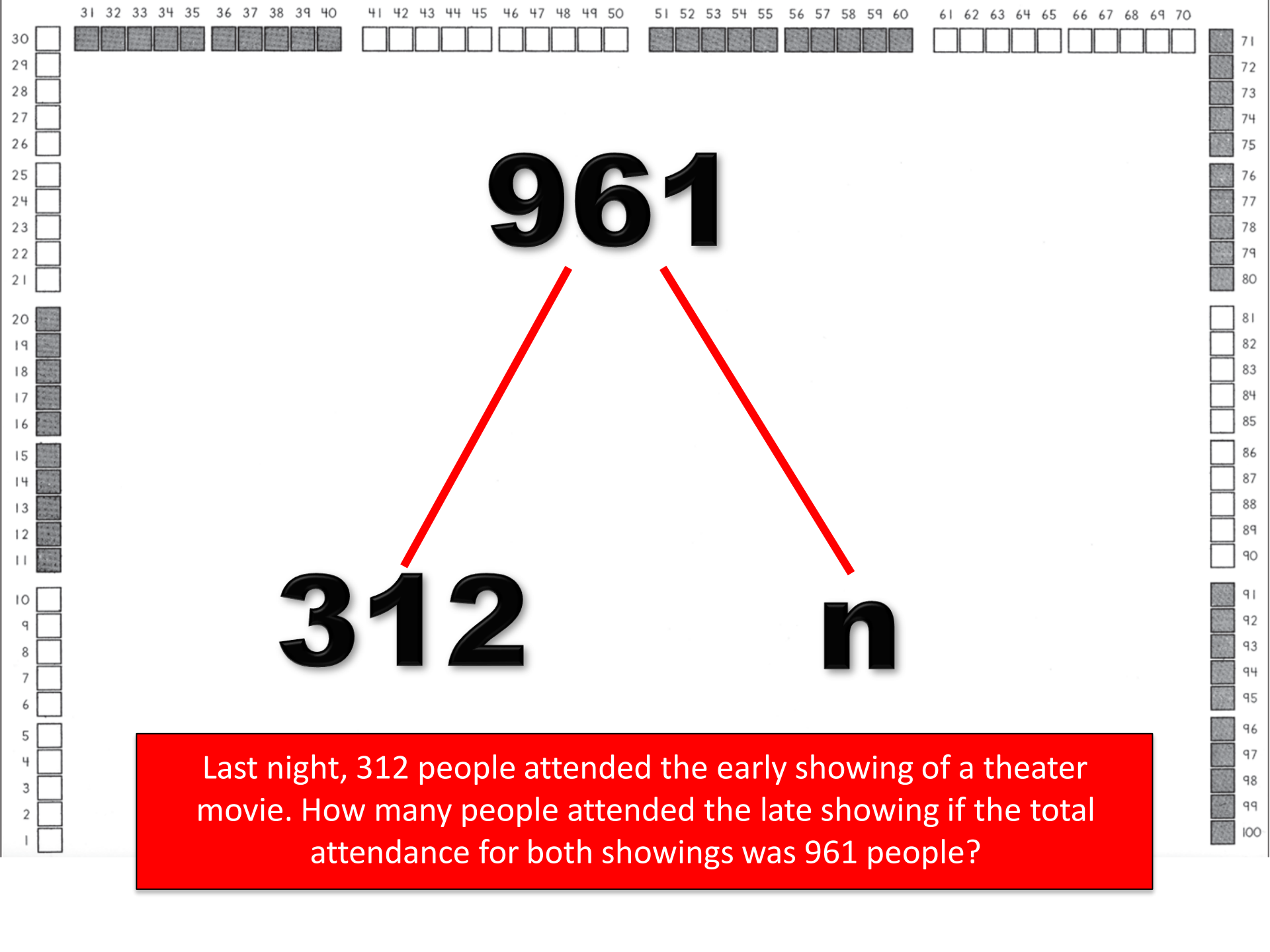
3 2

$$10 + 2 = 12$$

Second Grade

$$6 - \square = 2$$

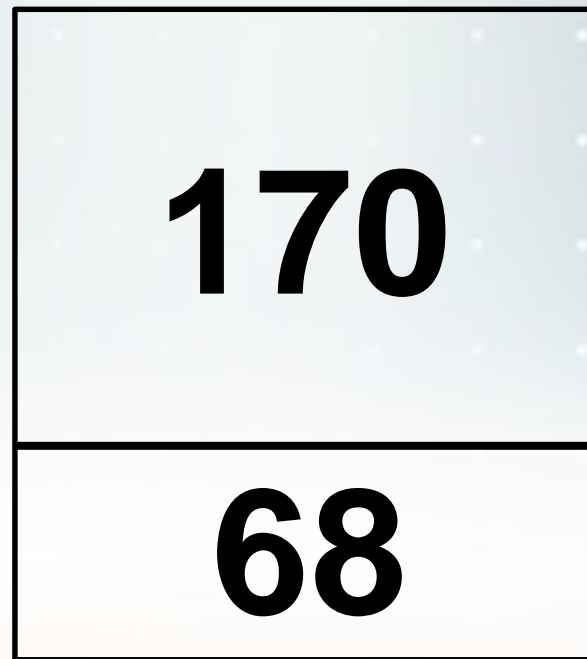




$$\begin{array}{r} 17 \\ \times 14 \\ \hline 68 \\ 170 \\ \hline 238 \end{array}$$

10

4



Area Model

Heather plants 15 trees in the same amount of time it takes Meredith to plant 24 trees. If Heather plants 20 trees how many trees will Meredith plant during that same time?

	3	4
5	15	20
8	24	



x	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5			15	20								
6												
7												
8			24	32								
9												
10												
11												
12												

34

58

1520

2432

**There were 58 crows.
36 more crows
joined them.**

**How many are
altogether?**

Fluently add and subtract within 100
using strategies based on place value,
properties of operations, and/or the
relationship between addition and
subtraction.

50	
5	8

30	
3	6

$$\begin{array}{r} 58 \\ + 36 \\ \hline \end{array}$$

80

14

94

Show all Subtotals

Mu

50

5

8

30

3

6

New Groups Above

1

58

+36

1

94

New Groups Below

Use Base-Ten Blocks to Add

1

10

100

1,000

Tens

Ones

Base-ten blocks representing 58 + 36 = 94

58 + 36 =

Add

Lineup

58

+ 36

Check

The Puzzled Penguin

Dear Math Students,

Today I had to find 8×4 . I didn't know the answer, but I figured it out by combining two multiplications I did know:

$$5 \times 2 = 10$$

$$3 \times 2 = 6$$

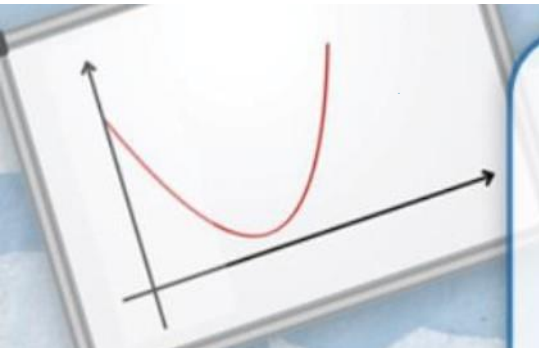
$$\hline 8 \times 4 = 16$$

Is my answer right? If not, please correct my work and tell me why it is wrong.

Your friend,
The Puzzled Penguin



Place Value to Thousands



Explore

Application

Problem Solve

**Big
Idea 1**

Place Value to One Million



Intervention

Activity Card 1-3 e

Work: In pairs

Use:

- Game Cards 2 - 7 (T)
- Counters

Decide:

Who will be Student 1
will be Student 2 for this
round.

1. Shuffle the Game Cards and place them in a stack.
Then draw the top two cards.

On Level

Activity Card 1-3

Work: In small groups

1. The drawing below shows two possible ways to
arrange 24 counters in an array.

1-by-1 Array

Challenge

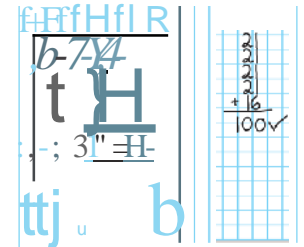
Activity Card 1-3 •

Work: On your own

Use:

- Centimeter Grid Paper
(IRB M2)

1. Draw a 10-by-10 square on your grid paper.
2. Make a design by outlining five or more smaller arrays
of squares inside the large 10-by-10 square. Be sure
that the outlined arrays cover the entire 10-by-10
square. Look at the example below.



3. Label each small array with a multiplication equation.
4. **Analyze** What do you notice about the sum of all the
products? It is equal to 100, which is the product
represented by the 10-by-10 array.



Math Talk

The background of the slide shows a classroom setting. Several students are visible from behind, sitting at desks and raising their hands. In the background, a chalkboard displays the word "Math" and a division problem:
$$\begin{array}{r} 32 \\ 2 \overline{)64} \end{array}$$

SOLVE

EXPLAIN

QUESTION

JUSTIFY

Homework and Spiral Review

1-2

Homework



GOAL Formative Assessment

- ✓ Include students' completed Homework pages as part of their portfolios.

1-2

Name _____

Date _____

Homework

Study Plan

Homework Helper

Write a multiplication equation to find the total number.

1. How many apples?



$$4 \times 6 = 24$$

2. How many lenses?



$$7 \times 2 = 14$$

Make a math drawing and label it with a multiplication equation. Then write the answer to the problem.

3. Beth put the dinner rolls she baked in 5 bags, with 6 rolls per bag. How many rolls did Beth bake?

30 rolls



$$5 \times 6 = 30$$

4. Baya arranged her pennies into 7 piles of 5. How many pennies did she have?

35 pennies



$$7 \times 5 = 35$$

UNIT 1 LESSON 2

Multiplication as Equal Groups 5

1-2

Remembering



GOAL Spiral Review

This Remembering page is appropriate anytime after today's lesson.

1-2

Name _____

Date _____

Remembering

Write each total.

$$1. 3 \times 5 = 5 + 5 + 5 = 15$$

$$2. 5 \cdot 5 = 5 + 5 + 5 + 5 + 5 = 25$$

Write the 5s additions that show each multiplication. Then write the total.

$$3. 4 \times 5 = 5 + 5 + 5 + 5 = 20$$

$$4. 6 \times 5 = 5 + 5 + 5 + 5 + 5 + 5 = 30$$

Write each product.

$$5. 7 \times 5 = 35$$

$$6. 9 \times 5 = 45$$

$$7. 8 \times 5 = 40$$

$$8. 10 \times 5 = 50$$

$$9. 1 \times 5 = 5$$

$$10. 5 \times 2 = 10$$

$$11. 5 \times 3 = 15$$

$$12. 5 \times 4 = 20$$

$$13. 5 \times 5 = 25$$

14. **Stretch Your Thinking** Draw a picture to show 3×5 . Explain your drawing, and find the product.

Possible drawing shown. Explanations will vary based on drawings. The product is 15.



6 UNIT 1 LESSON 2

Multiplication as Equal Groups

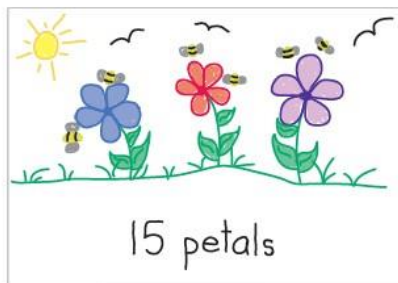
Family Involvement

Home or School Activity



Art Connection

Equal Groups Drawings Ask students to make drawings of familiar objects that can show equal groups. For example, have them draw 3 flowers with 5 petals per flower, and then label the total number of petals. When students' drawings are complete, have them draw and label other elements such as 3 leaves per stem and 2 bees per flower.



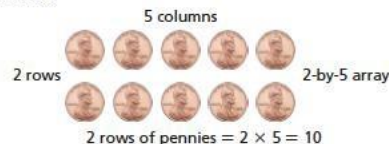
Understand the concept of multiplication, the program presents three ways to think about

• **Groups:** Multiplication can be used to find the total of groups of the same size. In early lessons, students size in repeated-groups equations to help which factor is the group size and which is the

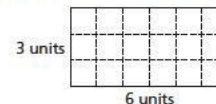


4 groups of bananas
 $3 \times 4 = 3 + 3 + 3 + 3 = 12$

- **Arrays:** Multiplication can be used to find the total number of items in an array—an arrangement of objects into rows and columns.



- **Area:** Multiplication can be used to find the area of a rectangle.



Area: $3 \text{ units} \times 6 \text{ units} = 18 \text{ square units}$

Please call if you have any questions or comments.

Thank you.

Sincerely,
 Your child's teacher

COMMON
CORE

This unit includes the Common Core Standards for Mathematical Content for Operations and Algebraic Thinking, 3.OA.1, 3.OA.2, 3.OA.3, 3.OA.4, 3.OA.5, 3.OA.6, 3.OA.7, 3.OA.8, Measurement and Data, 3.MD.5a, 3.MD.5b, 3.MD.7a, 3.MD.7b, 3.MD.7c, 3.MD.7d, and all Mathematical Practices.

Think Central

Welcome to **THINK** central

Students, Teachers, and Administrators

State:

District:

School:

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Parents make a difference

- Be positive about math
- Encourage their effort
- Get involved in their math
- Communicate with your child
- **LISTEN** to you child's thinking about their math homework



THANK YOU !!

QUESTIONS???



Please do NOT hesitate to email me with any questions you may have about Math Expressions or if you wish a copy of this PowerPoint.

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