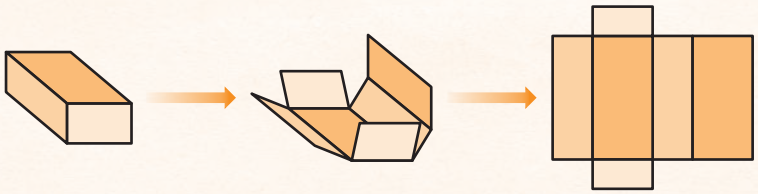
Dear Family,

Your child is learning about nets and surface area.

Your child has learned how to find the area of plane figures such as rectangles and triangles. Now your child is going to use that knowledge to find the surface area of three-dimensional figures.

The surface area is the combined area of all of the "faces" of a figure. You can think of a "face" as a flat side of a three-dimensional figure. The rectangular prism below has six faces.



Imagine cutting a three-dimensional figure along its edges and unfolding it. The flat, unfolded model of the figure is called a *net*. You can use the net of a figure to find the surface area of the figure.

A familiar way that surface area is used in everyday life is wrapping a gift box. The surface area of the box determines the amount of wrapping paper you need.

Consider the following example:

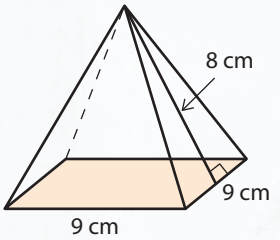
Lorena is making pyramid-shaped gift boxes. The length of each edge of the base of the pyramid is 9 cm. The height of each triangular face of the pyramid is 8 cm. How much card stock does Lorena need to make each box?

The next page shows two ways your child may find the surface area of each pyramid-shaped box to figure out how much card stock is needed.

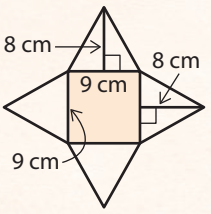
NEXT

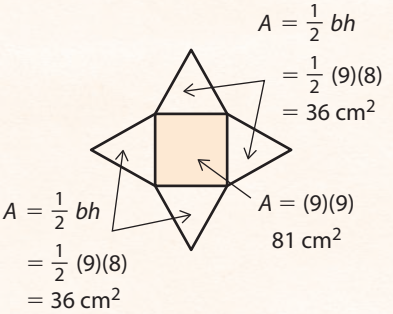
Nets and Surface Area: Sample Solution

Lorena is making pyramid-shaped gift boxes. The length of each edge of the base of the pyramid is 9 cm. The height of each triangular face of the pyramid is 8 cm. How much card stock does Lorena need to make each box?



One way: Label a net of the pyramid to find its surface area.





Add the areas of the faces: $81 + 4(36) = 81 + 144 = 225\text{ cm}^2$

Another way: Use a table to organize the information and find the surface area of the pyramid.

Face	Base (cm)	Height (cm)	Area (cm^2)
Triangle	9	8	36
Triangle	9	8	36
Triangle	9	8	36
Triangle	9	8	36
Square	9	9	81

Add the areas of the faces: $36 + 36 + 36 + 36 + 81 = 225\text{ cm}^2$

Answer: Both methods show that the surface area of the pyramid is 225 cm^2. So Lorena needs 225 square centimeters of card stock to make each box.