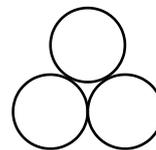## You Need

- Thirty-six [36] plates and floor space
- Thirty-six [36] counters numbered 1 to 36

Your Task

1. Use three plates to make a triangle.

   The plates must touch each other like this.

2. Add more plates to make the next size triangle.

   How many plates did you add?

3. Make a triangle which is one more size bigger.

   How many plates did you add?

4. Predict how many plates you would add to make the next triangle ...and the one after ...and the one after ...and the one after ...
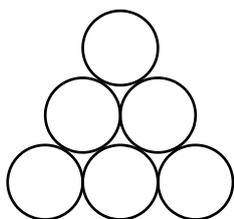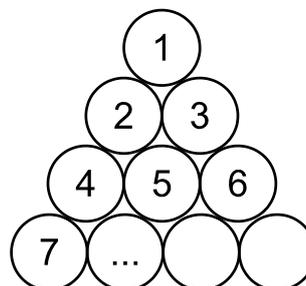
5. Record the number of plates added in each step. Look for a pattern.

6. Build a plate triangle with *all* thirty-six plates.

   Place counters on them *all* as in this picture.

7. Look for number patterns through the layers.

   Record the patterns you see.

8. Use this 6-plate shape and place counters 8 to 13 on the triangle so each side adds to 33.

9. Now use the counters 1 to 6 and make each side add to the same number. Find the two possible totals.

Challenge

Choose any six consecutive numbers and place them on the plates so the sides add to the same number. Can you find two totals?

PLATE TRIANGLES