



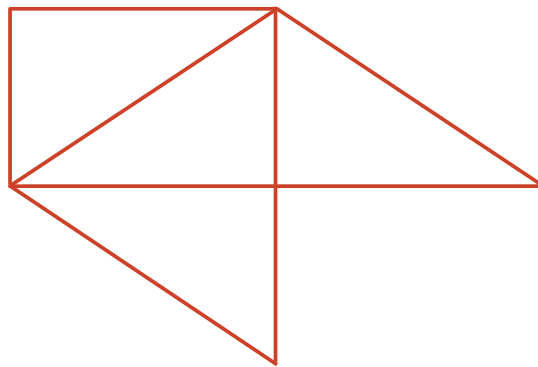
# Two or More Lines

Let's look at lines that cross and lines that don't.

## Warm-up

### How Many Do You See: A Curious Figure

How many line segments do you see? How do you see them?

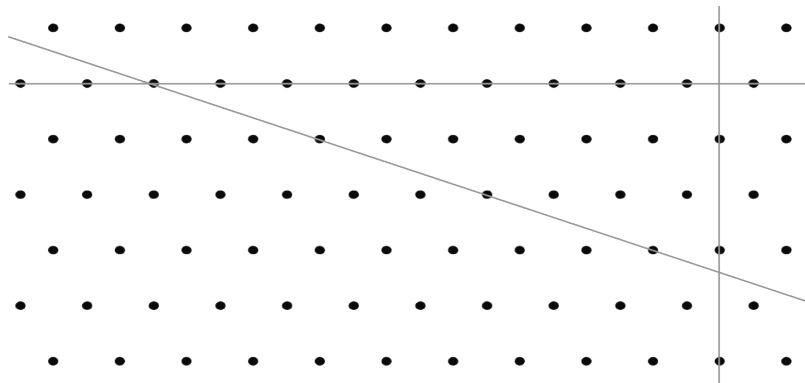


## Activity 1

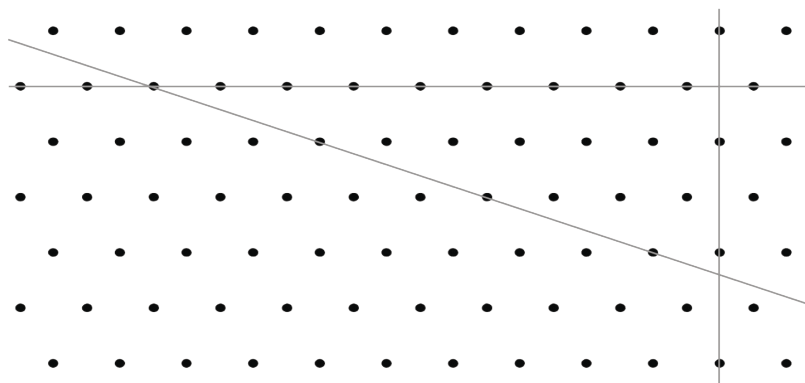
### Four Lines

1. Three lines on a field of dots **intersect** (cross) to form a triangle. Can you draw a fourth line so that the four lines form a quadrilateral?

Use the drawing to explain or show your reasoning.



2. Here is a copy of the same drawing. Can you draw a fourth line to form a rectangle?



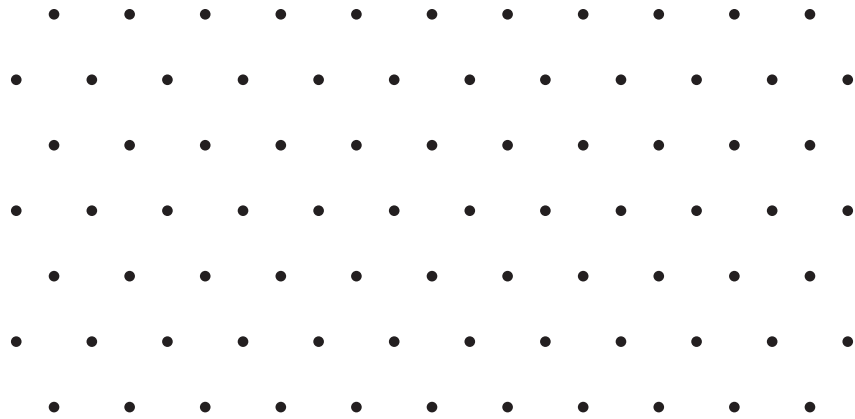
Use the drawing to explain or show your reasoning.

3. Discuss the drawings with your group. Check if they agree with your conclusions.

## Activity 2

### To Cross or Not to Cross

Here is another field of dots. Each dot represents a point.



1. Draw a line through at least 2 points. Label it Line H.
2. Draw another line that goes through at least 2 points and intersects your first line. Label it Line G.
3. Can you draw a new line that you think would never intersect:
  - a. Line H? If so, draw the line. If not, explain or show why it can't be done.
  - b. Line G? If so, draw the line. If not, explain or show why it can't be done.

4. Here is a trapezoid.

Do you think its top and bottom sides are parallel?  
What about its left and right sides? Explain or show how you know.



If you have time: Can you draw a new line that would intersect neither Line H nor Line G? If so, draw the line. Explain how you know the lines would never cross. If not, explain why it can't be done.