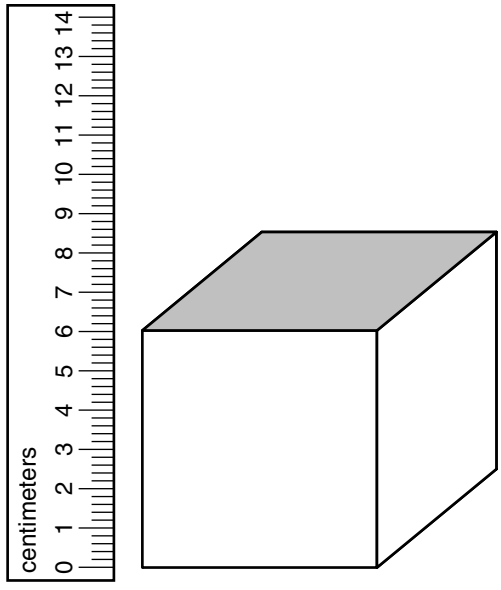
About the Mathematics in This Unit (page 1 of 2)

Dear Family,

Our class is starting a new mathematics unit about geometry and measurement called *Prisms and Pyramids.* During this unit, students study volume—the amount of space a 3-D object occupies. They use paper boxes and cubes to develop a strategy for finding the volume of any rectangular prism. Using concrete materials, they also find the volume of other geometric solids, such as pyramids, cylinders, and cones.

Throughout the unit, students work towards these goals:

BENCHMARK/ GOAL	EXAMPLES
Find the volume of rectangular prisms.	What is the volume of this cube? 
Use standard units to measure volume.	All the edges of the cube are the same length: 6 cm. The base of the cube is 6×6, so 36 centimeter cubes would fit on the bottom of the box. Since the cube is 6 centimeter high, there are 6 layers in the box. $6 \times 36 = 216$. The volume of the cube is 216 cubic centimeters (216 cm^3).

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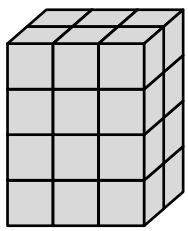
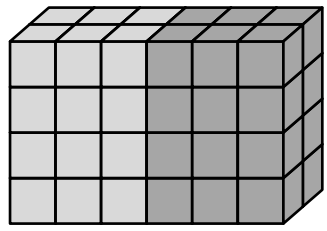
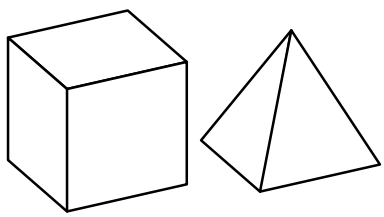
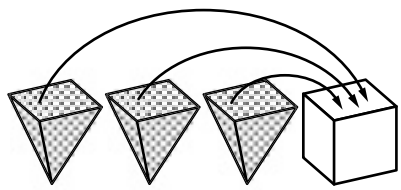
BENCHMARK/ GOAL	EXAMPLES	
Identify how the dimensions of a box change when the volume is changed.	Compare the volumes and the dimensions of these rectangular prisms. Box A:  Box B:  Box B has twice the volume of Box A; you can see that Box A was doubled to build box B. The dimensions of Box A are $3 \times 2 \times 4$. The dimensions of Box B are $6 \times 2 \times 4$. Only the dimension across the front is different.	
Explain the relationship between volumes of prisms and pyramids with the same base and height.	This cube and this pyramid have the same square base and they are the same height. 	To compare their volumes, I filled the pyramid with rice and poured it into the cube. I had to fill the pyramid 3 times to completely fill the cube.  The volume of the cube is three times the volume of the square pyramid.

In our math class, students spend time discussing problems in depth and are asked to share their reasoning and solutions. It is important that children solve math problems in ways that make sense to them. At home, encourage your child to explain his or her math thinking to you.

Please look for more information and activities about *Prisms and Pyramids* that will be sent home in the coming weeks.