



Math 3

1-9 Decomposing Units Using the Distributive Property

Name:

Date:

[CCSS.MATH.CONTENT.3.OA.A.3](#)

Common Core Standards

Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

[CCSS.MATH.CONTENT.3.OA.B.5](#)

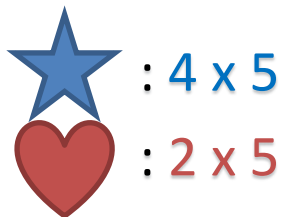
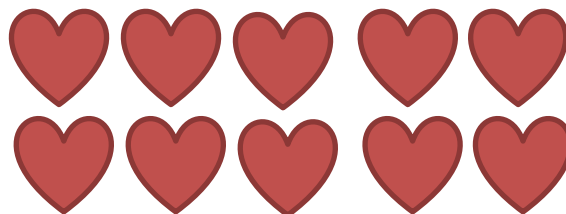
Apply properties of operations as strategies to multiply and divide. *Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)*

1-9 Decomposing Units Using the Distributive Property

Decomposing

Identify:

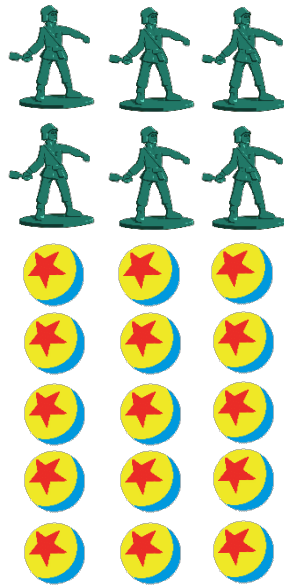
The expression for the following arrays:



Decomposing

Situation:

Lily decomposes her array of toys into 2 smaller arrays. The array is 7 rows of 3 toys.



Complete the statement below:

_ threes + _ threes

Write the decomposed expression:

(_ x _) + (_ x _)

How many toys does each small array have?

Part A: Encircle \checkmark if the equation is decomposed correctly. Otherwise, encircle \times .

1. $12 \div 4 = (4 \div 4) + (8 \div 4)$ \checkmark \times

2. $6 \times 5 = (3 \times 5) + (3 \times 5)$ \checkmark \times

3. $21 \div 3 = (18 \div 3) + (6 \div 3)$ \checkmark \times

4. $25 \div 5 = (15 \div 5) + (10 \div 5)$ \checkmark \times

5. $18 \div 2 = (12 \div 2) + (8 \div 2)$ \checkmark \times

6. $9 \times 3 = (4 \times 3) + (4 \times 3)$ \checkmark \times

7. $8 \times 4 = (3 \times 4) + (5 \times 4)$ \checkmark \times

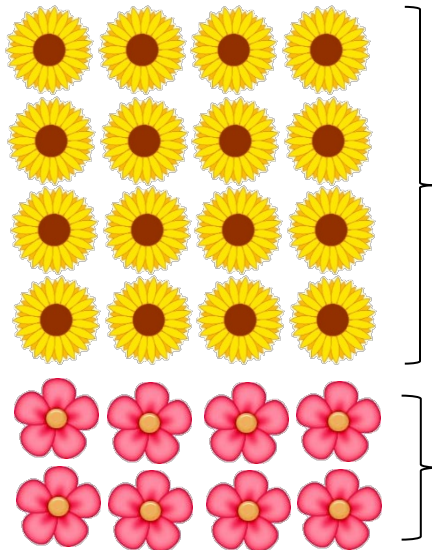
8. $7 \times 2 = (4 \times 2) + (3 \times 2)$ \checkmark \times

9. $28 \div 4 = (16 \div 4) + (12 \div 4)$ \checkmark \times

10. $8 \times 5 = (5 \times 5) + (4 \times 5)$ \checkmark \times

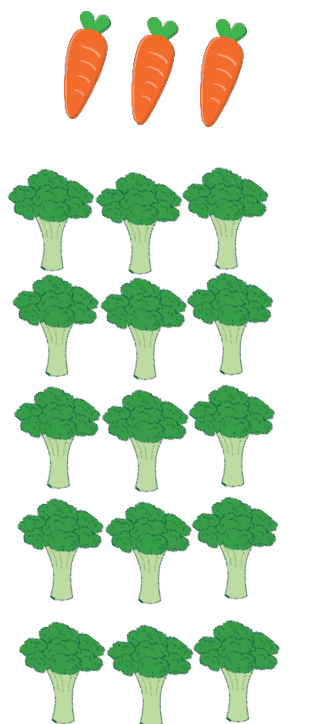
Part B: Encircle the bigger decomposed array and write the equation for both arrays.

1.



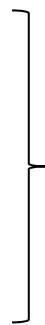
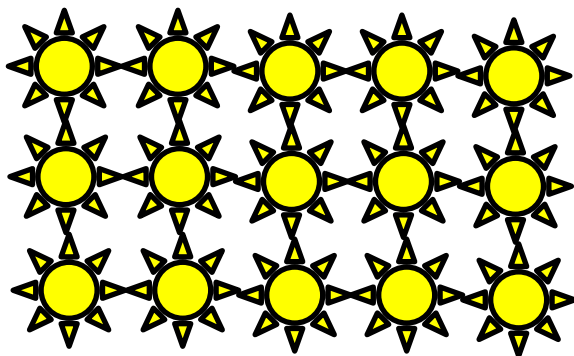
A 4x4 array of yellow sunflowers is shown above a 2x4 array of pink flowers. To the right of the sunflowers is a bracket pointing to a box containing the equation $\times =$. To the right of the pink flowers is a bracket pointing to a box containing the equation $\times =$.

2.

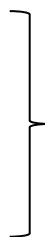
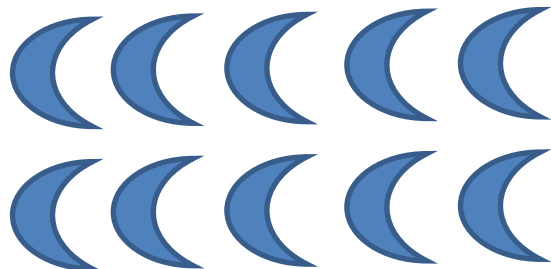


Three carrots are shown above a 5x3 array of broccoli. To the right of the carrots is a bracket pointing to a box containing the equation $\div =$. To the right of the broccoli is a bracket pointing to a box containing the equation $\div =$.

3.



$$x =$$



$$x =$$

Part C: Complete the equation and draw the arrays. Shade the smaller decomposed array.

1. $32 \div \underline{\quad} = (\underline{\quad} \div 4) + (12 \div \underline{\quad}) = \underline{\quad}$

$$2. 8 \times 3 = (_ \times 3) + (3 \times _) = \underline{\hspace{2cm}}$$


$$3. 45 \div 5 = (30 \div _) + (_ \div _) = \underline{\hspace{2cm}}$$


ANSWER KEY


Situation **2 threes + 5 threes**
(2 x 3) + (5 x 3)
6 toy soldiers and 15 balls

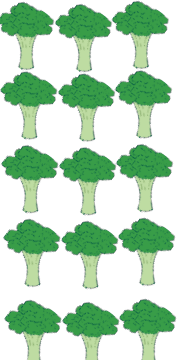
- Part A:**
1. ✓
 2. ✓
 3. x
 4. ✓
 5. x
 6. x
 7. ✓
 8. ✓
 9. ✓
 10. x

Part B:

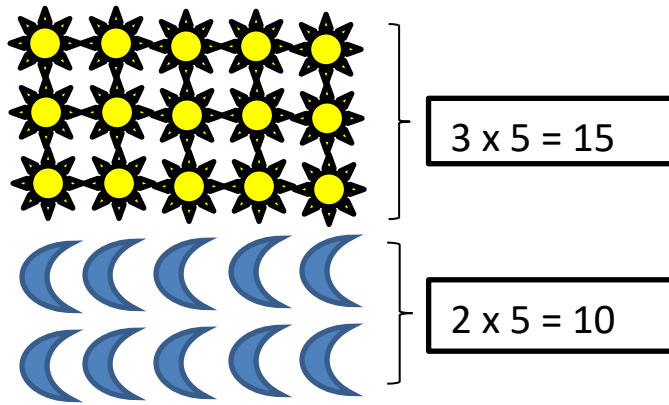
1.  $4 \times 4 = 16$

 $2 \times 4 = 8$

2.  $3 \div 3 = 1$

 $15 \div 3 = 5$

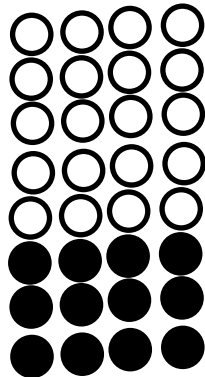
3.



Part C:

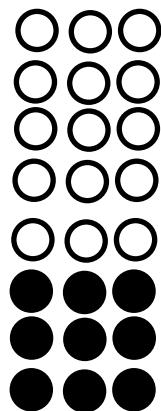
1.

$$32 \div 4 = (20 \div 4) + (12 \div 4) = 8$$



2.

$$8 \times 3 = (5 \times 3) + (3 \times 3) = 24$$



3.

$$45 \div 5 = (30 \div 5) + (15 \div 5) = 9$$

