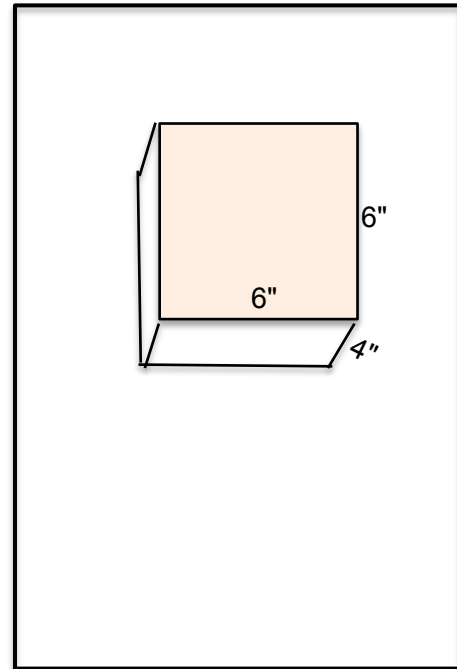
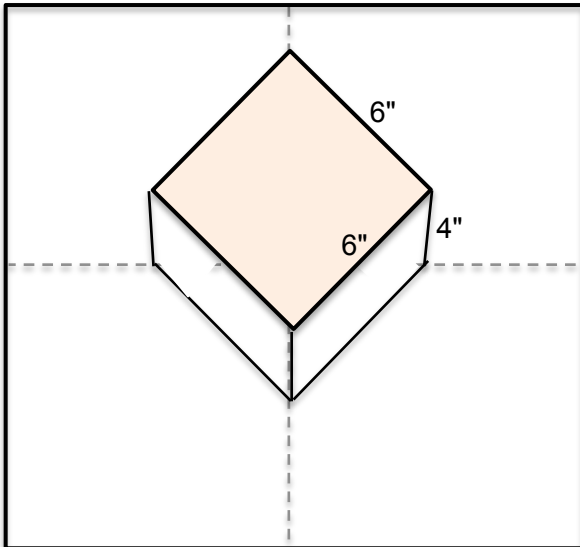


## How much wrapping paper can you save?

First watch the video at: <https://www.youtube.com/watch?v=TNqc2yWZztE> - t=16

Sara Santos' formula,  $w$  = length of wrapping paper edge necessary to wrap a present diagonally = diagonal across the largest face of the box (the face or rectangle made up of the two longest sides of the box) + 1.5 x height (the other dimension).

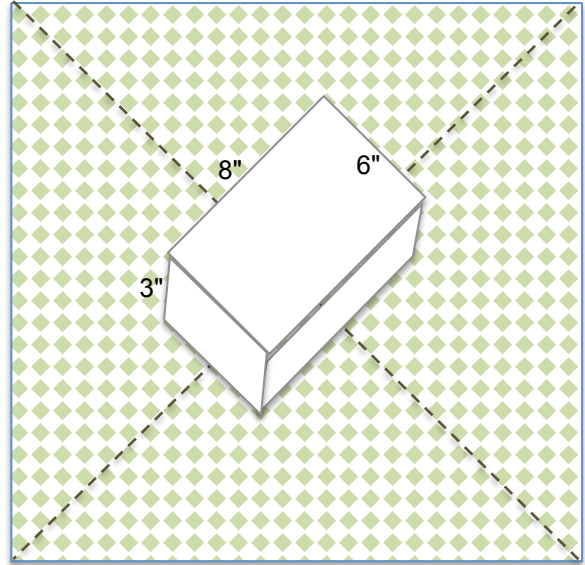
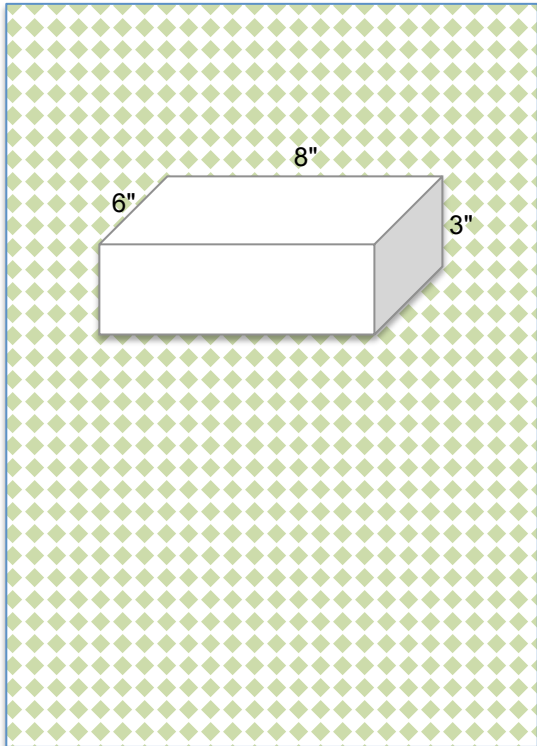


I've drawn our present aligned in two different ways on wrapping paper.

1. Using Sara Santos' formula, calculate the dimensions and square inches of paper that you will need for wrapping a present with her diagonal method. Show your figuring on the left-hand drawing.
  - a. Dimensions
  - b. Square wrapping paper area required
2. Use the picture on this handout and the video to help you calculate the wrapping paper necessary for wrapping a present in the more traditional way.
  - a. Dimensions
  - b. Square wrapping paper area required
  - c. Can you figure out a general way (like a formula) for calculating the amount of wrapping paper necessary for this method of wrapping?
3. What percent of paper does wrapping on the diagonal save?

4. Most packages don't have a square face. Do you think this method will work if our box has 3 different dimensions?

Let's experiment.



5. What size wrapping paper will you need to wrap this box conventionally? (Style on the left).
- Dimensions
  - Square wrapping paper area required
6. What size wrapping paper will you need to wrap the present using Sara's method?
- Dimensions
  - Square wrapping paper area required
7. Show your calculations on the right-hand drawing to demonstrate whether Sara's method will actually cover the package.
8. What percent of wrapping paper would be saved using Sara's method?