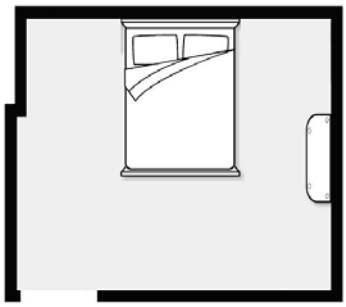
Comparing Area and Perimeter

Can there be more than one rectangle with the same area? If a rectangle changes shape, does the area change? The perimeter? Let's explore these questions.

1. Imagine you have a rectangular room that is 80 square feet. What could that look like? Use a piece of graph paper and create an example of what shape the room might be. Be sure to label the length and width. What is its perimeter?

   Can you create more than one shape? Try to sketch several different rectangular shapes. Label the length and width of each, then check to make sure that the area is still 80 square feet. Now calculate the perimeter of each.

   What did you discover about area and perimeter?

2. Now imagine that you have a roll of wallpaper border that you want to use to decorate a bathroom. If the roll of wallpaper is 36 feet long, what are some different size bathrooms that could be trimmed, using all of the roll? (Assume you will not overlap or cut the border, and that it will go around the room continuously – even on the door.)

   Use graph paper to sketch your rooms. Label the length and width of each, then check to make sure that the perimeter is still 36 total feet. Now calculate the area of each room.

   What did you discover about area and perimeter?

3. If you doubled the length and width of a rectangle, would do you think would happen to its perimeter? What do you think would happen to its area? Test it out by sketching a couple of examples, then share your results.

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