Prism Investigation (2)

Name: Date:

Problem: The shape at each end of a prism has 23 sides. How many vertices does the prism have?

The easiest way to solve this problem would be to find a prism with a 23-sided shape at each end and then count the vertices. However, you are not likely to find one of these in your classroom. Let's begin, then, by looking at the prisms that you can find.
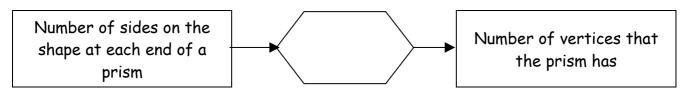
A triangular prism has a triangle at each end which has 3 sides. How many vertices are there altogether on a triangular prism? Write this in the table below.

Then complete the table for the other shapes.

Name of prism	Name of shape at each end	How many sides has the shape at each end got?	How many vertices does the prism have?
Triangular Prism	Triangle	3	
Cuboid (Rectangular Prism)		4	
Hexagonal Prism		6	

Can you see a pattern? What do you have to do to the number of sides of the shape at the end of a prism to find out the number of vertices that the prism has?

Complete the following function machine.

Number of sides on the shape at each end of a prism	→ ⬡ →	Number of vertices that the prism has

So if the shape at each end of a prism has 23 sides, how many vertices will that prism have?

Can you explain why this function machine works?