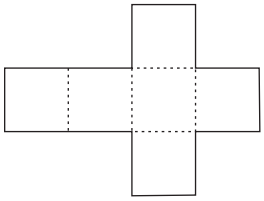
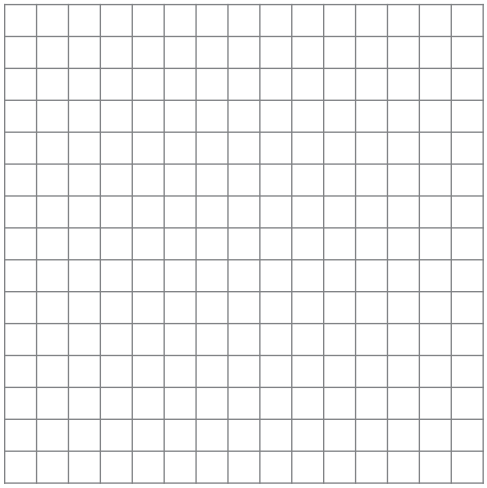
Building Blocks

NAME _____

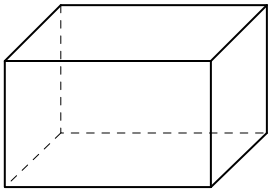
1. Use polydron squares to build the following net. Fold it into a cube.



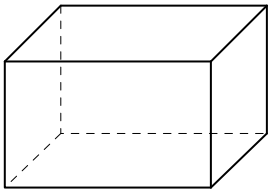
2. Use 6 polydron squares to create 10 other nets that fold into a cube. Test your nets to make sure they fold into cubes. Sketch your nets below. Make sure no 2 are geometrically congruent (If you rotate or turn over one net, make sure it doesn't match another net).



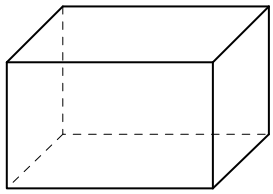
3. If each face is a unit square (1×1), what is the volume of the cube? Show your calculation using the picture below.



4. If each face is a unit square (1×1), what is the surface area of the cube? Show your calculation.



5. Suppose your rectangular prism is a fish tank. A fish tank only has five faces because the top is left open. Show your calculation for the surface area of the fish tank.



Next, suppose you are dealing with a larger cube with length, width, and height of 2. Compare the two cubes.

6. Guess the new volume without using the formula.

7. Guess the new surface area without using the formula.

8. Calculate the actual volume of the cube, Show your calculation.

9. Calculate the actual surface area of the cube. Show your calculation.

10. What is the ratio of the volume of the larger cube to the smaller cube?

11. What is the ratio of the surface area of the larger cube to the smaller cube?

12. Were your guesses accurate? Explain why or why not.