OBJECTIVE: Use multiplication and division within 100 to solve problems in situations involving equal groups, arrays, & measurement quantities, by using drawings and equations.

SUPPLIES:
- Array Around graph boards
- Dry erase marker

APPROXIMATE TIME: 15 minutes

TEACHING TIPS:
Students will work on the concepts of area as well as factors for a given area. Students will have a graph board and one student will create a rectangle on the board. That student will then give the area of the rectangle to the other student who will try and recreate the same exact rectangle on their board. The student will plot point on the grid and will be informed if the points are on the line of the rectangle, inside the rectangle or outside the rectangle.

Make sure that students are aware that an array is a rectangular shape and to find the area of a rectangle is length times width.

Adapting game for entire class: Teacher can create a grid on the board and student can state points on the grid by giving the x and y coordinates.

Expanding Activity: For students wanting more of a challenge have them figure out what numbers can make only one rectangular shape (prime numbers) and what can make more than one rectangular shape (composite numbers).

Math Terms
Array – a set of objects or numbers arranged in order, often in rows and columns, forming a rectangular shape
Factor – a whole number that multiplies with another number to make a product.
Commutative Property – In addition and multiplication, numbers can be added or multiplied together in any order, a + b = b + a and a x b = b x a
Product – result when two numbers are multiplied

GUIDED QUESTIONS: TO PROMOTE CRITICAL THINKING AND PROBLEM SOLVING
- Describe what commutative property means? Why is it important? Does commutative property work for subtraction and division?
- What areas created only one way to make the rectangle? What areas could create three or more different types of rectangles?
Players will need a game board and will share a dry erase marker.

One player “Drawer” will draw a rectangular array on a game board and hide it so the other players can’t see it.

The Drawer will let the players know the area of the array and the players will write it on their board.

Using the other game board the players will take turns plotting points on the grid.

If the point lands on the line of the rectangle drawn on the hidden grid the point stays where placed.

If the point is outside the rectangle array the Drawer will mark an X through it.

If the point is inside the rectangle array the Drawer will mark a small square around it.

Players will continue to plot point until one player is able to tell the points of all four corners of the array and tell the dimensions of the width and length.

The player that can tell the dimensions is the Drawer for the next round.