

Joe Student

Mr. Maite and Mr. Resse

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### Process Analysis Paper

A week ago in math class we performed a lab to determine the number of bricks in a wall on the roof of our school. There were many complex steps involved in this process. My group and I hypothesized that there would be 2,500 bricks in the wall that we were assigned to. Here is the process we followed to find the number of bricks in our given wall.

The first and probably most important step in the roof top lab was to find the total area of our wall. Since the height of the wall was too great for us to measure, we used sets of darker bricks that were in intervals on the wall. We measured how tall one set of darker bricks was and then multiplied it by the number of sets there was on the wall. We came up with a total height of about 13.99 ft. Following that we used our tape measure to find the total length of the wall. We concluded that the length was approximately 58.25 ft. Finally we found the total area of the wall by multiplying the height and length together. We calculated a total area of 814.175 square ft.

The next step in the lab was to find the area of objects on the wall not made of brick like doors and windows and subtract it from the total area of the wall. First we found the area of one of the smaller windows which was 45.96 ft. We multiplied it by two to get 91.92 square ft. for the two small windows. Next we calculated the area of the bigger windows and found the total area of both to be about 142.94 square ft. Following

that we found the area of the door which we calculated to be approximately 23.31 square ft. Finally we found the area of the small window above the door which came out to be about 10.41 square ft. The total area of the objects not made of brick was about 268.57 square ft. Then we subtracted it from the total area determining that the area of the part of the wall made up of bricks was about 546.35 square ft, which we later rounded to 546 square feet.

The Final step in the lab was to finalize all the calculations to find the number of bricks in our wall. To do this we used a process called dimensional analysis which is primarily used to convert measurements to different units, for example feet to inches. First we took the total area of the wall in the numerator over one and multiplied it by 144 in the numerator (the number of square inches in a square foot) over one foot to cancel the feet out into inches. The area of the wall made up of bricks was 78,624 square inches. Next we multiplied it by one over 23.38 square in inches (the number of square inches in one brick) by the rest of the numbers. When the numbers were multiplied by each other canceling out all the unneeded units it gave us a grand total of about 3363 bricks that made up the wall.

As you can see the roof top lab was informative as well as interesting. My group and I learned a lot about dimensional analysis and the process involved in estimating the area of any object. Dimensional analysis is very useful especially for situations like this to help convert units of measurement. It is a very important process to know and it can save you a lot of time and money.