Ziggurats

Ziggurats were built by the ancient Assyrians and Babylonians.
A ziggurat is a tiered pyramid that was used as a temple.
Each tier of a ziggurat is smaller than the one below it.

Tiers are layers arranged one on top of another.

You will need linking cubes, triangular dot paper, and grid paper.

Part 1

➤ Use linking cubes.
Build a ziggurat with each number of tiers:
1 tier   2 tiers   3 tiers
Each tier is centred on the tier below it.

Each block covers the block below it.

You can
do this.

You cannot
do this.

➤ Draw each ziggurat on triangular dot paper.

➤ Predict the number of cubes required to build a 4-tier ziggurat. Build it to check your prediction.

Part 2

➤ Find the volume of each ziggurat in Part 1. Record the numbers of tiers and the volumes in a table.

Number of Tiers	Volume
1	
2	

Graph the table of values.
Explain how the graph represents the pattern.
Write a pattern rule for the volumes.

➤ Use the pattern rule.
What is the volume of a 6-tier ziggurat? Explain.

Display Your Work

Create a summary of your work. Describe all the patterns you used.
Use pictures, numbers, and words.

Take It Further

Suppose you built staircases like this one.
Predict a pattern rule for the volumes of staircases
with different numbers of tiers.
Build the staircases to check your prediction.
Draw each staircase on triangular dot paper.