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GeoGebra Code for Parallel Grid

1. Make **Slider** with variable $a = 0$ to 0.5 and increment 0.05. Set the slider to $a = 0$.

2. Define the polygon **P=Polygon[(-4,-4),(4,-4),(4,4),(-4,4)]**. Geogebra will automatically create four line segments. This will be the outer edge of our grid.

3. We will now split the polygon into eight rows. We do this using a sequence:

   Sequence[Segment[(-4,t),(4,t)],t,-4,4,1]

   This creates list1: {8,8,8,8,8,8,8,8}

4. To create the illusion, we need to fill our rows with black rectangles which are not lined up from row to row. We begin by making rectangles in every other row which will not move:

   Sequence[Sequence[Polygon[(i,j),(i,j+1),(i+0.5,j+1),(i+0.5,j)],i,-4,3,1],j,-4,2,2]

   This creates list2.

   To make the rectangles a solid color, right click on "list2" and select "Object Properties". Under the "Color" tab, change "Opacity" to 100. You can also change the color of your rectangle.

5. Next, we create black rectangles that move on the rows that don't currently have rectangles:

   Sequence[Sequence[Polygon[(i+a,j),(i+a,j+1),(i+0.5+a,j+1),(i+0.5+a,j)],i,-4,3,1],j,-3,3,2]

   This creates list3.

   To make the rectangles a solid color, right click on "list3" and select "Object Properties". Under the "Color" tab, change "Opacity" to 100. It is recommended that the color of these rectangles is the same as the rectangles you made in Step 4.

6. Our illusion is done! Slide a to see the rectangles move, giving the appearance of our straight, horizontal lines becoming curved!

www.geogebra.org/apps