Eureka Math

3rd Grade
Module 3
Lesson 17

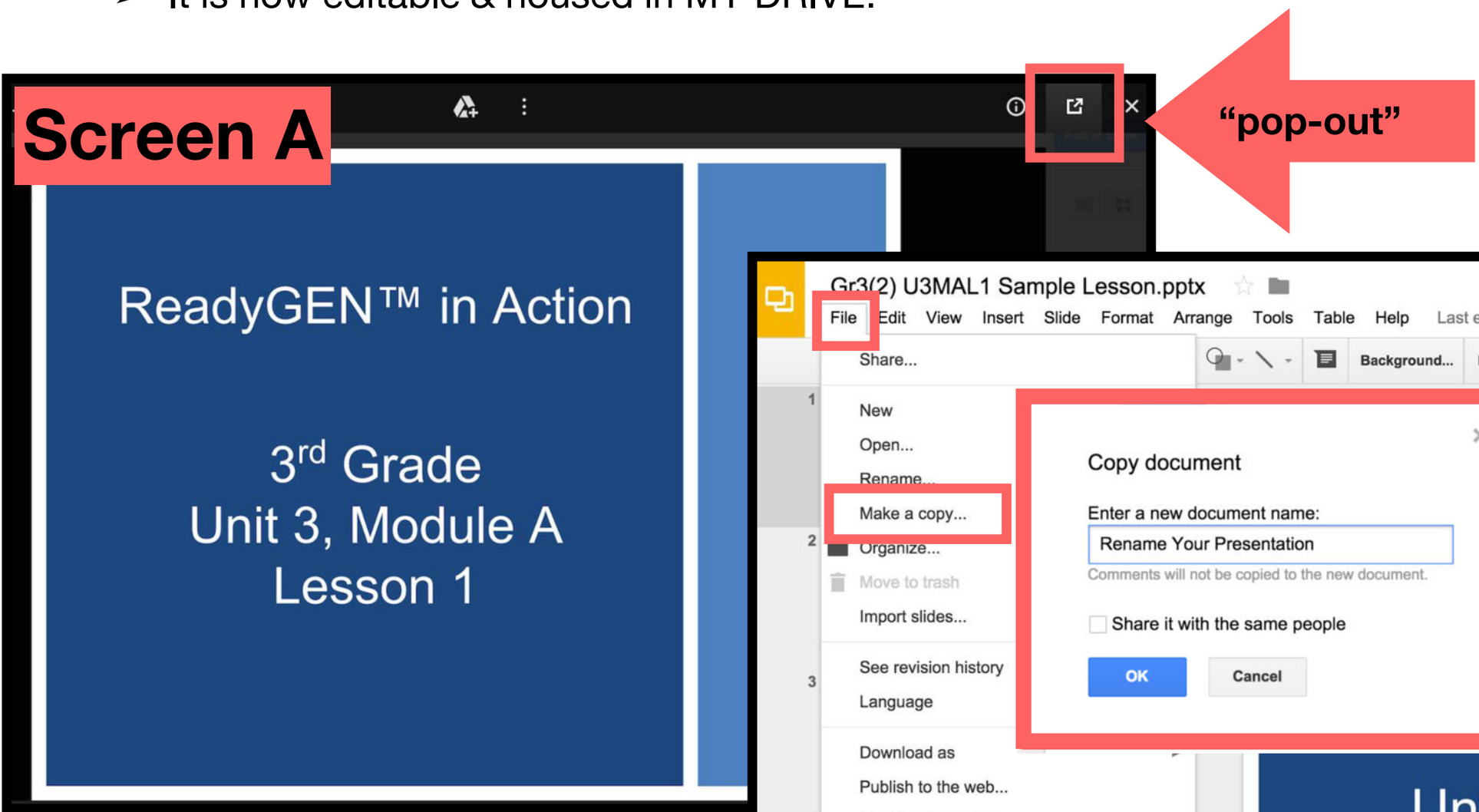
At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this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

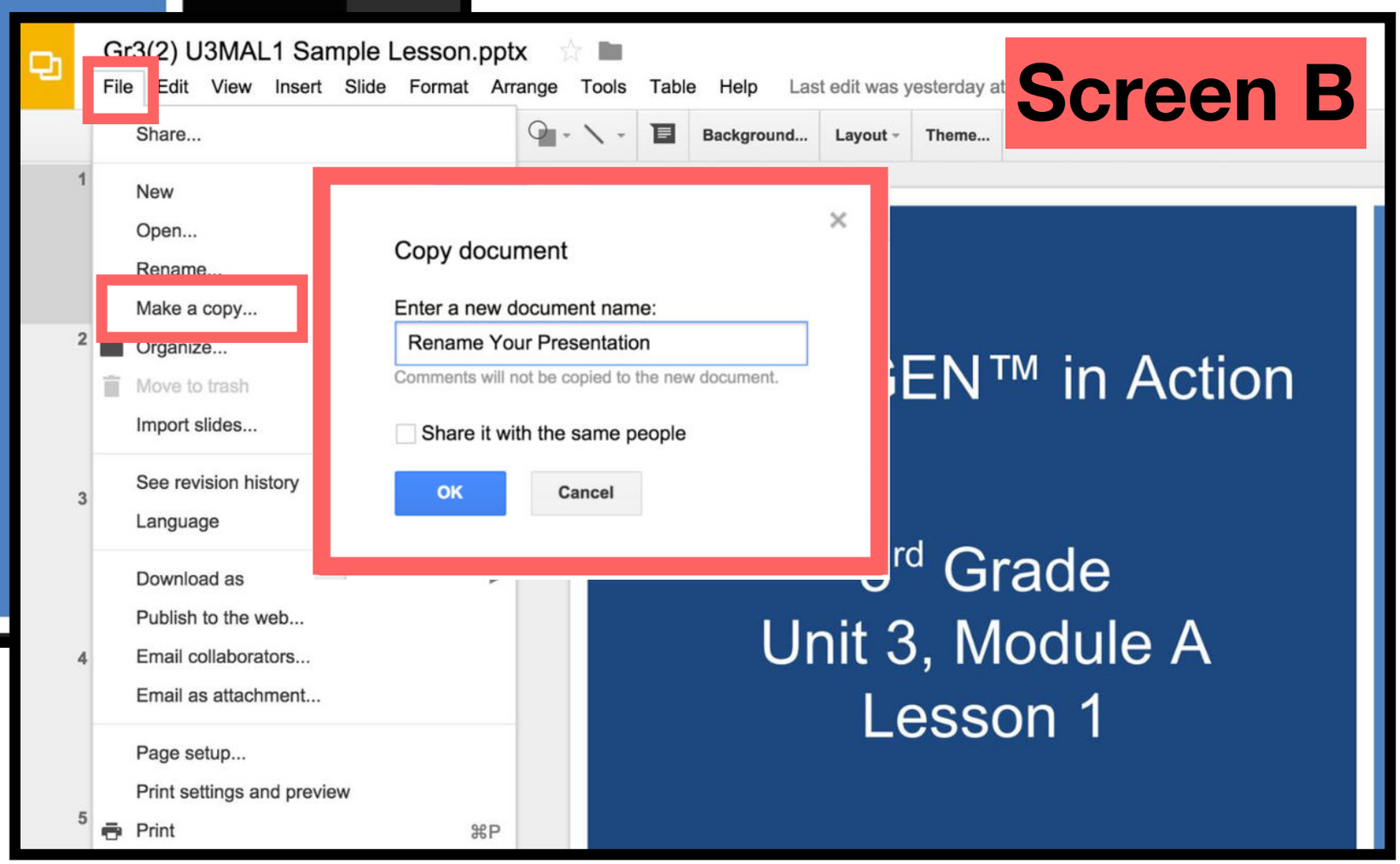
Directions for customizing presentations are available on the next slide.

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.



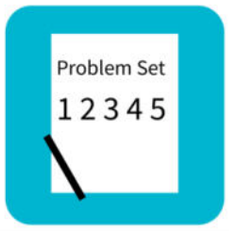


Icons

Read, Draw, Write

Learning Target

Personal White Board

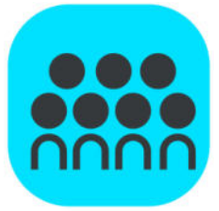


Problem Set

Manipulatives Needed

Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

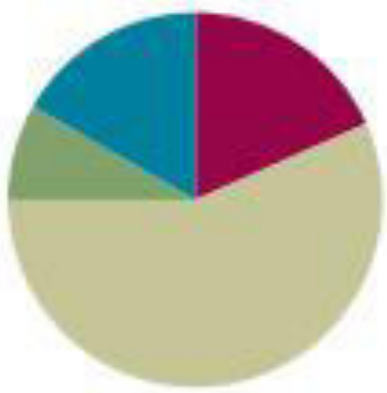
Small Group Time

Lesson 17

Objective: Identify patterns in multiplication and division facts using the multiplication table.

Suggested Lesson Structure

Fluency Practice	(11 minutes)
Application Problem	(5 minutes)
Concept Development	(34 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



I can identify patterns in multiplication and division facts using the multiplication table.

Fluency Practice

Multiply with 10

I will say a fact, you say the whole equation.

Fluency Practice

Multiply with 10

I will say a fact, you say the whole equation.

10 x 1

Fluency Practice

Multiply with 10

I will say a fact, you say the whole equation.

(I say) ……..10 x 1

(you say) ……. 10 x 1 = 10

Fluency Practice

Multiply with 10

I will say a fact, you say the whole equation.

10 x 2

Fluency Practice

Multiply with 10

I will say a fact, you say the whole equation.

10 x 2

Fluency Practice

Multiply with 10

I will say a fact, you say the whole equation.

10 x 2

10 x 3

Fluency Practice

Multiply with 10

I will say a fact, you say the whole equation.

10 x 2

10 x 3

10 x 8

Fluency Practice

Multiply with 10

I will say a fact, you say the whole equation.

10 x 2

10 x 3

10 x 8

10 x 5

Fluency Practice

Multiply with 10

Now I will say the PRODUCT that is a multiple of 10. You way the multiplication fact starting with 10.

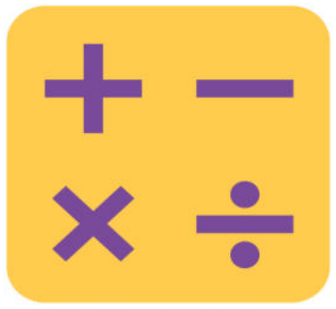
Fluency Practice

Multiply with 10

Now I will say the PRODUCT that is a multiple of 10. You way the multiplication equation starting with 10.

30

10 x ……..



Fluency Practice

Multiply with 10

Now I will say the PRODUCT that is a multiple of 10. You way the multiplication equation starting with 10.

(I say) 30

(you say)..... 10 x 3 = 30

Fluency Practice

Multiply with 10

Now I will say the PRODUCT that is a multiple of 10. You way the multiplication equation starting with 10.

40

Fluency Practice

Multiply with 10

Now I will say the PRODUCT that is a multiple of 10. You way the multiplication equation starting with 10.

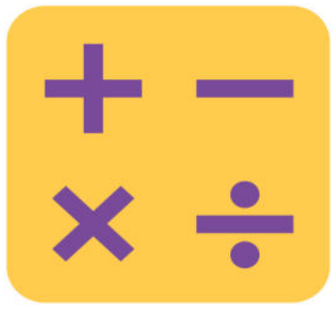
90

Fluency Practice

Multiply with 10

Now I will say the PRODUCT that is a multiple of 10. You way the multiplication equation starting with 10.

50

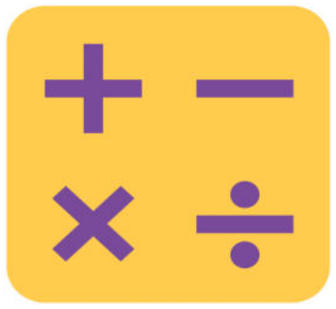


Fluency Practice

Multiply with 10

Now I will say the PRODUCT that is a multiple of 10. You way the multiplication equation starting with 10.

10



Fluency Practice

Multiply or Divide

Say the multiplication sentences.

6 x 1 = _____

Fluency Practice

Multiply or Divide

Say the multiplication sentences.

6 x 1 = _____

6 x 2 = _____

Fluency Practice

Multiply or Divide

Say the multiplication sentences.

6 x 1 = _____

6 x 2 = _____

6 x 3 = _____

Fluency Practice

Multiply or Divide

On your personal white board,
show the answer to 6 x 7.
If you need to, you may skip count.

Fluency Practice

Multiply or Divide

On your personal white board,
show the answer to 6 x 7.
If you need to, you may skip count.

6 x 7 = 42

Fluency Practice

Multiply or Divide

Continue to say the equation for the following. If you need your white board, you may use it.

30 ÷ 6

Fluency Practice

Multiply or Divide

Continue to say the equation for the following. If you need your white board, you may use it.

24 ÷ 6

Fluency Practice

Multiply or Divide

Continue to say the equation for the following. If you need your white board, you may use it.

60 ÷ 6

Fluency Practice

Multiply or Divide

Continue to say the equation for the following. If you need your white board, you may use it.

54 ÷ 6

Fluency Practice

Multiply or Divide

Continue to say the equation for the following. If you need your white board, you may use it.

7 x 1

Fluency Practice

Multiply or Divide

Continue to say the equation for the following. If you need your white board, you may use it.

7 x 2

Fluency Practice

Multiply or Divide

Continue to say the equation for the following. If you need your white board, you may use it.

7 x 3

Fluency Practice

Multiply or Divide

Continue to say the equation for the following. If you need your white board, you may use it.

7 x 3

(continue as needed)

Fluency Practice

Complete the Number Sentence

On your white board, complete the equation.

$$\underline{\quad} \times 1 = 6$$

Fluency Practice

Complete the Number Sentence

On your white board, complete the equation.

$9 \times \_\_\_\_ = 9$

Fluency Practice

Complete the Number Sentence

On your white board, complete the equation.

$$7 \div \_\_\_\_ = 1$$

Fluency Practice

Complete the Number Sentence

On your white board, complete the equation.

$6 \div \_\_ = 6$

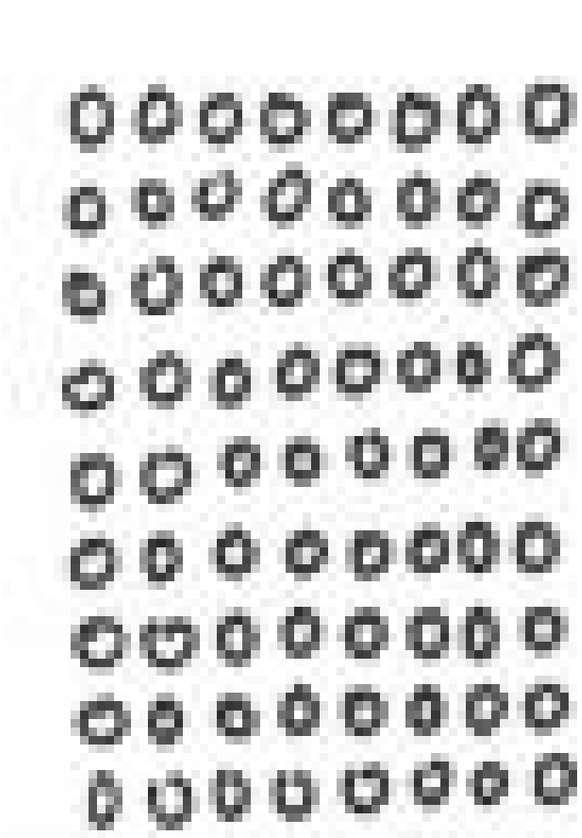
(continue as needed)

Application Problem

Henry's garden has 9 rows of squash plants. Each row has 8 squash plants. (draw)

Application Problem

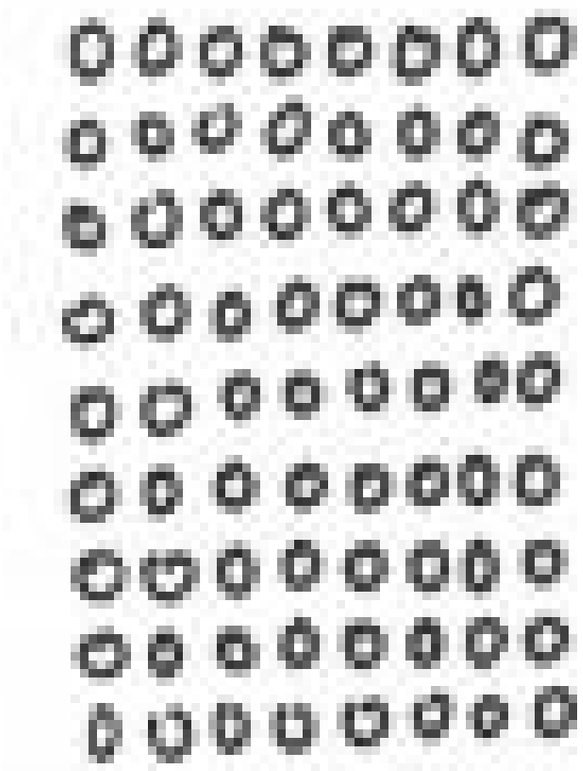
Henry's garden has 9 rows of squash plants.
Each row has 8 squash plants.



$9 \times 8 = 72$

Application Problem

Henry's garden has 9 rows of squash plants.
Each row has 8 squash plants.
There is also 1 row with 8 watermelon



9 x 8 = 72

Application Problem

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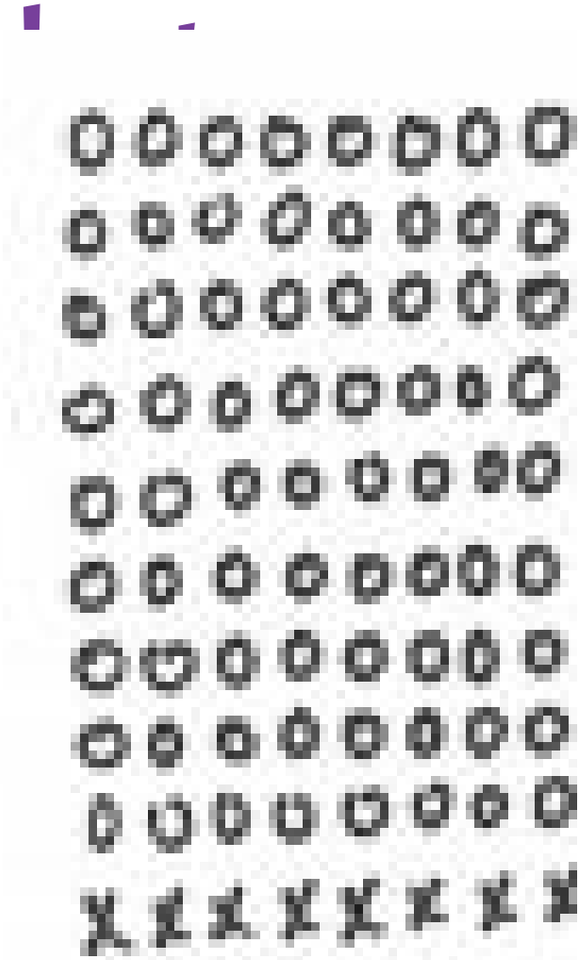


$9 \times 8 = 72$

$1 \times 8 = 8$

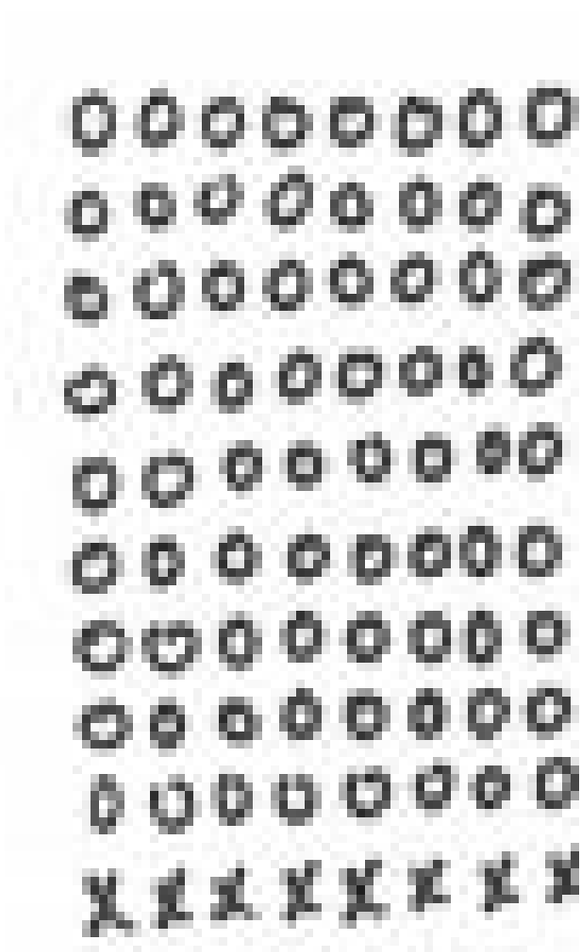
Application Problem

Henry's garden has 9 rows of squash plants. Each row has 8 squash plants.

How many squash and watermelon does Henry have in all?

Application Problem

How many squash and watermelon does Henry have in all?

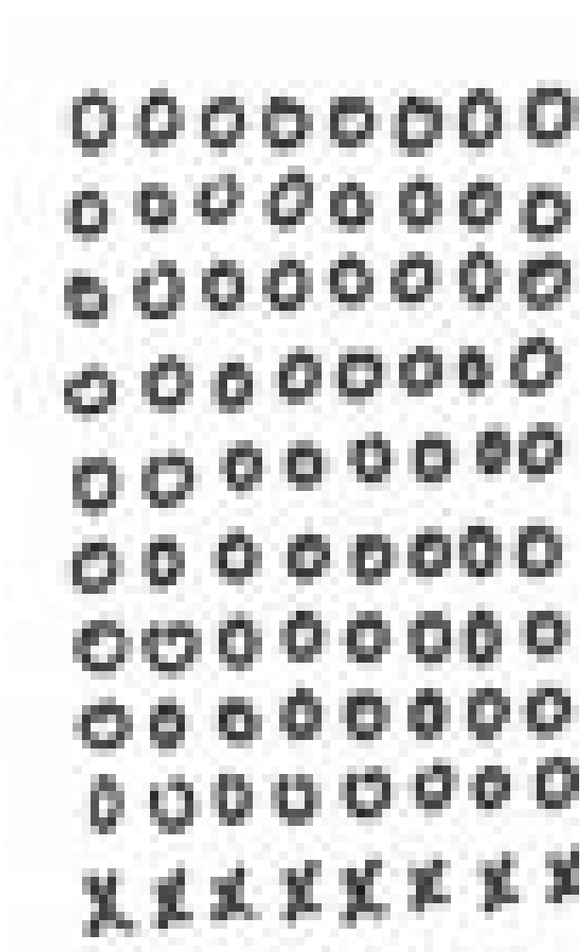


$(9 \times 8) + (1 \times 8)$

$72 + 8 =$

Application Problem

How many squash and watermelon does Henry have in all?



$(9 \times 8) + (1 \times 8)$

$72 + 8 = 80$

Concept Development

Materials

Personal Write Board

Problem Set

Orange Crayon

Concept Development

Write the products to complete the table in Problem 1. Then, color all the squares that have even products orange.

Name _____ Date _____

1. Write the products into the squares as fast as you can.

1 × 1	2 × 1	3 × 1	4 × 1	5 × 1	6 × 1	7 × 1	8 × 1
1 × 2	2 × 2	3 × 2	4 × 2	5 × 2	6 × 2	7 × 2	8 × 2
1 × 3	2 × 3	3 × 3	4 × 3	5 × 3	6 × 3	7 × 3	8 × 3
1 × 4	2 × 4	3 × 4	4 × 4	5 × 4	6 × 4	7 × 4	8 × 4
1 × 5	2 × 5	3 × 5	4 × 5	5 × 5	6 × 5	7 × 5	8 × 5

Concept Development

Completed Table from Problem 1:

1×1 1	2×1 2	3×1 3	4×1 4	5×1 5	6×1 6	7×1 7	8×1 8
1×2 2	2×2 4	3×2 6	4×2 8	5×2 10	6×2 12	7×2 14	8×2 16
1×3 3	2×3 6	3×3 9	4×3 12	5×3 15	6×3 18	7×3 21	8×3 24
1×4 4	2×4 8	3×4 12	4×4 16	5×4 20	6×4 24	7×4 28	8×4 32
1×5 5	2×5 10	3×5 15	4×5 20	5×5 25	6×5 30	7×5 35	8×5 40
1×6 6	2×6 12	3×6 18	4×6 24	5×6 30	6×6 36	7×6 42	8×6 48
1×7 7	2×7 14	3×7 21	4×7 28	5×7 35	6×7 42	7×7 49	8×7 56
1×8 8	2×8 16	3×8 24	4×8 32	5×8 40	6×8 48	7×8 56	8×8 64

Concept Development

What can you tell about the factors of the even products?

What can you tell about the factors of the odd products

Concept Development

Even x Even =

Concept Development

Even x Even = Even

Concept Development

Even x Even = Even

Even x Odd =

Concept Development

Even x Even = Even

Even x Odd = Even

Concept Development

Even x Even = Even
Even x Odd = Even
Odd x Odd =

Concept Development

Even x Even = Even
Even x Odd = Even
Odd x Odd = Odd

Debrief

Talk to a partner: How do the patterns you discovered in Problem 1 for odd and even products help you when multiplying?

What is the name of the strategy that you used to solve Problem 1(c)? Explain to a partner how this strategy could be used to solve another fact that isn't on the chart, like 6 × 18.

Look at the arrays you drew for Problem 2. If you drew an array for 7 × 7, how many little squares would you add to the array that you drew for 6 × 6? How do you know?

Debrief

In Problem 2(c), you proved that 9 × 9 is the sum of the first 9 odd numbers. Is 10 × 10 the sum of the first 10 odd numbers? Where can you see the odd numbers on the two-colored multiplication table? Can you state a rule that this pattern shows using n to represent a number? (Guide students to see that n × n is the sum of the first n odd numbers. These types of problems are included in the homework.)

Exit Ticket

Name _____ Date _____

1. Use what you know to find the product of 8 × 12 or 6 eights + 6 eights.

2. Luis says 3 × 233 = 626. Use what you learned about odd times odd to explain why Luis is wrong.