

Measurement

m54w7

Substrand Indirect Measure

Dice Packaging



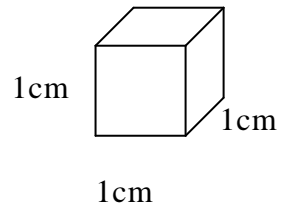
You are in charge of the packaging division of a company that manufactures dice (for board games). As the manager of the packaging division you are paid the tidy sum of \$125,000 per year – about the same as teachers I guess, and any mistakes you make won't be tolerated. You need to make sure you division of the company is cost effective????

Following is a problem you have to work through?

- Your company manufactures dice that 1cm x 1cm x 1cm

Volume 1cm^3

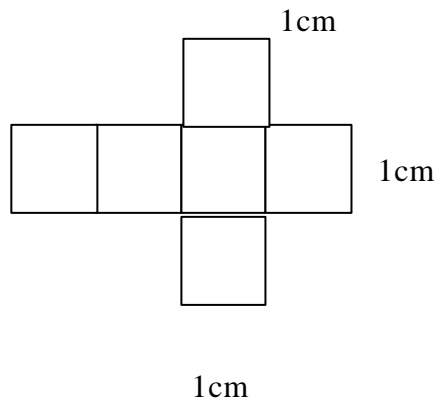
Example of a 1cm dice



- The net (as it would look if you were able to lay the dice flat) for one dice is detailed below

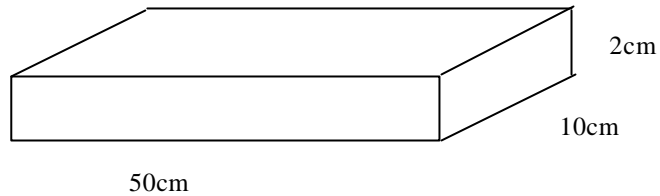
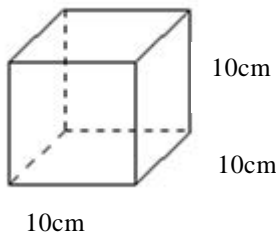
Surface Area $=6\text{cm}^2$

Example of a net of the dice



Task Description

- The company wants boxes big enough to hold 1000 dice at a time. Below are two options to consider for the dimensions of the box.



- Each of these boxes holds 1000 dice that are 1cm x 1cm x 1cm (check this if you are unsure). Draw the nets for these two, they do not have to be to scale but make sure they have the dimensions clearly notes on them
- Consider any other size boxes that may fit exactly 1000 dice (i.e: have a volume of 1000cm³). Draw the nets of 4 of these (these don't need to be to scale but need to have the dimensions written on them)
- THE BOTTOM LINE**

The company is cutting costs and needs to know what box is the most cost effective (The cheapest box that carries 1000 dice). Your job as the manager of the packaging division is to calculate which box is the cheapest. The box material costs \$1 for 1cm².

You will need to draw the nets of the boxes and calculate the surface area of each box, as the cost is \$1 for each 1cm² the surface area will also represent the cost of each box.

Remember your job is on the line so you need to make sure you come up with the cheapest box.

Conclusion:

Summarizes your findings as they relate to the concepts of VOLUME and SURFACE AREA. I don't require this set out like you would an assignment but I do need it neat and tidy.