Investigation Guide for Plate Triangles – Task 28

Complete after original task card.

Investigation: **Triangular Number Patterns**

The numbers 1, 3, 6, 10, ... are called Triangle Numbers because they are the only numbers of plates that can make a triangle like the ones on the card.

Your Task
Record the 8 triangular numbers found in the Task.
Find the thirteenth and fourteenth triangular numbers. Explain your strategy.

What triangular numbers are closest to 200? Explain your strategy.

Are there patterns of odd and even triangular numbers? Describe these patterns.

Add the two adjacent triangle numbers and record. Can you see a pattern? What are these numbers called?

List some triangle numbers that are also square numbers.

Challenge
What is the first triangle number after 1000? What strategy did you use?