In this worksheet we'll learn how to draw a perspective view of a plane using a straightedge alone. The one rule you need to know to complete this exercise is the fact that parallel lines in the plane, when viewed in perspective, appear to meet at a point on the horizon.

How to draw a tiled plane (head on view).

1. Start with a blank sheet of paper. Draw a line on the paper; this will be the horizon.
2. Draw another line on the paper parallel to and "below" the horizon. This will be the front of the first row of tiles.
3. Drop a perpendicular from the horizon to the first row of tiles. Let I be the point of intersection on the horizon and let A be the point of intersection on the first row.
4. Mark a point B on the first row. This will be the width of a tile.
5. Join B to I. What have you done?
6. Make one more line, parallel to the horizon and intersecting the column you have drawn. This completes your first tile.
7. Lightly draw one of the diagonals of your first tile, and extend that diagonal out to the horizon.
8. Now think about the parallel diagonal of the next tile up the column. Where on the horizon should that diagonal extend to?
9. Lightly draw both diagonals of the next square up the horizon.
10. Draw the tiles in the front row that are adjacent to the first tile you completed.
11. Notice that at this stage, you should have completed at least six tiles! Extend this construction until you have at least 30 tiles constructed.

How to draw a tiled plane (oblique view).

1. Start with a blank sheet of paper. Draw a line for the horizon, and pick two points I and J on the horizon towards the left and right ends respectively.

2. Pick a point A that will be a corner of the tile, and join that point to I and J by lines. You should have a large triangle on your paper.

3. Pick points B and C, one on each of the two lines that you drew where B is on the line AJ and C is on the line AI. These will be two more vertices of the tile.

4. Where will the next vertex of the tile be? Complete the first tile.

5. Lightly draw the diagonal of the first tile.

6. Now comes the tricky part. At this stage you can draw two more diagonals. Can you find them? Ask for help if you need to. Lightly draw these diagonals.

7. At this stage you can quickly complete three more tiles for a total of four.

8. Extend your construction until you have at least 25 tiles drawn.

These two constructions are related to each other.

1. In the two constructions, the points A, B, and I are equivalent. The second construction has a point J. Where "is" that point in the first construction?

2. What portion of the first construction corresponds with the second construction?

3. Early on in the first construction (step 5) you were asked to draw a parallel line. What does that correspond to in terms of I and J? Which step of the second construction does this correspond to?

4.