

## Array Models for Multiplication

Name \_\_\_\_\_

1. Story: 4 students have 3 balloons each. How many balloons do they have between them in total?  
Please use 3 different ways to represent your answer – *Diagram*, *Arithmetic Sentence* and *Words*.

©PMDT

Diagram

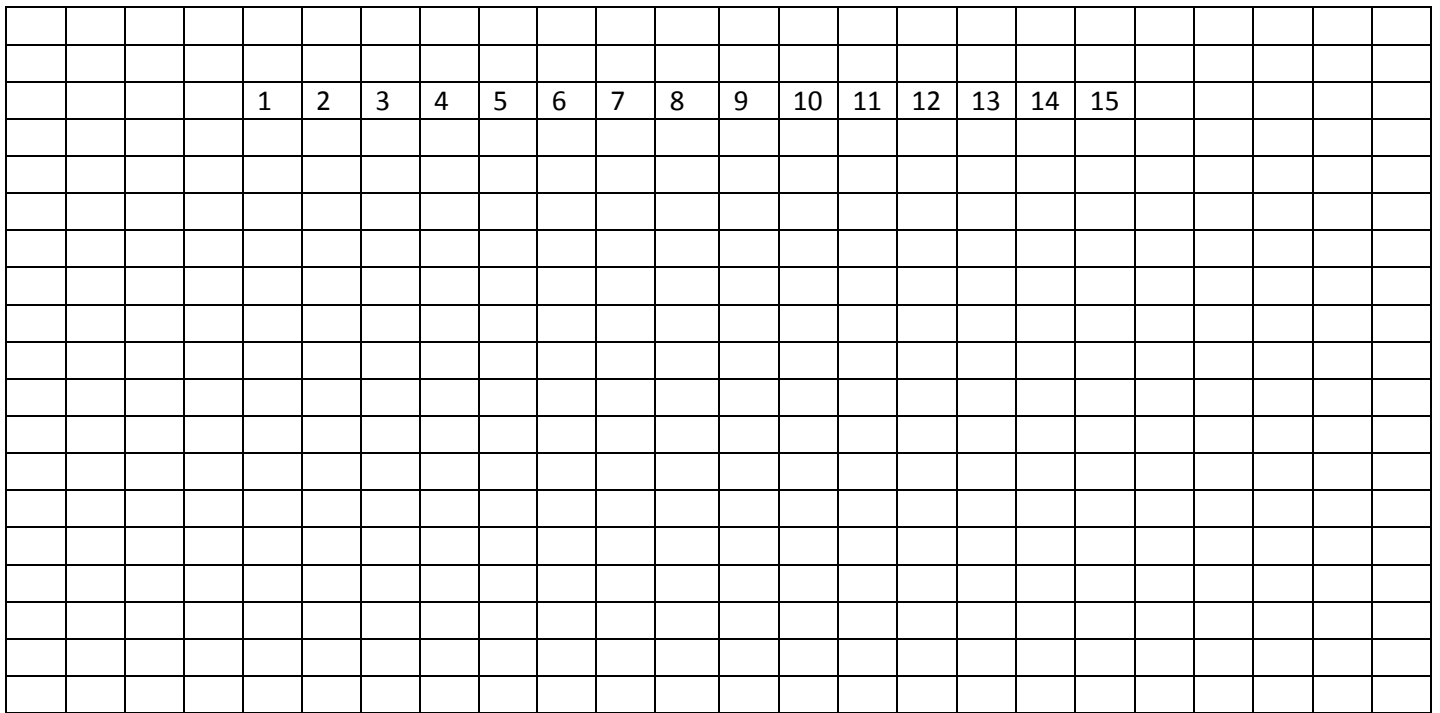
Arithmetic Sentence  
(ex.  $5 \times 8$ )

Words

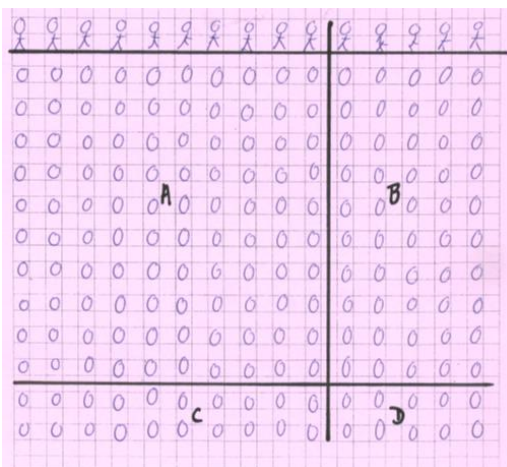
2. Story: A chef bought 15 boxes of a dozen eggs to make deserts for a wedding meal. How many eggs did he buy in total? Please use arrays to represent this answer in a diagram.

Diagram using arrays

3. Now, represent the number of eggs the chef bought again, this time using graph paper.



4. A diagram made using arrays is called an *Array Model*.



By drawing lines on the array model we divide the area into A, B, C, D.

Fill in the following:

In section A: There are 10 groups of \_\_\_\_\_ eggs = 100 eggs

In section B: There are 5 groups of \_\_\_\_\_ eggs = \_\_\_\_\_ eggs

In section C: There are \_\_\_\_\_ groups of 2 eggs = \_\_\_\_\_ eggs

In section D:

5. We know the chef bought 180 eggs.

Fill in the following:

$$A + B + C + D = \text{_____ eggs}$$

6. By using questions 4 and 5, fill in the following:

$$15 \times 12 = (10 + 5)(10 + 2) = (10 \times 10) + (\text{___} \times 10) + (\text{___} \times \text{___}) + (\text{___} \times 2) = \text{_____}$$