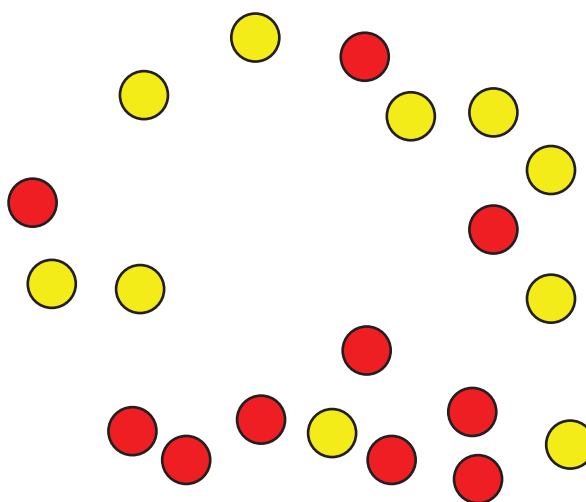


# Lesson 8: Count Columns and Objects in Columns

- Let's learn about columns in arrays.

## Warm-up: Estimation Exploration: Rearrange the Dots

How many counters do you see?

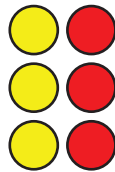


Record an estimate that is:

too low	about right	too high

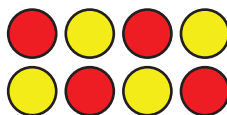
## 8.1: Count by Columns

1.



- How many columns are in this array?
- How many counters are in each column?
- How many counters are there in all?

2.



- How many columns are in this array?
- How many counters are in each column?
- How many counters are there in all?

3. Use 10 counters to make 2 columns with the same number in each column.

a. How many counters are in each column?

b. How many rows are in the array?

c. How could you count these counters without counting by ones?

4. Use 15 counters to make 3 columns with the same number in each column.

a. How many counters are in each column?

b. How many rows are in the array?

c. How many counters are in each row?

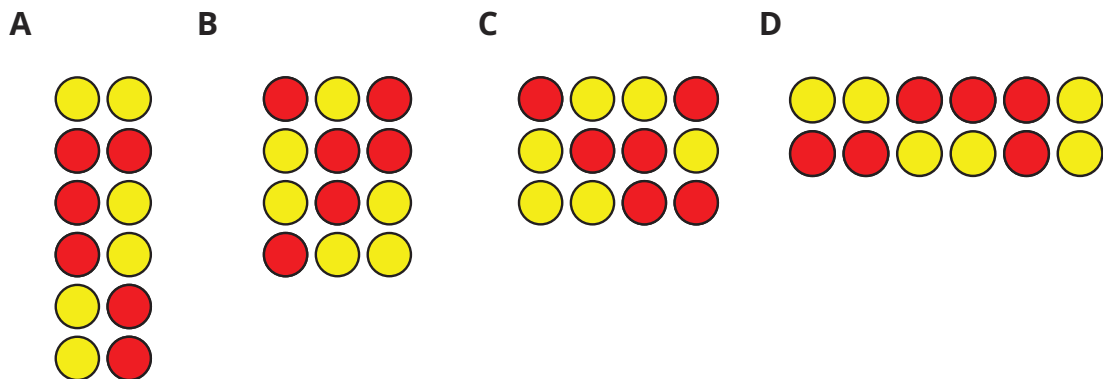
d. How could you count these counters without counting by ones?

## 8.2: Guess My Array

Four students talked about their arrays.

- Han said, “My array has an even number of counters. It has 2 rows with 6 counters in each row.”
- Priya said, “My array has more than 10 counters. It has 4 rows with 3 counters in each row.”
- Elena said, “My array is very tall. It has 6 counters in each column.”
- Kiran said, “My array has more columns than rows. It has 3 rows.”

1. Which array belongs to which student? Write the name of each student below their array.



2. Each student used \_\_\_\_ counters to make an array.

3. Make an array using up to 25 counters, but don't let your partner see.

Give your partner clues about your array, so they can try to make it. Compare to see if your partner made the same array.

Be prepared to explain how you knew the total number of counters.