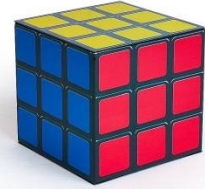


Michigan FFA Nursery Landscape CDE

Landscape Design & Estimation

Calculating Mulch & Volume



This sheet cannot be used during the contest. This is for NL contest team training and preparation

VOLUME CALCULATIONS:

- There are 27 cubic feet in a cubic yard ($3' \times 3' \times 3' = 27 \text{ feet}^3$) L X W X H
- The mulch or volume question may say how many cubic yards (27 ft^3) need to be ordered?
- There will be a labor cost and efficiency factors stated in the information sheet you get at contest

Example....Mulch:

- Material Costs: \$30 per cubic yard
- Mulch will be installed 3 inches deep ... or could be 4 inches deep.
- You can install 3 cubic yards per hour
- Labor Cost \$20 per hour

What you will need to know, which will not be in the information sheet is the **depth conversion decimal factor**

- 3 inches mulch depth = $3/12 = .25$ decimal
- 4 inches mulch depth = $4/12 = .33$ decimal
- 6 inches mulch depth = $6/12 = .50$ decimal

Example:

- You will need an Architect Scale that has 1/8 inch increments because the drawing at state is usually done to 1/8th scale.
- You measure the flower bed on the drawing and it measures: 10' x 10'
 - $10' \times 10' = 100$ square feet.
 - You must then multiply by the decimal conversion factor for H (height) or depth in this case
 - $100 \text{ ft}^2 \times H = \text{Cubic Feet}$
 - 3 inch depth = $100 \text{ ft}^2 \times .25 = 25\text{ft}^3$
 - Next you have to convert to Cubic Yards
 - 25ft^3 divided by $27\text{ft}^3 = .93$ Cubic Yards
 - .93 Cubic Yards ...order 1 full cubic yard.
 - Next you have to calculate Material Costs
 - $.93 \text{ yd}^3 \times \30 cost per cubic yard = \$27.90 material cost BUT you have to order a full cubic yard
 - 1 full cubic yard would be \$30 material cost
 - Next you have to calculate Labor Cost
 - 1 cubic yard / 3 cubic yards per hour = .33 of an hour to install
 - .33 of an hour x \$20 per hour Labor Cost = \$6.60 **Labor Cost**
 - **Next you have to combine Materials and Labor Cost**
 - \$30 Material Cost + \$6.60 Labor Cost = \$36.60 to put in the mulch in a 10' x 10' flower bed at 3 inches of depth.
 - **Problem is...you have not made a dime. You only covered your materials and labor cost**
 - In the real world you would have Overhead Costs (up to 20%) + Contingency Costs (up to 10%) + Profit (20% depending on the competition in the area) = **Final Bid Price to Customer**
 - You will probably only have to calculate material and labor costs in the state CDE... But just wanted to make you aware in case the question included these additional calculations.