

Problem of the Week

I have had the privilege of chatting with many tremendous teachers. During these conversations, I have noticed the concern teachers have with concepts of measurement. More specifically, too often students are confused with area, perimeter, and volume, and will often mix them up. For this week's problem, I have focused on measurement. These tasks were designed to determine how much your students can recall and apply about their previous learning.

I have attempted to create tasks that may be novel to students so that they are applying their problem solving strategies to arrive at the solution. As always, I will provide opportunities for primary, elementary and secondary.

Be mindful that during these prompts, it is important the teacher listens to student conversations and asks questions that illicit student thinking.

Primary	Malia and Josef were each given a string and asked to make a rectangle. Their two strings were different lengths. Malia said that her rectangle had a perimeter that was 14 cm greater than Josef's rectangle. What lengths of string could Malia and Josef be given?
<i>An extension could be to provide a range in the difference in perimeters. For example, the prompt could have stated that the perimeter of Malia's rectangle was 20 - 25 cm greater than the perimeter of Josef's rectangle.</i>	

Elementary	Malia and Josef were each given a string and asked to make a rectangle. Their two strings were different lengths. Malia said that her rectangle had an area that was 24 cm^2 greater than Josef's rectangle. What lengths of string could Malia and Josef be given?
<i>An extension could be to provide a range in the difference in areas. For example, the prompt could have stated that the area of Malia's rectangle was $30 - 40 \text{ cm}^2$ greater than the area of Josef's rectangle.</i>	

Intermediate

Malia and Josef each created a rectangular prism. Each of their rectangular prisms had different dimensions. Malia said that her rectangular prism had a surface area that was between 10 cm^2 and 25 cm^2 greater than Josef's rectangular prism. What are possible dimensions of Malia's and Josef's rectangular prisms?

An extension could be to provide an exact difference in surface areas instead of a range. For example, the prompt could have stated that the surface area of Malia's rectangular prism was 20 cm^2 greater than the surface area of Josef's rectangular prism.