

TRI-HEXA-FLEXAGON

Equilateral triangles are used to form a pattern like that of Figure 1 below. Copy this pattern or use the triangle from the previous page to make your own.

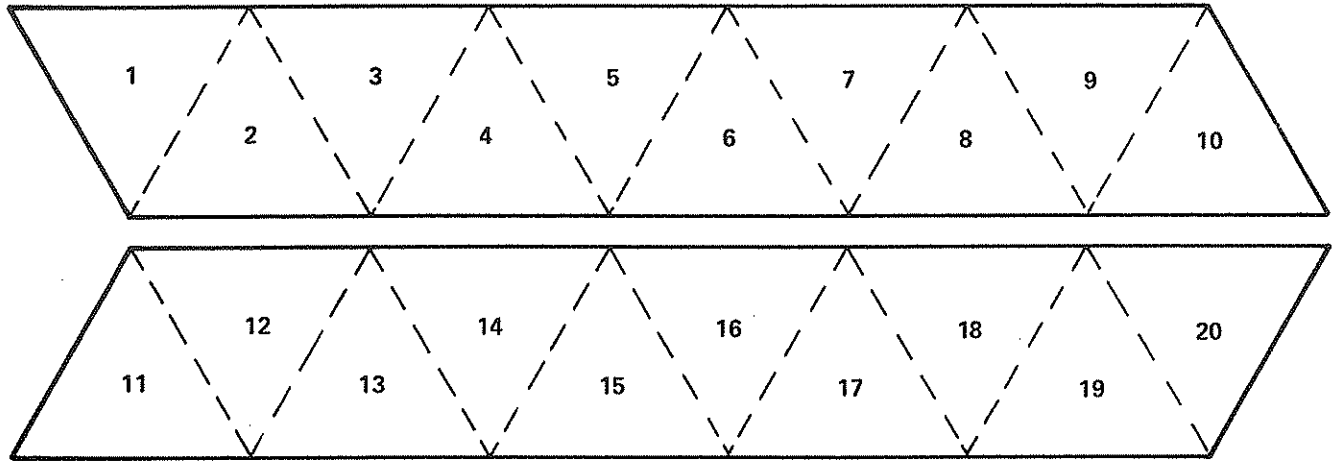


Figure 1

The triangles are numbered on the front and back to make the instructions easier to follow. Note that 11 is behind 1 and 12 is behind 2 and so on.

1. Cut out the pattern and score on the dotted lines.
2. Hold the pattern with the front side up. Fold a mountain fold along line AB as in Figure 2.

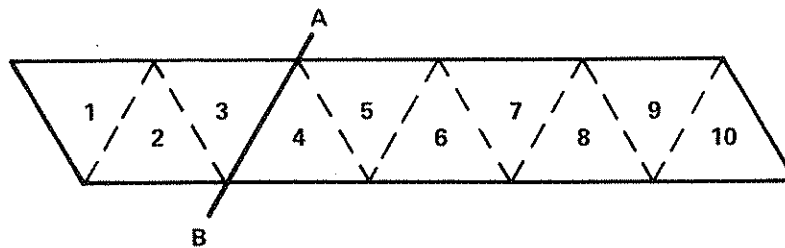


Figure 2

The result of your fold should look like Figure 3.

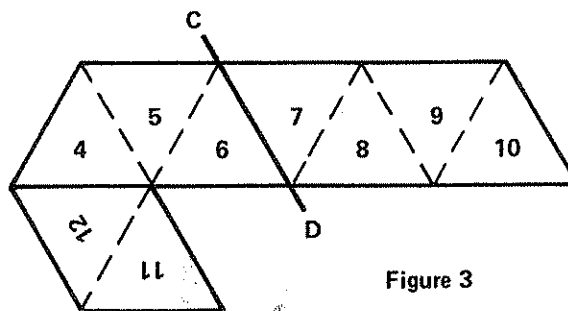


Figure 3

3. Fold a valley fold along line \overline{CD} in Figure 3. This will place triangle 7 on triangle 6. The model now looks like Figure 4. Note that triangle 19 is on top of triangle 11.

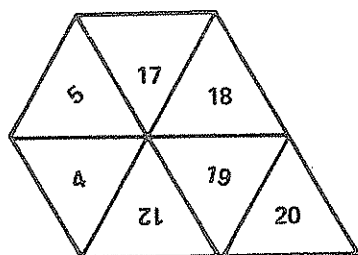


Figure 4

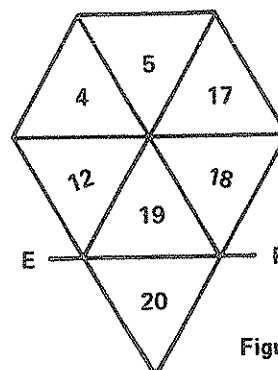
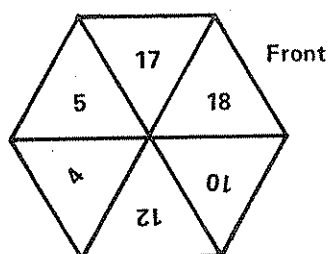
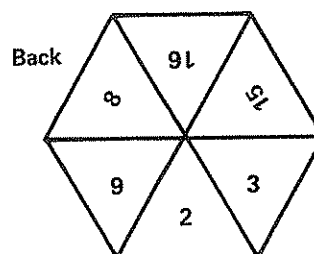


Figure 5

4. Put triangle 19 under triangle 11 as in Figure 5.
5. Fold a valley fold along line EF in Figure 5. The triangle 20 will be on top of triangle 11. Glue triangle 20 to triangle 11.
6. Your flexagon should look like Figure 6 below.



Front



Back

Figure 6

7. Crease the lines between triangles back and forth several times.
8. Pinch two adjacent triangles together to form a three pronged star whose edges are double as in Figure 7.

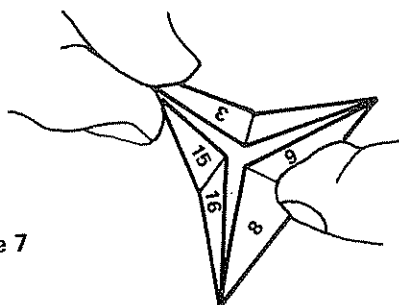


Figure 7

9. Open at the center. Compare the number pattern with the front and back of Figure 6 above. How many different patterns of numbers can you turn up by flexing?

